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New York Economic Handbook 2009

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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. Click on "Newsroom" at the following website: *http://www.usda.gov/wps/portal/usdahome*

The chapters in this handbook are available in PDF format on the Applied Economics and Management outreach website: *http://aem.cornell.edu/outreach/publications.htm*

Chapter 1. Websites for Economic Information and Commentary

Steven C. Kyle, Associate Professor

1. http://rfe.org *Resources for Economists*
   This American Economics Association website has an encyclopedic list of all sorts of web-based economics sites.

2. http://www.economagic.com/ *Economagic -- Economic Times Series Page*
   Economagic is an excellent site for all kinds of U.S. economic data, including national income accounts, the Federal Reserve, the Bureau of Labor Statistics and more. The site includes a very useful graphing function and allows downloads to excel worksheets as well as simple statistical functions.

3. http://www.econstats.com/ *Economic Statistics*
   EconStats is another site with links to all kinds of US data. It also has links to data for many other countries.

4. http://www.whitehouse.gov/fsbr/esbr.html *Economics Statistics Briefing Room*
   This is the White House site for overall economics statistics. This also includes links to other parts of the government.

5. http://www.cbpp.org/index.html *Center on Budget and Policy Priorities*
   The Center on Budget and Policy Priorities is a non-partisan web site that focuses on economic policies related to the budget and their effects on low- and moderate-income people.

6. http://www.argmax.com/ *ArgMax*
   This is an excellent site for economic news, data links and analysis.

7. http://www.econlib.org/ *Library of Economics and Liberty*
   The Library of Economics and Liberty web site features articles and links to many books and other economics related resources.

8. http://www.heritage.org/ *Heritage Foundation*
   The Heritage Foundation comments on economic policy from a conservative viewpoint. This link takes you to a very useful federal budget calculator that will help you understand what the federal government spends its money on and where they get the money from.

9. http://www.kowaldesign.com/budget/ *Budget Explorer*
   This site contains a budget explorer which I like because it allows you not only to calculate your own budget but also links to the various executive branch departments with spending authority, so you can see exactly where the money is going.

10. http://www.concordcoalition.org/ *The Concord Coalition*
    The Concord Coalition is a non-partisan group advocating a balanced budget. Their site contains very useful graphs and projections showing what current taxing and spending proposals mean for the federal budget in the years ahead.

11. http://www.economy.com/dismal/ *The Dismal Scientist*
    This is a very good web site for evaluations of current statistics and policy.

12. http://www.federalbudget.com/ *National Debt Awareness Center*
    The National Debt Awareness Center has a useful graph providing up to date information on the size of the national debt and what the Federal Government is spending money on.

13. http://www.ombwatch.org/ *OMB Watch*
    OMB Watch is another web site devoted to information on what is happening to the federal budget.

14. http://www.brook.edu/default.htm *The Brookings Institution*
    The Brookings Institution publishes lots of good articles on current economic and political policy.

15. http://www.realtor.org *National Assoc. of Realtors*
    Check this site if you want information on real estate.

16. http://www.census.gov/ *U.S. Census Bureau*
    The U.S. Census Bureau web site provides demographic and population numbers.

17. http://www.briefing.com/Investor/Index.htm *Briefing.com*
    For a more in-depth analysis of stock and bond markets and the factors that influence them, check out Briefing.com.

18. http://www.imf.org/ *International Monetary Fund*
    The International Monetary Fund is an excellent site for data on all member countries, with a particular emphasis on balance of payments, exchange rate and financial/monetary data.

19. http://worldbank.org/ *The World Bank Group*
    The World Bank has cross country data on a wide variety of subjects.

20. http://www.undp.org/ *United Nations Development Programme*
    The UNDP has cross country data with a particular focus on measures of human welfare and poverty.

21. http://www.fao.org/ *Food and Agriculture Organization of the UN*
    The Food and Agriculture Organization of the UN has cross country information on food and agriculture.

22. http://datacentre2.chass.utoronto.ca/pwt/ *Penn World Tables*
    The Penn World Tables are a useful source for a variety of economic data series not available from other sources.

23. http://www.bls.gov/fls/ *U.S. Department of Labor, Foreign Labor Statistics*
    The Foreign Labor Statistics program provides international comparisons of hourly compensation costs; productivity and unit labor costs; labor force, employment and unemployment rates; and consumer prices. The comparisons relate primarily to the major industrial countries, but other countries are included in certain measures.

24. http://www.kyle.aem.cornell.edu/ *Professor Kyle's Web Site*
    Visit my web site for information about me, material contained in this chapter, and my work in the area of economic policy.

Chapter 2. The Marketing System

Kristen S. Park, Extension Associate

Special Topic – The Economy's Effect on Marketing and Promotion

One of the most important system issues is the economy. Banking, stock market, and fuel prices have sent shocks into all sectors, including food. Food price increases hit year-ago rates of 8-8.5% at times during 2008, and fuel costs are still high, although they continue to drop. As a matter of fact, after a year of higher than usual inflation, economists are now watching for signs of deflation.

The Department of Commerce's *Monthly Retail Trade and Food Service Sales* figures indicate that, during the month of September 2008, retail sales were down 0.3% from a year ago, September 2007 (Figure 2 – 1). Because people still need to eat, however, food retailers are doing better than the average retailer. Supermarket sales were up 3.7% and Warehouse Clubs and Supercenters (for example Costco and Walmart) were up 5.9%. Interestingly enough Beer, Wine, and Liquor store sales were up 5.6% and Drinking Establishment sales were up 7.4%.

Shoppers themselves are interested in self preservation and in downsizing their purchasing. They are shopping discount stores and extreme discount stores (Aldi and Walmart are doing very well, thank you); some are using one-stop shopping to conserve fuel, others are shopping the deals. Many consumers are eschewing premium brands for private label; many are using coupons at a level unseen in years. And, for the first time in decades, consumers are increasingly brown bagging lunch and fixing meals at home, as restaurant sales have plummeted.

Almost 40 years ago, the situation was similar. There was rampant inflation – food in the 70s *averaged* 8.1% inflation (see table below) – fuel was rationed, and there were lines at the gas pumps.

FOOD PRICE INFLATION

Decades	Average annual percent change by decade
1970s	8.1%
1980s	4.6
1990s	2.8
2000s	2.7
2007	4.2
2008 est.	5.0 – 6.0

Source: Food Marketing Institute Speaks report, 2008 and USDA-ERS, Food CPI, Prices, and Expenditures, http://www.ers.usda.gov/Briefing/CPIFoodAndExpenditures/Data/cpiforecasts.htm

One of the results of the 70s? Generics in the black and white box and the further development of private labels.

Picture: Wikipedia, http://en.wikipedia.org/wiki/Generic_brand

TABLE 2 – 1. MONTHLY RETAIL AND FOOD SERVICE SALES, PERCENT CHANGE FROM YEAR AGO

Kind of Retail Business	September 2008 sales – % change from year ago
Retail sales, total	-0.3%
Automobile dealers	-23.5
Building mat. and supplies dealers	-0.3
Supermarkets and other grocery (except convenience) stores	3.7
Beer, wine, and liquor stores	5.6
Pharmacies and drug stores	6.1
Gasoline stations	14.9
Clothing stores	-5.2
Hobby, toy, and game stores	5.0
Department stores(excl. discount department stores)	-14.3
Warehouse clubs and superstores	5.9
Used merchandise stores	9.7
Electronic shopping and mail-order houses	8.5
Food services and drinking places	2.7
Drinking places	7.4

Source: US Department of Commerce, Census Bureau. *Monthly Retail Trade and Food Service Survey*, September 2008. http://www.census.gov/mrts/www/mrts.html

What can marketers in this environment do? Discount retailers are doing extremely well in these economic times. They already have streamlined supply chains, no-frills stores and are often EDLP (every day low price). Higher-end retailers, however, may not want to sacrifice their image of quality and service to start deep price wars, as shoppers become easily hooked on price discounts. For example, AC Nielsen reported that just over 35% of all product sales from food/drug/mass from July 2007-July2008 were on promotion (The Nielsen Company, *Trade Promotions in the US*, September 2008).

Displays and in-store advertising, ads in flyers, and shelf positioning. These merchandising tactics can increase volume without sacrificing price. As a matter of fact, Nielsen also reported that features (ads in flyers, papers, in-store) generate a greater lift in sales (an added 87%) than do displays (an added 78%) or price reductions (and added 44%) (The Nielsen Company, *Trade Promotions in the US*, September 2008). In addition, retailers and suppliers should strategically promote items which appeal to the economizing shopper. Using up ad space to feature filet mignon may not make as much sense as using it for boneless breast of chicken.

Those with established private labels can and are supporting them prominently. Supporting their own private labels can help their margins and also help satisfy their customers who are looking for those ways to economize and interested in trading down from the more expensive national brand to the less expensive private label.

Coupons, traditionally used by brand manufacturers, are being clipped, sorted, and used by consumers. Coupons can provide a double benefit. They can provide sales incentive for the consumer looking for a deal or way to economize. They can also provide inexpensive, visible, print advertising for the manufacturer.

Differentiated promotions with targeted value may be especially appealing. Promotions tied to local organizations or charities—say, the local food banks—may attract consumers. Recently, a national jeweler offered a $25 off coupon to anyone who brought in a can of food for the local food pantry. A genuine offer that targets the holiday shopper.

The impact on consumers cannot be denied. Already, consumers have increased their savings rates, something unheard of in the US in decades. Some have suggested that some shopping behavior changes—increased use of private label, shopping deep discount stores—could become permanent in our society. And the importance of the value in the cost/benefit ratio will be under the microscope as people adjust.

The U.S. Food Marketing System Update

2008 may have seen the greatest food inflation in recent decades. While the repercussions of high fuel prices and high commodity prices are still being felt by some industries, food inflation, in general, is slowing down. The Economic Research Service at the USDA is forecasting 4 – 5% inflation for food in 2009, down from the estimate of 5 – 6% for 2008 (Figure 2 – 2).

TABLE 2 – 2. CHANGES IN FOOD PRICES, 2005 THROUGH 2009

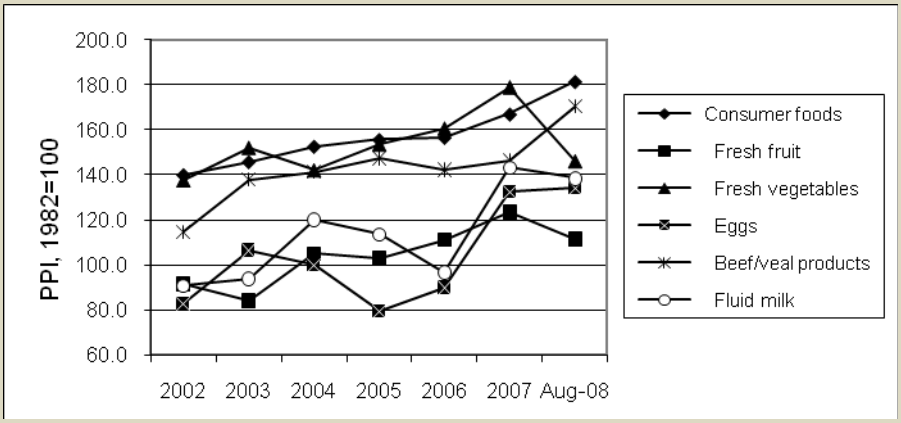
	2005	2006	2007	Forecast 2008	Forecast 2009
			% change		
All food	2.4	2.4	4.0	5.0 to 6.0	4.0 to 5.0
Food away from home	3.1	3.1	3.6	3.5 to 4.5	4.0 to 5.0
Food at home	1.9	1.7	4.2	5.5 to 6.5	4.0 to 5.0
Beef and veal	2.6	0.8	4.4	3.0 to 4.0	6.0 to 7.0
Pork	2.0	-0.2	2.0	1.5 to 2.5	5.0 to 6.0
Other meats	2.4	1.8	2.3	1.0 to 2.0	2.5 to 3.5
Poultry	2.0	-1.8	5.2	4.0 to 5.0	5.0 to 6.0
Fish and seafood	3.0	4.7	4.6	5.5 to 6.5	4.0 to 5.0
Eggs	-13.7	4.9	29.2	13.5 to 14.5	1.0 to 2.0
Dairy products	1.2	-0.6	7.4	8.0 to 9.0	4.0 to 5.0
Fats and oils	-0.1	0.2	2.9	13.0 to 14.0	3.0 to 4.0
Fresh fruits	3.7	6.0	4.5	6.0 to 7.0	4.0 to 5.0
Fresh vegetables	4.0	4.6	3.2	6.0 to 7.0	3.5 to 4.5
Processed fruits and vegetables	3.3	2.9	3.6	8.5 to 9.5	3.0 to 4.0
Sugar and sweets	1.2	3.8	3.1	4.5 to 5.5	3.0 to 4.0
Cereals and bakery products	1.5	1.8	4.4	9.0 to 10.0	3.5 to 4.5
Nonalcoholic beverages	2.9	2.0	4.1	3.5 to 4.5	3.0 to 4.0

Source: USDA-ERS, Food CPI, Prices, and Expenditures,
http://www.ers.usda.gov/Briefing/CPIFoodAndExpenditures/Data/cpiforecasts.htm

The Producer Price Index

The Producer Price Index (PPI), unlike the CPI, is based on prices received by producers from first point of sale. This index is based off the year 1982. For example, a PPI of 100.0 reflects a farm price equal to that of the base year, 1982. For many years the PPIs, including that for all consumer foods, have all hovered between roughly 80 – 160%, a testimony perhaps to the great output and efficiencies of the agricultural system but also to the downward price pressures put on the system. Starting in 2006 and continuing sharply in 2008, increases in fuel prices and in corn and wheat prices drove up the costs and prices of many commodities.

PRODUCER PRICE INDICES, FARM PRODUCTS
Base Year = 1982



Source: USDA-ERS, Agricultural Outlook http://www.ers.usda.gov/publications/Agoutlook/AOTables/ last updated October 2008.

For several years, consumers have been decreasing their beef consumption and increasing their consumption of chicken (Table 2 – 3). As a matter of fact, as consumers economize, they continue this "trade down". Chicken consumption continues to increase, beef consumption continues to slide. Pork, the other white meat, appears to be holding its own.

Consumers continue their love affair with cheeses and yogurts. Cheese consumption has increased from roughly 27 pounds per capita in 1996 to 32 pounds per capita in 2006. Yogurt consumption has climbed from almost 6 to 11 pounds per capita. Fluid milk consumption, however, continues to drop, even skim milk. Skim milk consumption fell from almost 33 to 28 pounds per capita.

Fresh fruit consumption has increased marginally (although processed consumption continues to drop more quickly than the increase in fresh consumption) from 126 to 129 pounds per capita in the same time period. Fresh vegetables have increased quite nicely from 186 to 196 pounds per capita, although it has not increased since 2001.

Consumption of fresh commodities is more difficult to track over time as consumption in individual years is greatly affected by commodity prices.

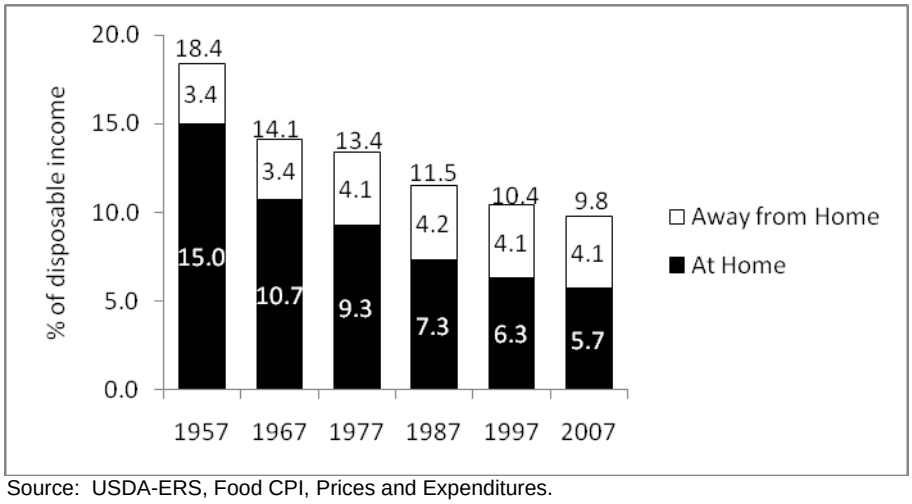
TABLE 2 – 3. PER CAPITA CONSUMPTION OF SELECTED FOOD COMMODITIES

	1996	2001	2006
		Lbs.	
Beef	64.0	63.1	62.7
Pork	45.2	46.9	46.0
Chicken	48.8	54.0	61.4
Eggs	30.1	32.5	32.4
Dairy products			
Cheese (excluding cottage)	27.3	30.0	32.4
Fluid skim milk	32.9	28.8	27.8
Yogurt (excluding frozen)	5.9	7.0	11.0
Salad and cooking oils	25.7	35.5	44.4
Fresh fruits	126.3	125.8	129.1
Fresh vegetables	186.3	196.2	196.0
Coffee (green bean equiv.)	8.7	9.5	9.5
Cocoa (chocolate liquor equiv.)	4.2	4.5	5.2

Source: USDA-ERS, Agricultural Outlook: Statistical Indicators, Food Supply and Use, Table 39. http://www.ers.usda.gov/Publications/AgOutlook/AOTables/

Despite this year's price increases, food expenditures as a percent of disposable income remain steady. Fifty years ago, families and individuals spent 18% of their disposable income on food, while in 2007, food cost only 9.8% of our disposable income (Figure 2 – 1).

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



Source: USDA-ERS, Food CPI, Prices and Expenditures.
http://www.ers.usda.gov/Briefing/CPIFoodAndExpenditures/Data/table7.htm

Food and beverage sales experienced very good growth in 2007, increasing 5.4% from 2006 (Table 2 – 4). Food away from home sales increases (5.0%) backed off of the strong growth seen in the last 5 years. For the first time in the last 6-7 years, food at home sales growth out-paced food away from home.

TABLE 2 – 4. FOOD SALES[1]

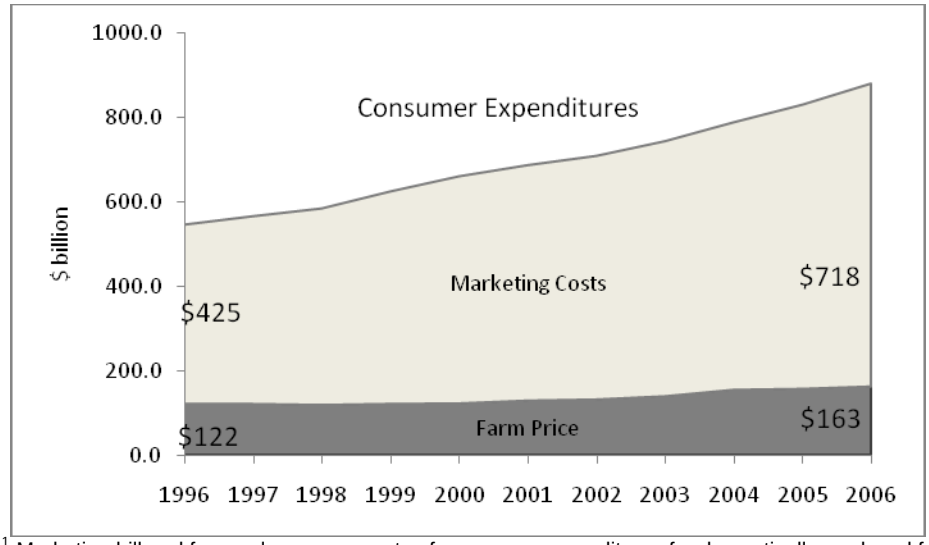
Sector	Sales 2006	Sales 2007	Increase	Growth
	--$ billion--		--$ billion--	--% change--
Total food and beverage sales	1,186,402	1,250,224	63,822	5.4%
Total food sales (excluding alcohol)	1,032,325	1,087,685	55,360	5.4%
Food at home sales	545,839	577,002	31,163	5.7%
Food away from home sales	486,486	510,683	24,197	5.0%
Alcoholic beverage sales	154,077	162,539	8,462	5.5%

[1] Sales only. Does not include home production, donation, or school lunch program expenditures
Source: USDA-ERS, http://www.ers.usda.gov/briefing/CPIFoodAndExpenditures/Data/table1.htm.

The USDA calculates farm price or value and marketing costs for food produced and consumed in the United States. In 2006, the latest year with data, consumer expenditures for food produced in the U.S. totaled $881 billion (Figure 2 – 2). Of that, the farm value portion was $163 or 19% of expenditures.

Of the $881 estimated expenditures for food produced and consumed in the U.S., $718 or 81% are estimated to be for marketing costs.

FIGURE 2 – 2. U.S. FARM VALUE AND MARKETING BILL, 1996 - 2006[1]



[1] Marketing bill and farm value components of consumer expenditures for domestically produced farm foods
Source: USDA-ERS Food Marketing and Price Spreads,
http://www.ers.usda.gov/Data/FarmToConsumer/marketingbill.htm (updated November 2008).

The term "marketing" costs is a bit misleading to some. Marketing costs include much more than advertising and promotion costs, which are only a small fraction of the marketing costs. Marketing costs include packing, shipping, and processing post farm gate, such as all food processing and manufacturing, as

well as distribution from production areas to the larger markets. The increasing portion of marketing costs is a reflection of the greater transformation of farm products to consumer ready-to-eat products. In addition, marketing costs associated with food away from home expenditures are greater than retail costs as they include chef preparation and restaurant overhead costs. And as consumers eat out more, these costs constitute a greater portion of the marketing bill.

Estimates of the components of the marketing bill from 1970 – 2006 are shown in Table 2 – 5. Since 1970, an increasing proportion of the "marketing bill" has been spent on labor. Packaging material costs have fluctuated somewhat. It is interesting to note the portion spent on shipping and energy since 1970. Each, in general, is not a large share of the marketing bill, and even combined, they represent less than 10% of marketing costs. Since 1980, in the period of the last energy "crisis", energy costs as a portion of the total bill have dropped. Only recently has this increased. Recent surges in energy prices in 2007, however, are currently being felt in transportation, distribution, and manufacturing. Data for 2007 are not available at this time.

FIGURE 2 – 4. MARKETING BILL COMPONENTS FOR FOOD PRODUCED IN THE U.S., 1970 – 2006

Year	Labor[1]	Packaging materials	Intercity rail and truck transportation	Fuels and electricity	Corporate profits before taxes	Misc.[2]
			% of marketing bill			
1970	42.9	10.9	6.9	2.9	4.8	31.6
1980	44.6	11.5	7.1	4.9	5.4	26.4
1990	44.8	10.6	5.8	4.4	3.8	30.5
2000	47.0	9.9	4.9	4.3	5.8	28.0
2001	47.3	9.9	4.9	4.3	5.7	27.8
2002	47.3	9.8	4.9	4.3	5.7	27.9
2003	47.3	9.9	4.9	4.3	5.7	27.8
2004	47.9	10.0	5.0	4.4	5.6	27.1
2005	47.5	9.9	4.9	4.7	5.6	27.4
2006	47.5	9.8	4.9	4.7	5.5	27.5

"Other" includes depreciation, rent, advertising and promotion, interest, taxes, licenses, insurance, professional services, local for-hire transportation, food service in schools, colleges, hospitals, and other institutions, and miscellaneous items

The marketing bill is the difference between the farm value and consumer expenditures and covers processing, wholesaling, transportation, retailing costs, and profits.

Source: USDA-ERS, Food Marketing and Price Spreads,
http://www.ers.usda.gov/Briefing/FoodPriceSpreads/bill/table2.htm (updated November 2008)

Chapter 3. Cooperatives

Brian M. Henehan, Senior Extension Associate, & Todd M. Schmit, Assistant Professor

U.S. Situation

Higher commodity prices helped U.S. farmer cooperatives set new sales records, over $146 billion and record net income of $3.8 billion in 2007. Total business volume was up approximately 16 percent from $126 billion in 2006.

Table 3-1. U.S. FARMER COOPERATIVES, COMPARISON OF 2007 AND 2006

Item	2007	2006	Change
	($ billion)	*($ billion)*	*percent*
Sales			
Marketing	93.1	76.5	21.76
Farm Supplies	49.3	45.9	7.52
Service	4.1	4.1	0.38
Total	**146.6**	**126.5**	**15.90**
Balance sheet			
Assets	57.1	47.9	19.31
Liabilities	36.2	28.0	29.42
Equity	20.9	19.9	5.13
Liabilities and net worth	57.1	47.9	19.31
Income Statement			
Sales (Gross)	146.6	126.5	15.90
Patronage income	0.6	0.5	29.79
Net income before taxes	3.8	3.2	21.10
Employees	*(Thousand)*	*(Thousand)*	
Full-time	125.2	123.4	1.44
Part-time, seasonal	56.2	57.3	-1.94
Total	**181.4**	**180.7**	**0.37**
Membership	(Million)	(Million)	
	2.5	2.6	-4.27
Cooperatives	(Number)	(Number)	
	2,594	2,675	-3.03

Source: *Rural Cooperatives*, Sept./Oct. 2008. USDA Rural Development, Washington, D.C.

Higher prices of commodities significantly increased sales of marketing and supply cooperatives last year with cooperative marketing increasing 22 percent to $93.1 billion. Total sales by farm supply cooperatives amounted to just over $49 billion or a 7.5 percent increase from 2006. Related services of marketing and supply cooperatives remained level at $4.1 billion in 2007.

Across all farmer cooperatives, total assets increased by 19.3 percent, liabilities increased by 29.4 percent and equity grew by 5.1 percent from 2006 to 2007. Total net income before taxes increased significantly by 21 percent to $3.8 billion. Patronage income increased by 30 percent, from $500 million in

2006 to $600 million in 2007. Farmer cooperatives remain one of the largest employers in many rural communities. The total number of full-time and part-time employees increased slightly in 2007 to 181,400.

New York State Situation

Data for agricultural cooperatives headquartered in New York State were obtained from a Cooperative Service survey cited below. The most current state level statistics available are for the years of 2005 and 2006. 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, 2005 and 2006[1]

Major Business Activity	Number Headquartered in State		Net Volume	
	2005	2006	2005	2006
			($ million)	
Marketing:				
Dairy	57	47	1,676.3	1,707.6
Fruit & Vegetable	9	9	37.0	38.7
Other Products[2]	5	4	142.7	100.3
TOTAL MARKETING	71	60	1,856.0	1,846.6
Supply:				
Crop Protectants			1.2	1.0
Feed			39.3	43.6
Fertilizer			11.9	12.5
Petroleum			5.0	5.7
Seed			2.3	2.3
Other Supplies			28.3	29.0
TOTAL SUPPLY	7	7	88.0	94.1
Related Service[3]	4	5	88.2	22.7
TOTAL	82	72	$2,032.2	$1,963.4

Source: *Farmer Cooperative Statistics, 2005*, Service Report 65, USDA, RBS, Washington, DC April, 2007 and *Farmer Cooperative Statistics, 2006*. Rural Development Report 67, USDA, Washington, DC November, 2007.
[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 headquartered in New York State in 2006 showed a net decrease of 10 cooperatives (12 percent) from 2005, primarily due to dairy cooperatives and a decrease in the number of other marketing cooperatives. However, total net business volume declined a more modest 3.4 percent from $2,032 million in 2005 to $1,963 million in 2006, a decrease of 3 percent. It should be noted that individual state data for agricultural cooperatives are becoming more difficult to obtain as more cooperatives operate across a broader multi-state area. For instance, cooperatives headquartered in New York State generate significant business volume outside of New York State and a number of cooperatives headquartered outside of New York generate significant volume in New York and include a large number of New York producers as members.

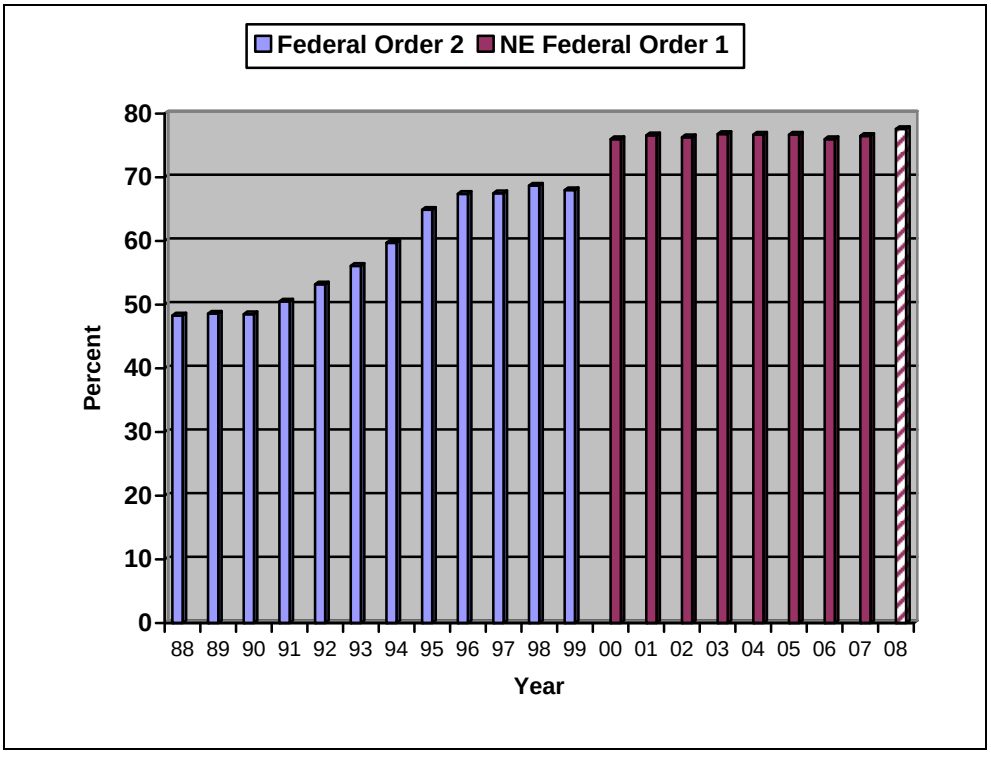
Total net volume for cooperatives headquartered in New York State decreased by $69 million, with marketing cooperatives reporting a decline of almost $10 million in net volume from 2005. While net business volumes for both dairy and fruit and vegetable marketing cooperatives. Dairy cooperatives showed an increase of $31 million from the previous year. Revenues for fruit and vegetable cooperatives increased by almost $2 million. Total net volume for other products marketed through cooperatives (e.g. poultry, dry beans, grain livestock, maple syrup and others) decreased significantly by almost $80 million.

Supply cooperative volume increased by over $6 million as cooperatives recover from the loss of the Agway cooperative system. Total business volume for services related to marketing or purchasing decreased by almost 75 percent from about $88 million in 2005 to $23 million in 2006.

Cooperative Share of Northeast Federal Milk Marketing Order 1

The proportion of milk receipts handled by dairy cooperatives fluctuated over the last 20 years, leveling off at about 67 percent from 1996 to 1999 under the old Federal Order 2 (Figure 3-1). However, the cooperative share of milk receipts increased significantly to 76 percent in 2000 under the new consolidated Order combining former Federal Order 1 (New England), Federal Order 2 (New York-New Jersey), and Federal Order 4 (Middle Atlantic) into the new Northeast Milk Marketing Order 1. The increase following the consolidation of Orders was primarily the result of pre-existing higher percentages of milk being shipped to cooperatives in the former Orders 1 and 4. Those higher percentages increased the total average of milk received by cooperatives in the new Order 1. The cooperative share of milk receipts for the first nine months of 2008 increased slightly to 78 percent from an average of 77 percent during the previous year.

FIGURE 3-1. COOPERATIVE SHARE OF PRODUCER MILK RECEIPTS, FEDERAL ORDER 2 (1988-1999) and NORTHEAST FEDERAL ORDER 1 (2000-2008) [a]



Source: Market Administrator's Office, Northeast Federal Milk Marketing Order 1.
[a] Year 2008 is based on data for the first 8 months of the year. Data from 2000 forward represent the consolidated Federal Milk Marketing Order 1,(the merger of the old Federal Orders 1, 2, and 4).

Cooperative Performance

The financial performance of agricultural cooperatives operating in New York State has on the whole been good. Due to the importance of dairy marketing and service cooperatives to New York producers, we will review their situation first.

As discussed above, the share of milk receipts accounted for by dairy marketing cooperatives under Federal Milk Marketing Order 1 has remained stable at about 76 percent from 2000 through 2005. For the first eight months of 2008, the cooperative share has increased slightly by 1 percent. There is a volume of milk produced by farmers who are not members of cooperatives that is being marketed in Federal Order 1 by a cooperative marketing alliance that combines independent supplies of milk with that from cooperative members. This volume of non-member milk marketed is not included in the data for the cooperative share of producer receipts.

Wet weather conditions in scattered areas of New York during the planting season put pressure on forage crop yields and milk production. Otherwise, weather during the growing and harvest seasons has been, in general, favorable. Isolated weather events have created some problems that might result in lowering the overall harvest of forage crops.

Milk prices continued to increase early in the year and then declined significantly. On average, milk prices for the year supported continued positive performance of cooperatives offering dairy herd improvement or breeding genetics to members. Export sales of genetics and increased international operations continued to add to the revenues of the major genetics cooperative.

Dairy marketing cooperatives involved in value-added operations experienced mixed results. As milk prices declined, cooperatives involved in aging cheese experienced challenges in managing inventory values. Sales of cheese, yogurt and other soft dairy products remain relatively strong.

Cooperatives with manufacturing operations continued to see higher energy and packaging costs early in the year. International markets for dry milk products remained strong in the beginning of the year but weakened as the value of the U.S. dollar strengthened and global demand softened. Mid-year changes in the export market brought declining international sales and an increasing surplus of dry milk products.

The bankruptcy settlement of Agway, the major supply cooperative in the Northeast continues as unsecured creditors have received periodic distributions from 2004 through 2008. Payments are being made to unsecured creditors until the Trust created by the bankruptcy court is exhausted. Total payments to be made to unsecured creditors, many of whom were members or retired farmers, are estimated at between 60 cents and 66 cents on the dollar. As of February 2008, a total of seven payments have been made totaling 60 cents on the dollar. Until all outstanding accounts are identified and all costs are deducted from the Trust, the value of the total distribution cannot be determined. For more information, see the liquidating trust web site at: http://www.agwaylt.com

The major juice grape cooperative in New York continues to rebound from weak sales, higher expenses, and lower returns to growers. Consumer dietary trends have hurt sales of fruit juices. The marketing arm continues to cut costs and implement new marketing strategies. Financial performance has been improving resulting in a larger advance payment made to growers this Fall than last year.

A fresh apple marketing cooperative continues to grow with new members joining from across a broader geography. This organization works on improving the coordination of marketing and quality control on behalf of members. The apple crop is in general good. Some isolated weather problems resulted in lower

yields in selected production areas. In general, production in New York State was strong compared to other areas such as Michigan or Washington. Warmer weather in the Fall may have a negative impact on the storability of the crop resulting in downward pressure on prices.

The major vegetable processing cooperative continues to adjust operations following a change in its relationship with a major food processing customer. When the processing and marketing assets of the cooperative were acquired by an investment group several years ago, a portion of member's equity was converted to shares in the holding company that was created. That holding company has since sold some of the processing assets and made a distribution to shareholders, including cooperative members. Individual members received a cash distribution based on the cooperatives investment in the holding company that the equity investment group is currently managing.

A good working relation has been developed with the new frozen vegetable and fruit processing firm that acquired several processing plants in New York and other states. The new owner is continuing to operate plants in New York State and maintain supplier relations with the growers cooperative that previously delivered to those plants. Acreage of processing vegetables delivered to the cooperative has increased as well as the price received by growers. In fact the total commercial market value (CMV) of processed fruits and vegetables in New York will reach records levels this year.

The Farm Credit associations experienced good financial performance during the year. Relatively strong prices for a number of major commodities combined with favorable weather in most areas contributed to stronger farm financial performance and creditworthiness. The U.S. financial credit crisis and failure of investment banks involved in sub-prime mortgage financing did have a negative impact on the Federal Agricultural Mortgage Corp. known as " Farmer MAC". Farmer MAC which is a government sponsored entity, manages short term credit and investments for the Farm Credit System. Farmer MAC was exposed to high risk investments that affected the capital position and required an infusion of capital from various Farm Credit partners. For more information see www.farmermac.com.

The cooperative bank that lends to rural cooperatives in the U.S. and New York, reported record results during the most recent year that data are available. Net income, cash patronage distributions, and member equity all increased from the previous year. That said, recent fluctuations in commodity markets and the credit crisis have created more uncertainty.

Cooperative Outlook

Most cooperatives operating in New York State had positive results in 2008. Weakening milk prices in 2009 may create more uncertainty for the performance of dairy marketing and service cooperatives. Milk prices and dairy farm income are projected to decline but stabilize from the relatively high levels of 2008. Dairy producers have seen their cost of production increase resulting in tighter profit margins. Dairy cooperatives continue to experience declining member numbers as farmers exit farming. Increased financial stress on dairy farms may tend to increase the rate of dairy farm sales and declining membership numbers.

Dairy cooperatives with value-added operations have experienced increasing costs for processing milk, packaging, transportation, and ingredients as energy prices continue to increase. Recent declining costs of energy may bring more stable prices. It remains to be seen how energy prices unfold in 2009, but falling demand and an economic recession may cause energy costs to decline further.

Domestic consumer concerns over rising food prices and an economic recession may shift purchasing to lower priced food products outlets as well as result in less food consumed away from home. On

the export side, a strengthening dollar and global recession may limit exports in 2009. The dairy industry and dairy marketing cooperatives have relied on increasing exports to support farm prices and cooperative sales.

Although the last half of 2008 has brought a number of challenges for cooperatives operating in New York State - declining milk prices, downward pressure on farm income, shifting consumer purchasing patterns and a deepening recession, most cooperatives operating in New York State remain well positioned for solid performance in 2009.

Chapter 4. Finance

Calum G. Turvey, Professor

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

Item	2002	2003	2004	2005	2006	2007	2008[c]
				billion dollars			
Assets							
Real Estate	1,046	1,112	1,341	1,549	1,756	1,912	2,052
Livestock	76	79	79	81	81	81	81
Machinery	94	96	102	107	108	109	110
Crops[a]	23	24	24	24	23	23	28
Purchased Inputs	5	6	6	6	6	7	7
Financial Assets	60	62	66	67	74	79	82
Total	1,304	1,379	1,618	1,835	2,047	2,210	2,359
Liabilities & Equity							
Real Estate Debt	103	94	97	102	101	108	111
Nonreal Estate Debt[b]	90	81	86	92	95	104	101
Total	193	175	183	193	196	212	212
Owner Equity	1,111	1,204	1,435	1,642	1,851	1,998	2,147
Total	1,304	1,379	1,618	1,835	2,047	2,210	2,359
Percent Equity	85	87	89	89	90	90	91

[a] Excludes crops under CCC loan.
[b] Excludes CCC loans.
[c] Forecast

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

Item	2002	2003	2004	2005	2006	2007	2008[c]
				percent of total			
Assets							
Real Estate	80	81	83	84	86	87	87
Livestock	6	6	5	4	4	4	3
Machinery	7	7	6	6	5	5	5
All Other[a]	7	7	6	5	5	5	5
Total	100	100	100	100	100	100	100
Liabilities							
Real Estate Debt	53	54	53	53	52	51	52
Nonreal Estate Debt[b]	47	46	47	47	48	49	48
Total	100	100	100	100	100	100	100

[a] Excludes crops under CCC loan.
[b] Excludes CCC loans.
[c] Forecast
Source: Agricultural Income and Finance Outlook, ERS, USDA; Agricultural Outlook: Statistical Indicators, ERS, USDA.

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

Item	2002	2003	2004	2005	2006	2007	2008[b]
				billion dollars			
Real Estate							
Farm Credit System	29.7	37.8	37.7	40.1	40.9	45.4	46.8
Farm Service Agency	3.4	3.2	2.2	2.1	2.1	2.1	2.1
Commercial Banks	29.8	33.1	35.2	36.9	37.8	40.6	41.9
Insurance Companies	11	11.4	10.9	11.0	11.3	11.2	11.5
Individuals & Others	17.2	9.9	10.8	11.4	9.4	9.4	9.4
Total	91.1	95.4	96.9	101.5	101.5	108.6	111.7
Nonreal Estate[a]	16.7	20.5	21.9	24.2	27.5	32.3	31.3
Farm Credit System	4.2	4	3.2	3.0	2.7	2.9	2.8
Farm Service Agency	44.8	44.3	45.8	48.5	51.0	55.5	53.8
Commercial Banks	20.8	13	15.1	16.0	13.7	13.1	12.7
Individuals & Others	86.5	81.8	86.1	91.7	94.9	103.7	100.6
Total	29.7	37.8	37.7	40.1	40.9	45.4	46.8

[a] Excludes crops under CCC loan.
[b] Forecast:

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

Item	2002	2003	2004	2005	2006	2007	2008[b]
				percent of total			
Farm Credit System	26.1	32.9	32.6	33.3	34.8	36.5	36.8
Farm Service Agency	4.3	4.1	3.0	2.6	2.5	2.3	2.3
Commercial Banks	42.0	43.7	44.3	44.2	45.2	45.2	45.1
Insurance Companies	6.2	6.4	6.0	5.7	5.7	5.3	5.4
Individuals & merchants	21.4	12.9	14.2	14.1	11.8	10.6	10.5
Total[a]	100	100	100	100	100	100	100

[a] Excludes crops under CCC loan.
[b] Forecast:
Source: Economic Research Service, USDA, Data, Farm Balance Sheet./ Author Calculations

The value of U.S. farm assets increased 6.7% in 2008 down from 12.3% in 2007, largely mobilized by a slow down in the rise from farm real estate values of which was 7.4% when compared to 13.4% in 2007. Still, real growth is significant since the changes are well in excess of the rate of inflation (Tables 4-1 and 4-2). Sector debt levels, however, remained constant at $212 billion indicating a slow down in the overall demand for farm credit. Farm credit increased by only 3.4% in 2007 which was nearly half the 6.7% increase that was observed between 2005 and 2006. The rate of growth in farm equity increased by 7.46% in 2007 which is lower than the 13% and 12.3% recorded in 2007 and 2006 respectively. Real estate debt increased by only 2.77% in comparison to a 9.8% increase in 2007. Following a 4.1% increase in non-real estate debt in 2007, nonreal estate debt actually decreased by 2.88%. Consequently with asset values increasing more than debt, farmers across the United Stated can now claim a 91% equity position in their farms (including unrealized capital gains). There is much room for leveraged growth and it is unlikely that any disturbances to the agricultural economy could not be withstood. New York typically has about 3-5% more debt than the U.S. average. The USDA has stopped providing state-level summaries.

Tables 4-3 and 4-4 show that the Farm Credit System continues to be the major provider of real-estate credit to agriculture, with a total of $46.8 billion in loans representing an increase of 3.1% in 2007. Commercial lenders are close with $41.9 billion in loans with an increase of 3.5% over 2006. By far commercial lenders provide the majority of non-real estate loans with a total of $53.8 billion in 2008. In 2007 the Farm Credit System provided 36.8% of credit to farmers with commercial lenders providing 45.1%, largely due to the non-real estate business. The Farm Service Agency, as well as other lenders, is actually decreasing its lending activities in proportion to commercial lenders and Farm Credit.

Table 4-5. Nonaccrual and Nonperforming Loans
Farm Credit System, December 31

Year	Nonaccrual	Nonperforming
	percent of loan volume	
1988	6.5	12.3
1989	5.1	11.0
1990	4.5	9.7
1991	3.7	8.0
1992	2.7	6.0
1993	2.3	4.2
1994	1.9	2.9
1995	1.4	2.1
1996	1.1	1.5
1997	0.9	1.3
1998	1.8	2.1
1999	1.4	1.6
2000	0.9	1.2
2001	0.9	1.2
2002	1.0	1.3
2003	1.1	1.3
2004	0.7	0.8
2005	0.6	0.6
2006	0.5	0.5
2007	0.358	0.434
2008	0.47	0.55

[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.

Credit quality of commercial lenders (Farm Credit and commercial banks) continues to be very high. There was a slight increase in non-accrual loans from 0.358% and 0.434% in 2007 to 0.47% and 0.55% in 2008, attributed to problems in the credit markets and residential real estate (Table 4-5). Still, the Farm Credit System is maintaining performance in non-accrual and non-performing loans in 2008, with only 1 in 200 loans being non-performing or non-accrual. Non-accrual and non-performing loans are at about as low levels as they could be expected to attain without severely restricting credit to a large group of people, most of whom are good credit risks. Throughout the farm credit system loan performance to borrowers is at a near all time high between 2006 and 2008. These conditions are largely mimicked in commercial lending (Table 4-6) which despite severe problems in non-farm real estate markets (to be discussed later) has a very low rate of delinquency (1.4% - 1.6%).

Table 4-6. Non-accrual, Non-performing, and Total Delinquent
United States Commercial Banks, December 31

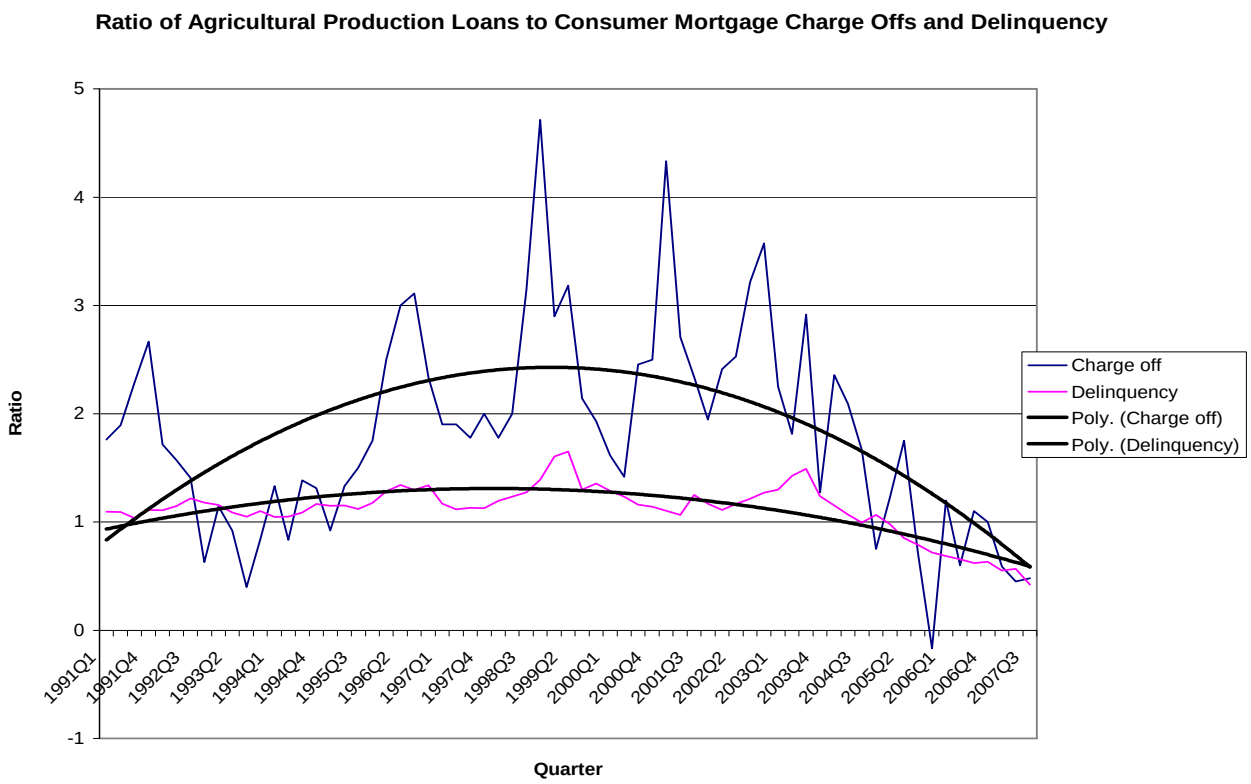
	Farm Non Real Estate Loans			Farm Real Estate Loans		
Year	Non-accrual	Non-performing	Delinquent	Non-accrual	Non-performing	Delinquent
	percent of loan volume					
2000	1.0	1.2	2.1	0.8	1.4	2.3
2001	1.3	1.5	2.7	1.2	1.5	2.6
2002	1.3	1.6	2.6	1.2	1.5	2.5
2003	1.2	1.5	2.3	1.1	1.3	2.1
2004	0.9	1.0	1.6	0.8	1.0	1.6
2005	0.5	0.7	1.3	0.6	0.7	1.3
2006	0.5	0.6	1.3	0.5	0.7	1.3
2007	0.5	0.8	1.9	0.5	0.7	1.6
2008	0.5	0.7	1.4	0.7	0.9	1.6

[a] Includes non-accrual and past due 90 days but accruing.
[b] Includes non-performing and past due 30 to 89 days but accruing.

Source: Agricultural Financial Databook, Board of Governors of the Federal Reserve System. 2008 Q2

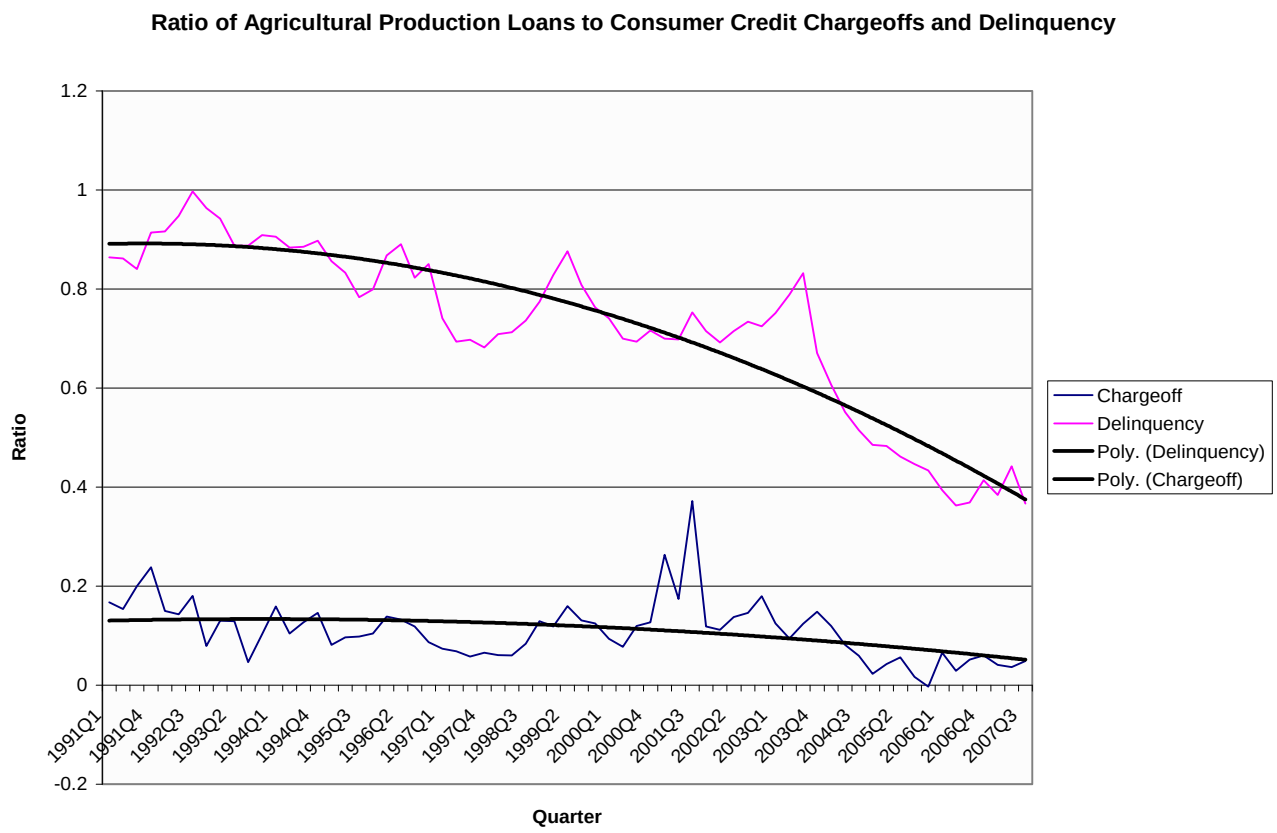
Outlook on Credit Supply and Credit Risk

FIGURE 4-1. AGRICULTURAL PRODUCTION LOAN CHARGE OFFS AND DELINQUENCY COMPARED TO CONSUMER MORTGAGE LOANS



The continued improvement in the credit quality of agricultural credit suggests a deeper look into how the agricultural sector compares with the non farm sector. In other words, how does the agricultural economy fare in terms of credit worthiness relative to consumers? History is replete with depressions that cause structural shifts in agriculture with randomness in commodity prices and weather patterns largely to blame. In the late 1990's and into this decade the average farm household income has met parity with non farm households. Equity is approaching 90% indicating that agriculture has significant credit reserves available to it. But coming out of the collapse ending in the late 1980's farmers attitudes towards credit changed and its use has, at least on average, been prudent. Using data available from the Federal Reserve Bank on consumer loans and agricultural production loans by commercial banks on charge offs and delinquencies we can get a sense, albeit incomplete, of the trend.

FIGURE 4-2. AGRICULTURAL PRODUCTION LOAN CHARGE OFFS AND DELINQUENCY COMPARED TO ALL CONSUMER LOANS



Up to the fourth quarter of 2004 the delinquency rate on agricultural production loans was always higher than consumer mortgage loans (Figure 4-1). This was as high as 149% in 2003, and between 1990 and 2003 the average was 121%. There is nothing critical about this since the timing and sequencing of cash flows in agriculture do not always match the terms of loan repayment. However in 2004 this trend reversed itself and delinquencies in agricultural loans fell dramatically so that in 2007 the delinquency rate is only half of that on consumer mortgages. More critically charge offs of agricultural production loans were twice that of consumer mortgages averaging 206% between 1990 and 2003. However this too reversed itself starting in 2003 where now in 2007 the charge off rates of agricultural loans is only 41% of charge offs on consumer loans.

In terms of total consumer loans including credit cards and non revolving loans for auto and improvements, the delinquency rate and charge off rates in agriculture have always been lower (Figure 4-2). Delinquency rates peaked in 1991 at about 91% of consumer loans but has fallen steadily since so that today the delinquency rate relative to all consumer loans is only 0.366. The charge off ratio is much lower. The peak charge off ratio was 0.238 in late 1990, as farmers were coming off the collapse in the 1980s. Since then, the decline and the prudential use of agricultural credit has resulted in a charge off ratio of only 0.05 in 2007. In other words a consumer loan is nearly 20 times more likely to be charged off by a commercial lender than an

agricultural production loan. Two qualifications to this are required. The first is that the farm production loans do not include FSA loans but data we have for 2005 indicate that FSA delinquencies and charge offs are no worse than consumers. In other words, the most severe distresses in agriculture are no worse that the average of consumers. The second qualification is that only production credit is considered. This may not be critical. First, charge offs on agricultural production loans will most surely in most cases take place before charge offs on farm mortgages so the farm mortgage charge off rate will be much lower than consumer mortgages as presented here. Second, consumer credit includes not only mortgages but also credit cards and other non-revolving credit sources. It may be the case that a farmer has a delinquency on a personal credit card, but most commercial farms now operate off lines of credit from which cards are paid as well as equipment purchases and repairs and inputs and so on. It is therefore possible that a farmer can have both a consumer loan and a production loan, so at best we can say that the ratios so presented are lower bounds. Even so, we are seeing in 2007-2008 not only a continued parity with the non-farm sector in terms of income but overall improvement in credit quality.

Outlook on Interest Rates

Short term interest rates bottomed out at the lowest level in 50 years in late 2003 and early 2004 and have been rising throughout 2005, 2006 and 2007. The average 2004 prime rate was 4.3% but this increased to 6.19% in 2005, 7.96% in 2006 but fell slightly to 7.74% through October 2007 and below 5% through October 2008 (Figure 4-3). Rates are still historically low and have not been at this level since 2001 and before that 1967. In mid 2005 and continuing through the first part of 2007 the Federal Reserve Board pushed interest rates up from these historic levels in an effort to reach a more neutral monetary policy position and inflation pressure. The current credit crisis in sub prime lending has given pause to these increases causing the Federal Reserve to lower rates. On a calendar year basis, short term rates averaged 1.4% in 2004, increased to 3.22% for 2005, and averaged around 4.75% for 2006, exceeded 7% in 2007, and currently hovers around 4.56% (Figure 4-4).

FIGURE 4-3. ANNUAL AVERAGE SHORT TERM INTEREST RATES

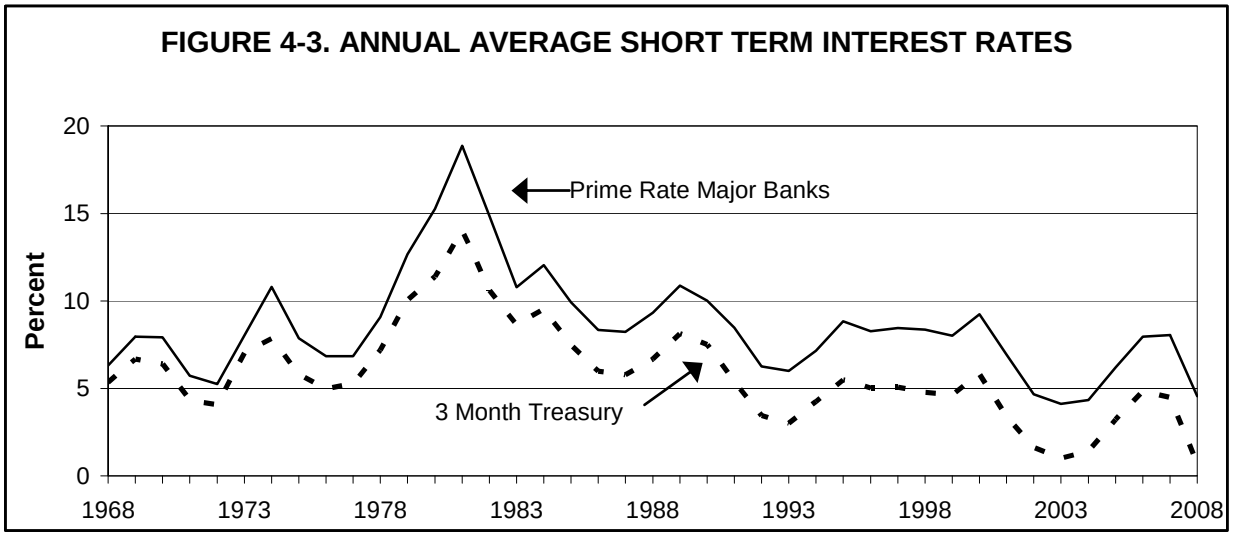
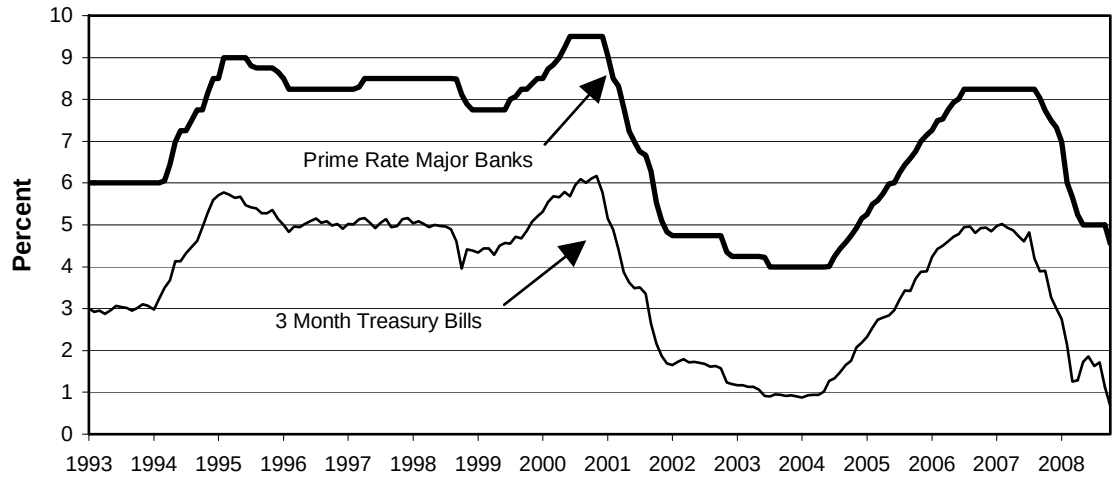


FIGURE 4-4. MONTHLY SHORT TERM INTEREST RATES

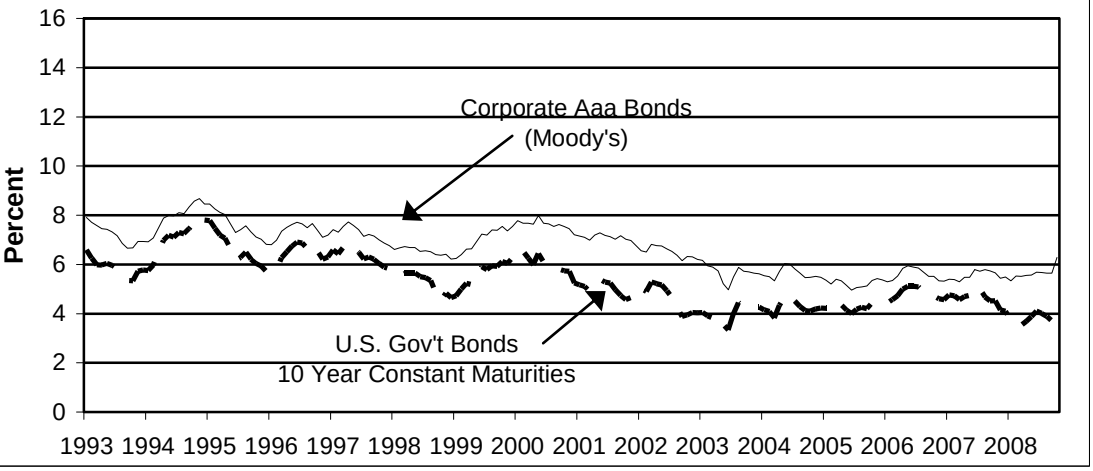


3 Month Treasury Bills		
	2007	2008
Jan.	4.98	2.75
Feb.	5.03	2.12
Mar.	4.94	1.26
Apr.	4.87	1.29
May	4.73	1.73
June	4.61	1.86
July	4.82	1.63
Aug.	4.20	1.72
Sept	3.89	1.13
Oct.	3.90	0.67
Nov.	3.27	
Dec.	3.00	

There has been a sharp decline in the 3-month treasury bills throughout 2007 and 2008 with the more dramatic declines taking place in the last half of 2008. Currently treasury yields are at 0.67%, below the rate of inflation. The low rate reflects illiquidity in the credit markets, reductions in the Federal Reserve Rate. It is expected that the rates will remain low until the current financial crisis is ended.

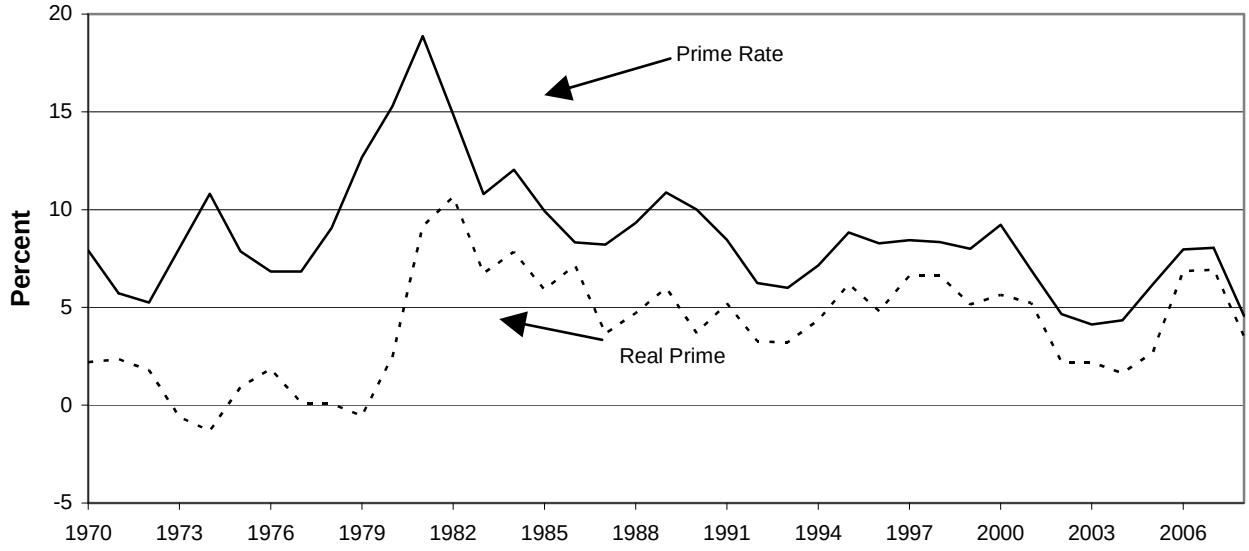
High quality corporate bonds continue to be low (Figure 4-5). As of October 2008 the Aaa rate was 6.28% in comparison to 10-year bond rates of 3.81%. The spread, at 2.47% is higher that the October 2007 spread of 1.13% and the 0.78% spread observed in 2006. This increase in the spread indicates an increase in the riskiness of corporate bonds relative to government bonds. The 10-year bonds have hovered between 4.53% and 3.51% between October 2007 and October 2008 (Figure 4-5).

FIGURE 4-5. MONTHLY LONG TERM INTEREST RATES



U.S. Govt. Bonds 10 Year Constant Maturity		
	2007	2008
Jan.	4.76	3.74
Feb.	4.72	3.74
Mar.	4.56	3.51
Apr.	4.69	3.68
May	4.75	3.88
June	5.10	4.10
July	5.00	4.01
Aug.	4.67	3.89
Sept	4.52	3.69
Oct.	4.53	3.81
Nov.	4.15	
Dec.	4.10	

FIGURE 4-6. CONTRACT AND REAL INTEREST RATES



Inflation continues to be of concern. The 2007 inflation rate was 3.2% and this rose slightly to 3.7% in 2008. The real (inflation adjusted) prime rate has fallen from 4.46% in 2006 and 4.54% in 2007 to 3.49% as of October 2008 (Figure 4-6 and 4-7).

As with 2007-2008 there are many uncertainties in the market making it difficult to predict what interest rates are going to do in 2009. Figure 4-7 shows that 90-day inflation adjusted rates are below 10-year a rate which is the normal expectation. The spread between the 10-year notes and 90-day notes are increasing, largely due to the reduction in 90-day rates in the past 6 months to less than 1%. In real terms, the 90-day rates are negative (-2.94%) meaning that the return on short term bonds does not even cover inflation, and 10-year rates are very close to zero when adjusted for inflation.

Compared to 2007 the yield curve showing October bond yields at different maturities has shifted down and has become steeper (Figure 4-8). This is quite a shift from the inverted curve observed in 2006. The spread between 3-month and 1-year t-bills is only 1.32% and between 1-year and 5-year treasury bills the spread is only 1.26%. The spread between 5 and 10-year rates is only 0.76%.

Normally one would expect this yield curve to signal some very low interest rates in the next two or three years but under current conditions it is unlikely that they will be reflected in lending rates soon. Commercial banks are currently operating on tight credit schedules and are being extremely cautious. On the other hand, it does not appear that commercial, real estate, or agricultural loan rates are going to increase significantly in 2009.

FIGURE 4-7. LONG AND SHORT TERM REAL INTEREST RATES

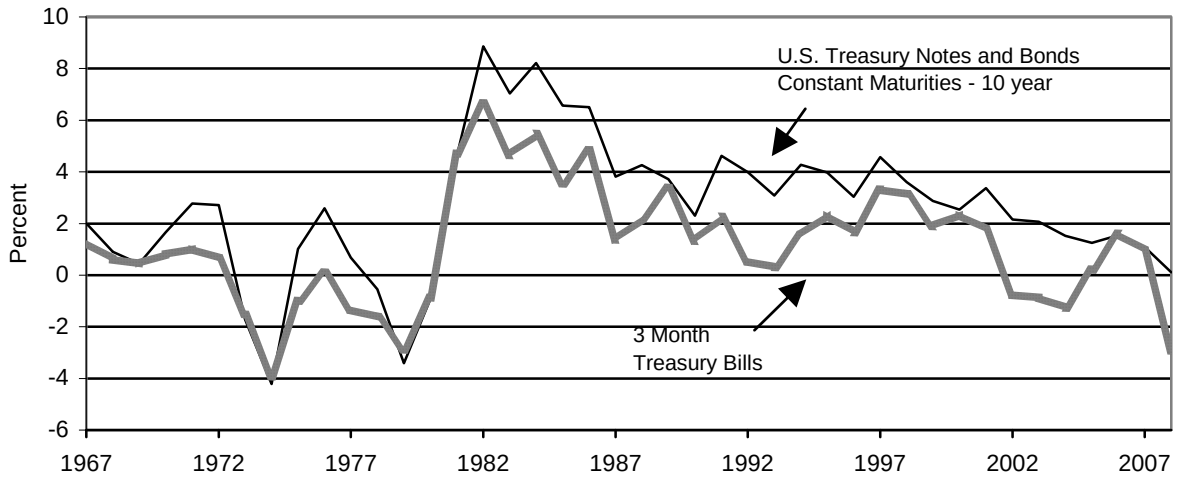
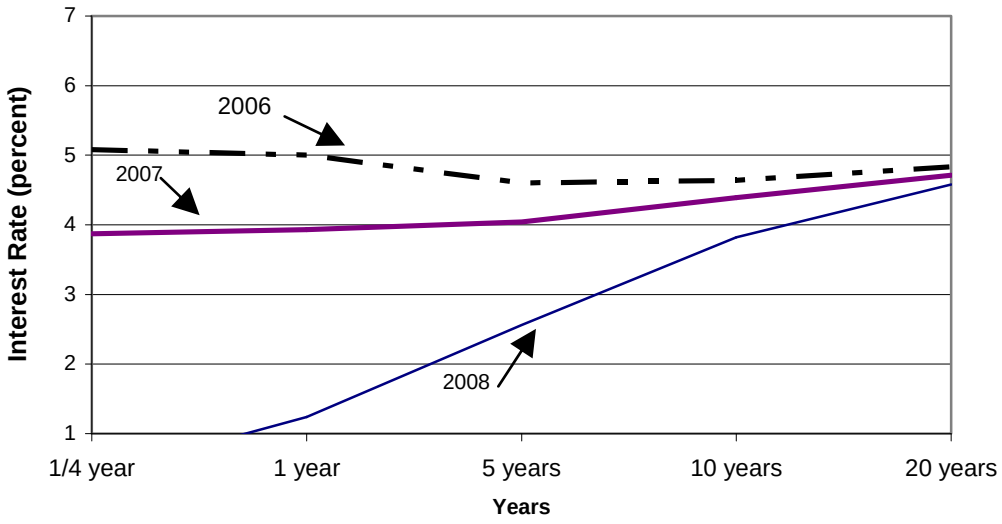


FIGURE 4-8. YIELD CURVE 1ST WEEK OF SEPTEMBER (U.S. GOVERNMENT SECURITIES)



Agricultural Economy is in Pretty Good Shape

Relative to the non-farm economy the evidence and data suggests that agriculture is faring quite well. There is some indication that some spillover effects of the current mortgage meltdown due to sub-prime is infiltrating some agricultural loans but by no means does this suggest that the agricultural economy will be affected. What is happening in the urban/residential housing market is beyond the control of any farmer, but its fallout will likely have an impact. The sub prime housing market has two components. The first is a low entry interest rate that would allow homeowners, many of whom are low to middle income, purchase homes that would not ordinarily be affordable. In some instances the mortgages were designed as interest only and with high loan to value ratios this required that house prices would need to continuously rise in the future. The security for these loans was not in ability to pay but in unproven capital gains. In time, of course, nothing is given away. To compensate for low entry interest rates the sub prime lenders had to eventually increase or adjust the interest rate and this is where the economy is at today, except with the additional complication of a downturn in housing prices. To counter hundreds of thousands of foreclosures and to provide an offset to stock market volatility, monetary policy has moved to decrease interest rates. A decrease in interest rates makes the present value worth of cash flows from agriculture increase and hence an increase in the bid price for farmland. However, even though the Federal Reserve reduced its rate by more than 1.5% in 2008, the gains to banks were not passed on to consumers through lower interest rates.

Figure 4.9 plots the charge-off rates for agricultural loans versus non-farm business loans since 1991. What a long way agriculture has come! As business loans approach charge-off rates nearing 1% in 2008 the agricultural rate is 5-times lower at 0.19%. Furthermore while delinquency rates on farm real estate loans have been hovering around 1.6% for the past few years (Table 4-6) the charge off and delinquency rates in commercial real estate are substantive. Delinquency rates have in general been lower in agriculture in recent

years, but the drama that is now unfolding in the non-farm real estate market is confounding. The stalling of real estate markets in late 2007 and through 2008, combined with adjustable sub-prime mortgages have caused the steep rise in delinquencies and charge-offs as shown in Figure 4-10. One can see the origination of the crisis in the 4th quarter of 2006, but it was not until after the first quarter in 2008 that politics took notice. By the first quarter of 2008 delinquency rates – a future look into home foreclosures— had increased to 3.73% increasing to 5.08% by October 2008. The fallout in charge offs was a rate of 0.84% by March 2008 and ending the 3rd quarter at 1.45%.

FIGURE 4-9. DELINQUENCY RATES, COMMERCIAL BANKS

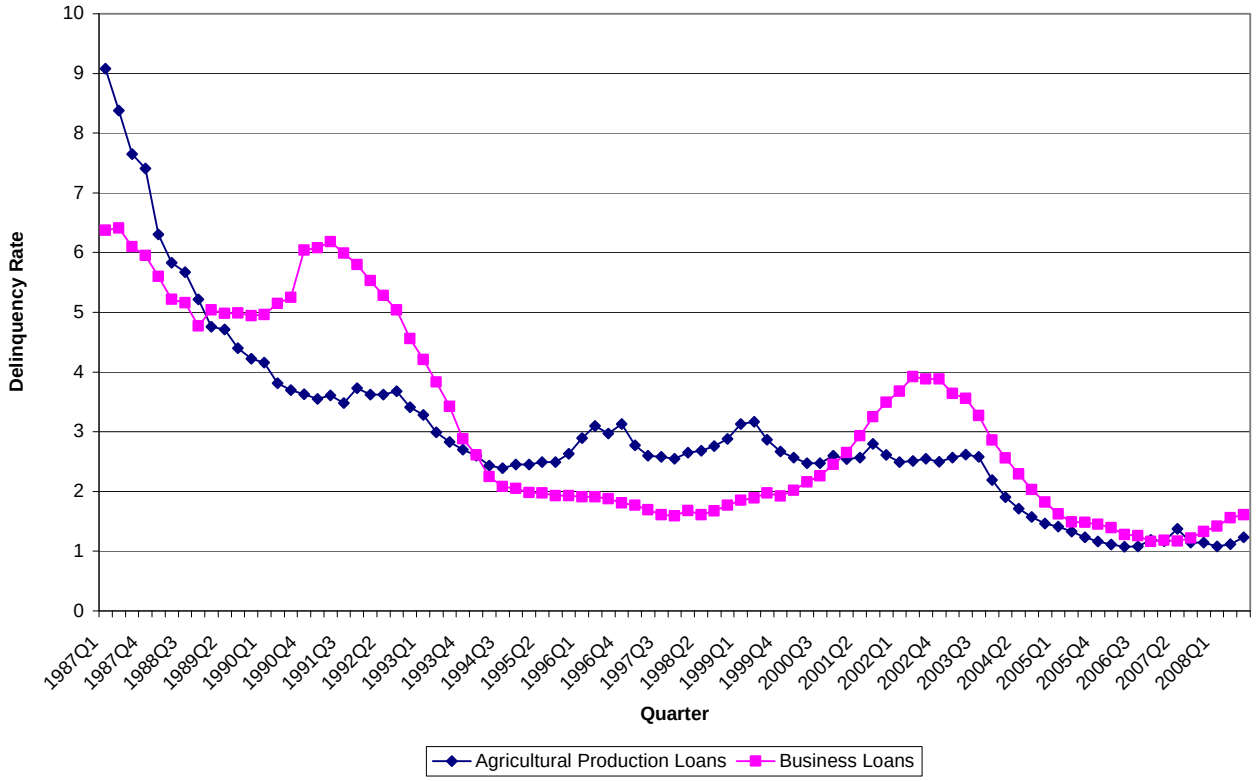
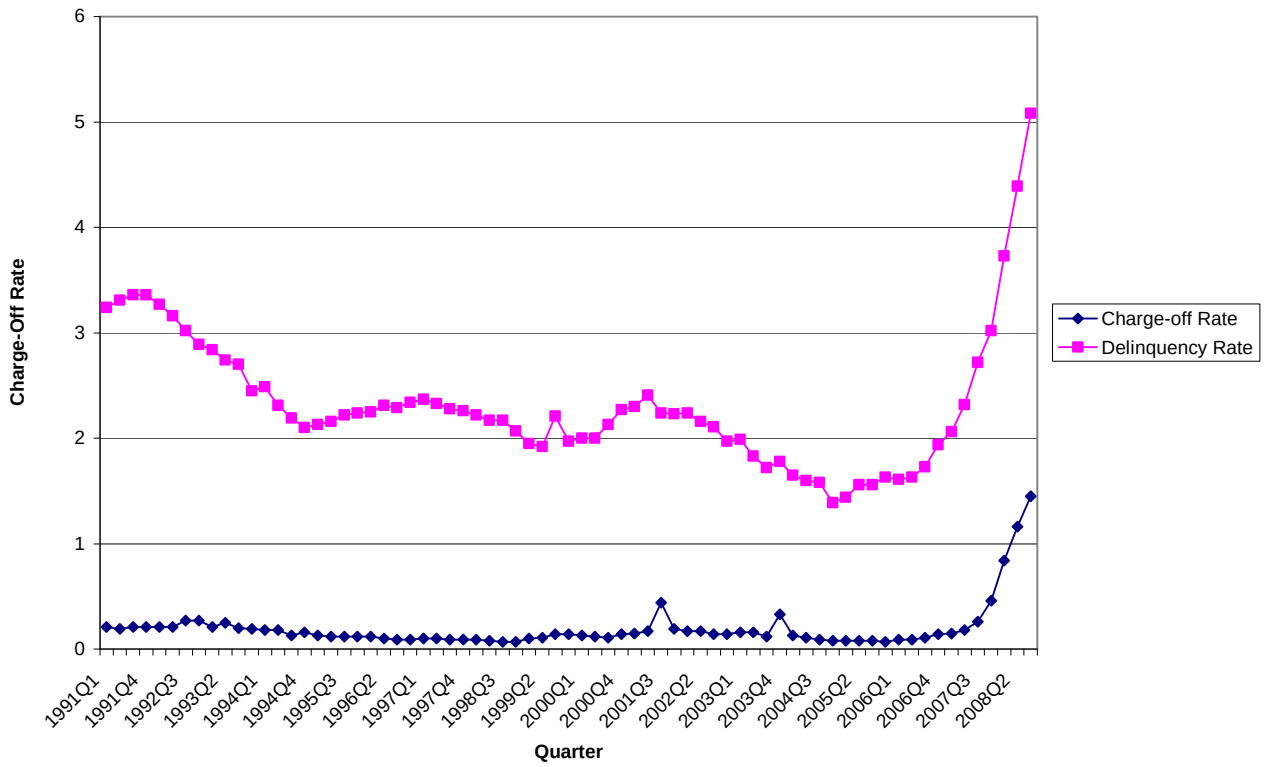
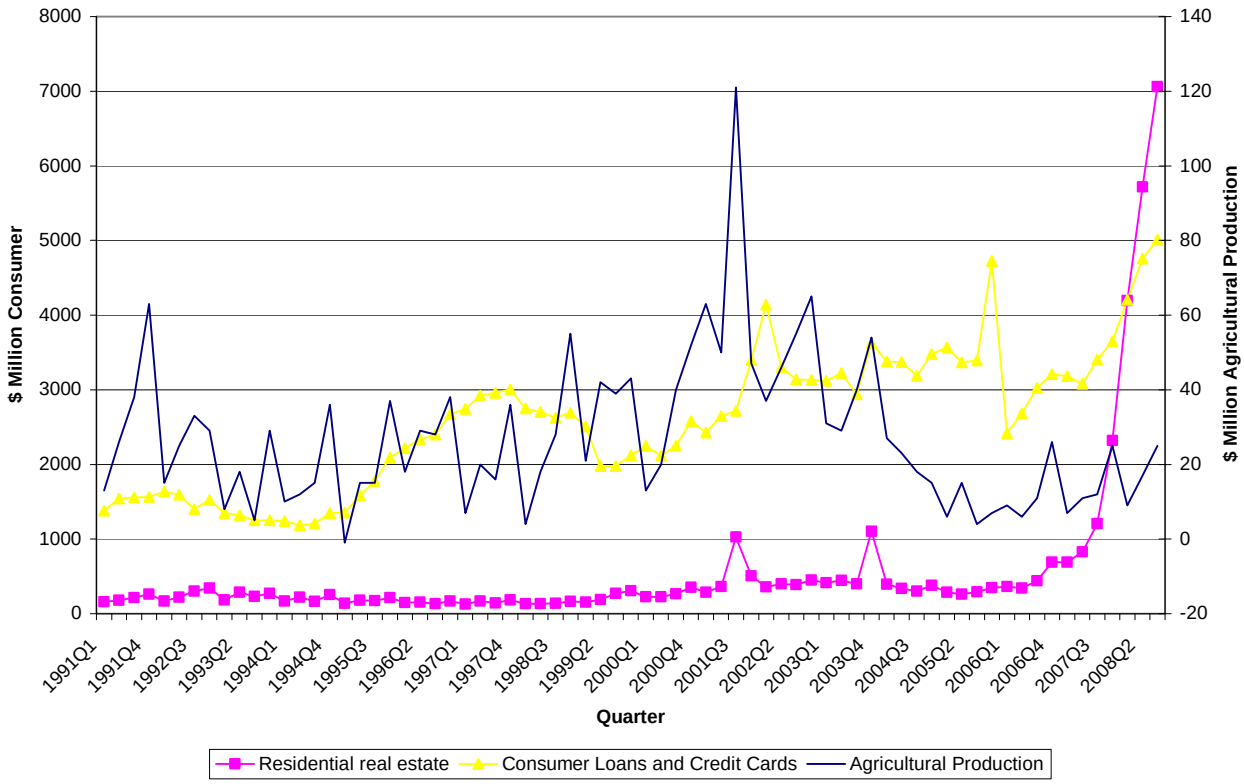


FIGURE 4-10. CHARGE-OFF RATE ON SINGLE FAMILY RESIDENTIAL MORTGAGES



The fallout in the consumer mortgage market is more dramatic than what Figure 4-10 portrays. The charge off rate is actually a function of outstanding loan balances. With rapidly increasing loan volume in the commercial sector an increase in 'rates' says little about the true carnage. Figure 4-11 plots real estate, credit card and agricultural loans in millions of dollars. Between October 2007 and October 2008 quarterly charge offs increased from $1,205 million to $7,059 million, with almost 5 times this amount at risk. Consumer credit-card charge-offs are falling in line with a trend increase being observed since 2006. In comparison, agricultural production loans, which are found on the right-hand axis amount to only $20 million in 2008 Q3 and indicate a downward trend. Of course Figures 4-9 to 4-11 present only a snap shot of the effects, since these represent bank charge offs. It says nothing of delinquency in the secondary mortgage market where heavily invested mortgage backed securities have created havoc amongst banks, investment banks, hedge funds, pension funds, and non-bank debt providers. Even Farmer-Mac was not immune with its investment in the equity of an investment bank that was heavily weighted by mortgage backed securities. The recent bailout of more than $700 billion by Congress and the Senate was intended to stabilize the real estate mortgage market, but the outcome is dubious.

FIGURE 4-11. LOAN CHARGE-OFFS COMMERCIAL BANKS $MILLION



Sub Prime and Interest Rates

The sub-prime market melt-down will likely lead to a slowdown in the speculative value of farmland. Speculation in this context is tied to the development option to convert agricultural land into residential lots. The demand for housing in terms of housing starts features in this option, but so does the price of houses. The greater the demand for housing and the more that people are willing or able to pay for the houses, the greater will be the option value capitalized into farmland values. The value of this option increases with house prices and housing demand, and decreases with commuting distance. Nonetheless, to a large extent any inflation or deflation in urban land markets can have significant impacts on farmland prices. In many localities suffering from sub prime foreclosures and forced sale of housing the increased supply will cause a precipitous decline in residential home values. This in turn will reduce the development option and hence land prices.

Table 4-6 shows recent USDA-ERS estimates of farmland prices in the U.S. Northeast, New York, and the USA. Land prices still tended to rise in 2008 indicating, at least for now, that the housing market has not had a great influence. This may be because most farms are so remote from residential zoning that the residential market has no influence. However it is notable that after a $400- $500/acre increase in each year between 2004 and 2007, real estate values in the Northeast increased by only $80 in 2008. This is likely due to the significant development value in New Jersey and Connecticut. Falling house prices, increased supply, and tight credit markets make the outlook for new residential development on farmland quite bleak in 2008 and 2009.

Table 4.7. Farmland Values and Cash Rents

State	2003	2004	2005	2006	2007	2008
			Real Estate $/acre			
NE	3200	3550	4110	4550	5000	5080
NY	1700	1780	1920	2050	2150	2400
USA	1270	1360	1650	1900	2160	2350
			Crop Land $/acre			
NE	3400	3800	4390	5040	5450	5900
NY	1390	1470	1530	1820	1920	2200
USA	1660	1770	2110	2390	2300	2970
			Cash Rent $/acre			
NE	42	44.5	46	47	48	51
NY	37	40	41	39	39	44
USA	73	76.5	78	79.5	85	96
			Cropland Value to Rent Ratio			
NE	80.95	85.39	95.43	107.23	113.54	115.68
NY	37.57	36.75	37.32	46.67	49.23	50
USA	22.74	23.14	27.05	30.06	27.06	30.94

Source: USDA ERS

The Ethanol Factor

In 2007 it was easily argued that rising oil prices increased the value of ethanol, which in turn increased the value of corn and by spillover effects from acreage adjustment, the price of other commodities as well. With oil prices currently below $50/barrel and gasoline prices falling to below 2005 prices, the ethanol effect may shrink. It is at least, less quite uncertain at this time. Corn and other commodity prices have fallen in the past year; Corn went from $4.35/bu for December 2008 futures as of November 2007 to $3.38 for December 2008 futures as of November 20, 2008. This is a reduction of almost 25%. Likewise, soybeans have fallen from $10.96/bu to $8.40/bu and milk has fallen from $20.16/cwt to $14.95/cwt. The market price of ethanol has fallen from $1.93/gallon to $1.58/gallon. At least in the short run, and depending on the price of oil and gasoline, it is unlikely that the ethanol factor will affect land prices beyond what is currently capitalized into land values.

Table 4.8. 2009-10 Outlook on Corn, Soybeans, Milk and Ethanol

Futures Contract Month or Nearby	Commodity Price Forecasts 2007-2009 Corn	Soybeans	Class III Milk	Ethanol
December 2007	3.87	10.96	20.16	1.93
March 2008	4.04	11.07	16.8	1.758
May	4.15	11.14	16.06	1.738
July	4.24	11.18	16.1	1.73
September	4.29	10.6	16.32	1.749
December	4.35	10.27	15.79	1.749
March 2009	4.41	10.26	15.1	1.835
May	4.44	10.22	15.24	1.835
July	4.47	10.3	15.25	1.835
September	4.31	9.62	15.35	1.835
December 2008	3.38	8.40	14.95	1.58
March 2009	3.54	8.47	14.10	1.59
May	3.65	8.56	14.65	1.60
July	3.76	8.64	15.32	1.62
September	3.87	8.59	15.84	1.62
December	4.01	na	15.50	1.65
March 2010	4.15	8.67	15.20	1.66
May	4.23	8.70	15.25	1.66
July	4.28	8.70	15.65	1.66
September	4.22	8.70	16.15	1.66

Source: CBOT and CME

Conclusions

The outlook for 2009 is a good one for agriculture. Still farmers should be wary of immediate and future risks. Over the past several years much of the equity gains in agriculture have been due to farm real estate prices. The caution here is that much of the gains in commodity prices in the past few years have proven illusory, illustrating that a combination of events and structural change that gives rise to optimism can be taken away just as quickly. Commodities generally follow a random walk and can trend down just as easily as they can trend up depending on many factors. In the short run it appears that any waning in the urban housing market has not had a significant impact on farmland prices, but the impact is inevitable if foreclosures increase, increasing the supply of houses; decreasing the number of housing starts, and reducing the development option of farmland values. Having said that, the financial strength of agriculture is strong. There is little to indicate any spillover in crises or loss of equity, or criticality in commodity markets that will or can stress agriculture. Even though credit is tight in the commercial market there is no indication that farm credit is restricting credit to agriculture at this time. However, the normal course of supplier credit, largely provided through lines of credit from commercial lenders, may be restricted and this would require farmers to increase established lines of credit. If existing lines of credit cannot be extended then some farmers may have to postpone investment in capital to maintain liquidity reserves for input purchases.

Chapter 5. Grain and Feed

Bill Tomek, Professor Emeritus, and Todd M. Schmit, Assistant Professor

In the past few years, the demand for grains and oilseeds was growing relative to supplies, with inventories declining. The sharp downturn in the world's economies has brought a different focus on the demand side of commodity markets, at least for the short run. The slowing growth in consumers' incomes is reflected in the demand for commodities. This year, more than most, uncertainty about prices is related to uncertainty about the future demands for commodities.

This chapter provides a status report on available supplies and the expected demands for wheat, corn, and soybeans. It is necessarily a snapshot based largely on the supply-demand estimates available as of November 10, and with a fluid, dynamic economy, this snapshot could change substantially.

Wheat

Wheat production in the U.S. in 2008 was 2.5 billion bushels, 433 million bushels above last year and almost 700 million above the low of two years ago (Table 5-1). Production was larger for most classes of wheat, including hard winter and spring wheats, and also soft red and white wheats. Global wheat production is projected to be a record 682 million metric tons, and world rice production is forecast to be 434 million metric tons, up slightly from 2007-08 and up about 13 million tons from 2006-07. Hence, food grain supplies appear adequate for the world as a whole.

With larger supplies, the USDA is projecting somewhat larger uses of wheat for domestic food consumption and for exports. U.S. exports will be influenced by competition from other wheat-producing countries and by the relationship of the U.S. dollar to other currencies. Considerable uncertainty exists about the export demand for U.S. wheat this year. Given the USDA supply-demand estimates, ending inventories are expected to double from 306 to 603 million bushels on June 30, 2009. Thus, inventories are expected to return to near normal levels (26% of annual use).

In this context, the USDA projection of a farm-level, marketing-year average price of $6.85 per bushel is perhaps a bit high. Their estimate does reflect that a considerable portion of the wheat harvest was sold in July and August at high prices. But, prices of wheat (and other commodities) have dropped sharply since summer. As of November 10, the prices for futures contracts for wheat on the Chicago Board of Trade ranged from $5.21 for December 2008 delivery to $5.56 for May 2009 delivery. Prices received by the typical farmer would be less than these futures prices.

The futures market does expect wheat prices in forthcoming marketing years to be higher than this year. Thus, the harvest-time (July) price for 2009 is $5.70, for 2010 $6.29, and for 2011 $6.58 per bushel. These prices are, of course, subject to much change as time evolves and new information arrives, but traders in futures markets are clearly expecting upward pressure of demand on supply in future years.

Corn

The corn harvest this Fall in the U.S., at 12.0 billion bushels, is over one billion bushels less than in 2007-08 (Table 5-2), though still the second largest crop on record. (The average yield of 153.8 bushels per acre is also the second largest on record.) The smaller U.S. crop is reflected in a lower estimate of world output (Table 5-3).

TABLE 5-1. U.S. SUPPLY AND DEMAND BALANCE SHEET FOR WHEAT[a]			
	2006-07	2007-08E	2008-09F
Supply:			
Harvested Acres (million)	46.8	51.0	55.7
Yield (bushels per acre)	38.7	40.5	44.9
		(Million Bushels)	
Beginning Stocks	571	456	306
Production	1,812	2,067	2,500
Imports	122	113	100
Total Supply	2,505	2,635	2,905
Use:			
Food	938	948	960
Seed	82	88	82
Feed & Residual	121	30	260
Total Domestic Use	1,140	1,066	1,302
Exports	908	1,264	1,000
Total Use	2,049	2,330	2,302
Ending Stocks	456	306	603
Stocks/Use Ratio	22.3%	13.1%	26.1%
Avg. farm price, U.S., $bu.	3.42	6.48	6.85
Avg. farm price, NYS, $bu.	3.34	6.75	-

[a]Data from USDA, "World Agricultural Supply and Demand Estimates," (November 10,2008) WASDE-464, P. 11.

The smaller supply is offset, in part, by the expectation of smaller demands for feed use and exports. Ethanol use is forecast to grow from last year to this year, although the November estimate is 100 million bushels less than forecast in September. Nonetheless, if the USDA's estimate is correct, ethanol production will use almost one billion more bushels of corn in 2008-09 than in 2007-08. The net result is that the total use of corn is forecast to decline only 200 million bushels, and hence ending stocks on August 31, 2009 will be 500 million bushels less than in the previous August. The stocks-to-use ratio is expected to be 9% on August 31, 2009 compared with 12.7% on August 31, 2008. A ratio of 10% or less is typically bullish for prices, and the USDA is projecting somewhat higher prices for the current marketing year than last.

Figure 5-1 depicts the relationship between the marketing-year average price of corn, for U.S. farmers, and the stocks-to-use ratio at the end of each year. The line shown in the Figure is based on a statistical fit of the data for the 1989-90 through 2005-06 marketing years. The observation for 2006-07 is significantly above the previous average relationship, and the observation for 2007-08 is even further above the historical relationship. Indeed, last year's price of $4.20 per bushel is estimated to be $1.87 higher than it would have been in the old regime, given an ending ratio of 12.7%.

The USDA's forecast of a ratio of 9% and a price of $4.40 per bushel for 2008-09 is consistent with the 2007-08 observation (see Figure 5-1). The corn market (and related markets) appear to be in a new price regime; for any given stocks-to-use ratio, prices are significantly higher than they were under the old regime. If the new regime holds, lower prices will require that the stocks-to-use ratio grows from the current level.

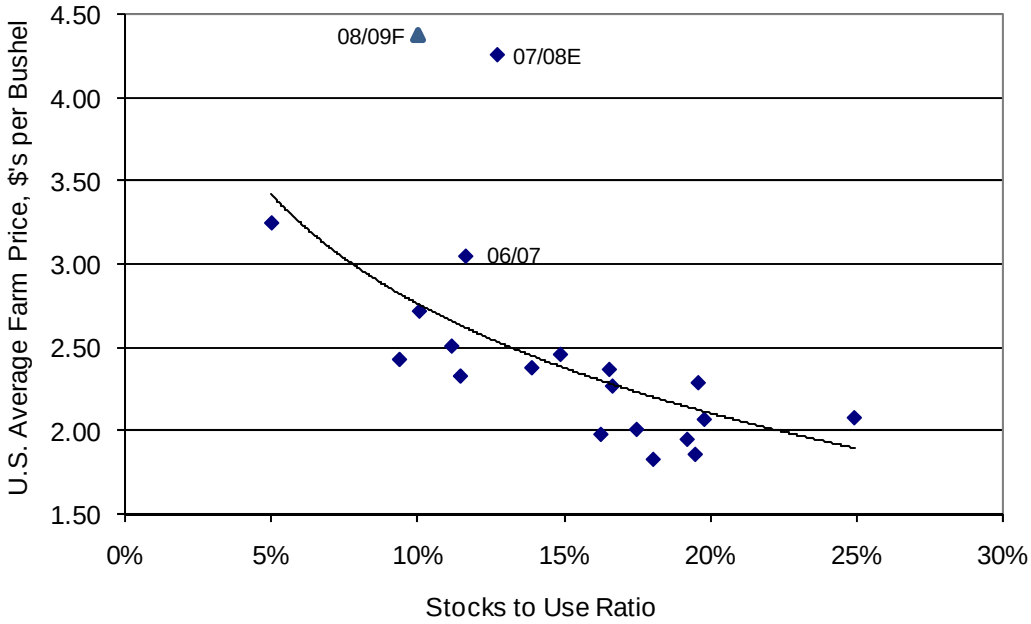
TABLE 5-2. U.S. SUPPLY AND DEMAND BALANCE SHEET FOR CORN[a]			
	2006-07	2007-08E	2008-09F
Supply:			
Harvested Acres (million)	70.6	86.5	78.2
Yield (bushels per acre)	149.1	151.5	153.8
		(Million Bushels)	
Beginning Stocks	1,967	1,304	1,624
Production	10,535	13,074	12,020
Imports	12	20	15
Total Supply	12,514	14,398	13,659
Use:			
Feed & Residual	5,595	5,974	5,300
Food, Seed and Industrial	3,490	4,364	5,335
Ethanol for Fuel[b]	2,119	3,026	4,000
Total Domestic Use	9,085	10,338	10,635
Exports	2,125	2,436	1,900
Total Use	11,210	12,773	12,535
Ending Stocks	1,304	1,624	1,124
Stocks/Use Ratio	11.6%	12.7%	9.0%
Avg. farm price, U.S., $bu.	3.04	4.20	4.40
Avg. farm price, NYS, $bu.	3.42	4.30	-

[a]Data from USDA, World Agricultural Outlook Board, (November 10, 2008) "World Agricultural Supply and Demand Estimates." WASDE – 464, P. 12.
[b]Ethanol for fuel is included in the food, seed, and industrial category and presented for illustrative purposes.

TABLE 5-3. WORLD SUPPLY AND DEMAND BALANCE SHEET FOR CORN[a]			
	2006-07	2007-08E	2008-09F
		(Million Metric Tons)	
Supply:			
Beginning Stocks	124.78	108.69	126.47
Production	712.44	791.96	781.36
Imports	90.92	96.64	80.43
Use:			
Feed, Domestic	478.29	498.39	488.02
Total, Domestic	728.53	774.18	797.71
Exports	93.80	95.38	82.33
Ending Stocks	108.69	126.47	110.12
Stocks/Use Ratio	14.9%	16.3%	13.8%

[a]Data from USDA, World Agricultural Outlook Board, (November 10, 2008) "World Agricultural Supply and Demand Estimates." WASDE – 464

FIGURE 5-1. HISTORICAL RELATIONSHIP BETWEEN CORN PRICES AND THE STOCKS TO USE RATIO, 1989-2008. [a]



A snapshot of futures prices, as of November 10, is provided in Table 5-4. Futures prices at this level–$4.00 to $4.25 for the current marketing year–imply that the USDA's forecast of farm prices for 2008-09 is on the high side. Or, if the USDA forecast is correct, then futures prices should increase from their November 10 level.

TABLE 5-4 FUTURES PRICES FOR CORN, CHICAGO BOARD OF TRADE, NOVEMBER 10, 2008

Contract Month	- $ per bu. -
December 2008	3.935
March 2009	4.015
May 2009	4.1375
July 2009	4.2525
September 2009	4.360
December 2009	4.500
December 2010	4.510

In sum, the evidence about forthcoming corn prices is mixed. The USDA estimate is consistent with the previous year's supply-demand conditions and with their estimates of expected conditions for the forthcoming year. But, as of this writing, traders in corn futures are expecting lower prices relative to those prevailing last year. Prices for new crop futures (for 2009-10 and 2010-11) are higher than those for this year, implying that traders expect tighter supply-demand balances in future years.

Soybeans

The area planted to soybeans last spring rebounded about 10 million acres, but yields this year are about two bushels per acre below a year earlier (Table 5-5). The net effect is that soybean production of 2.92 billion bushels is about 250 million bushels larger this year than last. Carryover into the current marketing year was a meager 205 million bushels, and consequently the total supply this year is about 125 million bushels less than a year ago. World-wide production of soybeans is projected to be up around seven percent (Table 5-6).

The USDA expects the combined domestic and export uses of beans to decline by about 125 million bushels, and if these estimates are correct, carryover will again be only 205 million bushels. Since use is projected to be smaller than last year, the stocks-to-use ratio is expected to increase slightly from 6.7% to 7.0%. The average farm-level price for 2008-09 is forecast to be $9.85 per bushel, down from the $10.10 of 2007-08.

TABLE 5-5. SUPPLY AND DEMAND BALANCE SHEET FOR SOYBEANS[a]

	2006-07	2007-08E	2008-09F
Supply:			
Harvested Acres (millions)	74.6	64.1	74.4
Yield (bushels per acre)	42.7	41.7	39.3
		(Million Bushels)	
Beginning Stocks	449	574	205
Production	3,188	2,676	2,921
Imports	9	10	7
Total Supply	3,647	3,260	3,133
Use:			
Crushings	1,808	1,801	1,745
Exports	1,116	1,160	1,020
Seed	80	93	90
Residual	69	-1	72
Total Use	3,073	3,054	2,928
Ending Stocks	574	205	205
Stocks/Use Ratio	18.7%	6.7%	7.0%
Avg. farm price, U.S., $bu.	6.43	10.10	9.85
Avg. farm price, NYS, $bu.	6.19	9.75	-

[a]Data from USDA, World Agricultural Outlook Board, (November 10, 2008) "World Agricultural Supply and Demand Estimates." WASDE 464, P.15.

The estimated soybean price, like the price of corn, appears to be a little on the high side when compared to futures prices as of November 10. These prices range from $9.48 for January delivery to $9.77 for August delivery (Table 5-7). Typical farm prices will be below the futures quotes. New crop futures prices for beans, like those for wheat and corn, are above those for the current marketing year. From the perspective of grain producers, markets are "optimistic" about price levels in future years.

TABLE 5-6. WORLD SUPPLY AND USE BALANCE SHEET FOR SOYBEANS[a]			
	2006-07	2007-08E	2008-09F
	(Million Metric Tons)		
Supply:			
Beginning Stocks	53.08	62.68	53.04
Production	237.33	220.89	235.74
Imports	69.05	78.86	77.11
Use:			
Crush, Domestic	195.90	201.96	203.60
Total, Domestic	225.28	229.96	233.96
Exports	71.50	79.43	77.87
Ending Stocks	62.68	53.04	54.06
Stocks/Use Ratio	27.8%	23.1%	23.1%

[a]Data from USDA, World Agricultural Outlook Board, (November 10, 2008) "World Agricultural Supply and Demand Estimates." WASDE 464, P. 28.

TABLE 5-7. FUTURES PRICES FOR SOYBEANS AND SOYBEAN MEAL, THE CHICAGO BOARD OF TRADE, NOVEMBER 10, 2008		
Contract Month	Beans $ per bu.	Meal $ per ton
January 2009	9.48	276.90
March 2009	9.5725	279.50
May 2009	9.6725	282.20
July 2009	9.75	285.00
August 2009	9.77	286.20
September 2009	9.76	285.70
November 2009	9.74	284.50 (Dec)
November 2010	9.78	283.50 (Dec)

The soybean meal price situation is similar to those for corn and soybeans. The average price in 2007-08 was $335.94 per ton, and the USDA projection is for a price of approximately $285 per ton in 2008-09 (range $255 to $315). The futures quotes (Table 5-7) suggest prices somewhat lower than the USDA projection, though not by a lot.

Feeds

As suggested in previous sections, feed ingredient prices are expected to be lower in 2008-09 than in 2007-08. But, looking out to future years, ingredient prices could very well be higher than 2008-09. Of course, these prices change from day to day and often by large amounts. This is demonstrated in Figure 5-2, which shows the weekly prices for the March 2009 soybean meal contract. Over the life of this contract, prices have been over $430 and below $250 per ton; as on November 14, the price was $271 per ton. Clearly, purchasing ingredients in current volatile markets is a challenge. Below, we provide some suggestions about managing purchases, but there are no easy solutions when prices are as variable as they currently are. Managing price risk is costly.

FIGURE 5-2. PRICES OF SOYBEAN MEAL MARCH 2009 FUTURES CONTRACT, WEEKLY, OCTOBER 2007 THROUGH NOVEMBER 14, 2008

Professor Schmit, graduate student Leslie Verteramo, and I have a model that can project selected mixed feed costs, *conditional on* an assumed set of ingredient costs. One set of estimates for dairy and layer feeds is shown in Table 5-8. They suggest, for example, that 18% protein dairy feed could be about $55 per ton lower this coming spring than a year earlier. As noted in the table's footnote, this particular result assumes, among other things, that corn prices will be $4 per bushel ($133 per ton) and soybean meal $255 per ton. These prices are consistent with recent quotes for corn and soybean meal futures contracts for March delivery. Obviously, the actual ingredient prices next March may be higher or lower than the November quotes, and it is the volatility in the underlying ingredient prices that makes feed costs difficult to forecast.

TABLE 5-8. APRIL COMPLETE FEED PRICES FOR DAIRY AND LAYERS, NORTHEAST U.S., 1999-2008.[a]

Year	Dairy (18%)	Layer
1999	179	210
2000	181	212
2001	184	212
2002	192	215
2003	207	232
2004	221	260
2005	202	207
2006	217	237
2007	259	288
2008	312	332
2009F	*256*	*288*

[a] Historical prices from USDA *Agricultural Prices*. Authors' 2009 forecasts assume $4/bu corn, $255/ton soybean meal, $150/ton distillers dried grains with solubles, and $255/ton meat & bone meal.

The challenge is to buy feed or feed ingredients at prices that will provide an acceptable profit. Feed prices should not be looked at in isolation from output prices; it is the relative prices that are important. Thus, it is useful to think in terms of "assuring" a profit margin between feed costs and output prices. Is it possible, for example, to fix a profitable margin by simultaneously forward contracting milk sales and feed ingredient purchases? Market prices may not provide an acceptable margin at various points in time, but it is useful to look for opportunities to lock in an acceptable margin. The existence of futures markets provides flexibility in timing purchase and sale decisions. These markets do not provide perfect results, however, because of basis risk, but the counter-party risk is zero. Forward contracting is perhaps simpler and has no basis risk, but forward contracts have counter-party risk.

Another possible way to protect against ingredient price increases is to consider buying call options on futures contracts. But, since the futures contract underlying the option contract has a volatile price, the premium paid for the option will be relatively high. Selected options premiums for the March 2009 corn futures are shown in Table 5-9. On November 10, when the March corn futures settled at $4.015 per bushel (Table 5-4), the at-the-money call (strike price of $4) option's premium was 38.7 cents per bushel. In other words, a dairy farmer would have paid $12.90 per ton to protect against corn prices rising above $133 per ton. This may look like rather expensive price insurance to some producers, but the premium reflects the possibility that March corn prices were over $8 per bushel. Again, the question is, does an option position help assure a return on the dairy operation?

TABLE 5-9. OPTIONS PREMIUMS ON MARCH 2009 CORN FUTURES CONTRACTS, NOVEMBER 10, 2008

Strike	Call	Put
370	55.0	23.5
380	49.1	27.6
390	43.7	32.3
400	38.7	37.3
410	34.4	43.0
420	30.5	49.0
430	27.1	55.4

Source: Chicago Board of Trade of the CME Group

Ending Comment

Last year, we wrote that prices would be high and volatile. This was true. The uncertainty about economic growth in the U.S. and around the world has reduced commodity price levels somewhat, but commodity prices are still high by historical standards. And, price volatility, if anything, has increased. Regrettably, these market conditions make managing price risk costly.

Chapter 6. Dairy — Markets and Policy

Mark W. Stephenson, Senior Extension Associate

2009 Dairy Outlook

Positive Factors:

- Excellent quality and quantity of feeds in the Northeast
- Lower feed, fuel and fertilizer prices

Negative Factors:

- Lower exports of dairy products
- Domestic economy in recession

Uncertainties:

- New Administration
- Length and depth of recession

New York Dairy Situation and Outlook
2007 Projected 2008, and Estimated 2009

Item	2007	2008	2009	Percent Change 07-08	Percent Change 08-09
Number of milk cows (thousand head)	627	626	624	-0.2	-0.3
Milk per cow (lbs.)	19,303	19,900	20,000	3.1	0.5
Total milk production (million lbs.)	12,103	12,430	12480	2.7	0.4
Blended milk price ($/cwt.)[a]	19.85	18.76	16.25	-5.5	-13.4

[a] Northeast federal order statistical uniform price for farms shipping milk to Suffolk County, MA (Boston).

Table 6-1. U.S. Milk Supply and Utilization, 2000–2008

	2001	2002	2003	2004 *	2005	2006	2007 a	2008 *b	2009 c
Supply									
Cows Numbers (thous.)	9,115	9,137	9,084	9,010	9,043	9,112	9,158	9,261	9,200
Production/cow (lbs)	18,139	18,612	18,748	18,958	19,565	19,951	20,267	20,423	20,627
Production	165.5	169.8	170.3	170.8	176.9	181.8	185.6	189.1	189.8
Farm Use	1.0	1.0	1.1	1.0	1.0	1.0	1.0	1.0	1.0
Marketings	164.5	168.8	169.2	169.8	175.9	180.8	184.6	188.2	188.8
Beginning Commercial Stocks	6.8	6.1	9.9	8.3	7.2	8.0	9.5	10.4	12.8
Imports	5.7	5.1	5.0	5.3	5.1	5.0	4.6	3.3	4.0
Total Supply	**177.0**	**180.0**	**184.2**	**183.4**	**188.2**	**193.8**	**198.7**	**201.8**	**205.6**
Utilization									
Commercial Disappearance	169.8	169.8	174.7	176.4	180.2	184.3	188.4	189.0	189.5
Ending Commercial Stocks	7.0	9.9	8.3	7.2	8.0	9.5	10.4	12.8	14.0
DEIP	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Net Removals (excluding DEIP)	0.1	0.3	1.1	-0.2	0.0	0.0	0.0	0.0	2.1
Total Use	**177.0**	**180.0**	**184.2**	**183.4**	**188.2**	**193.8**	**198.7**	**201.8**	**205.6**

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.

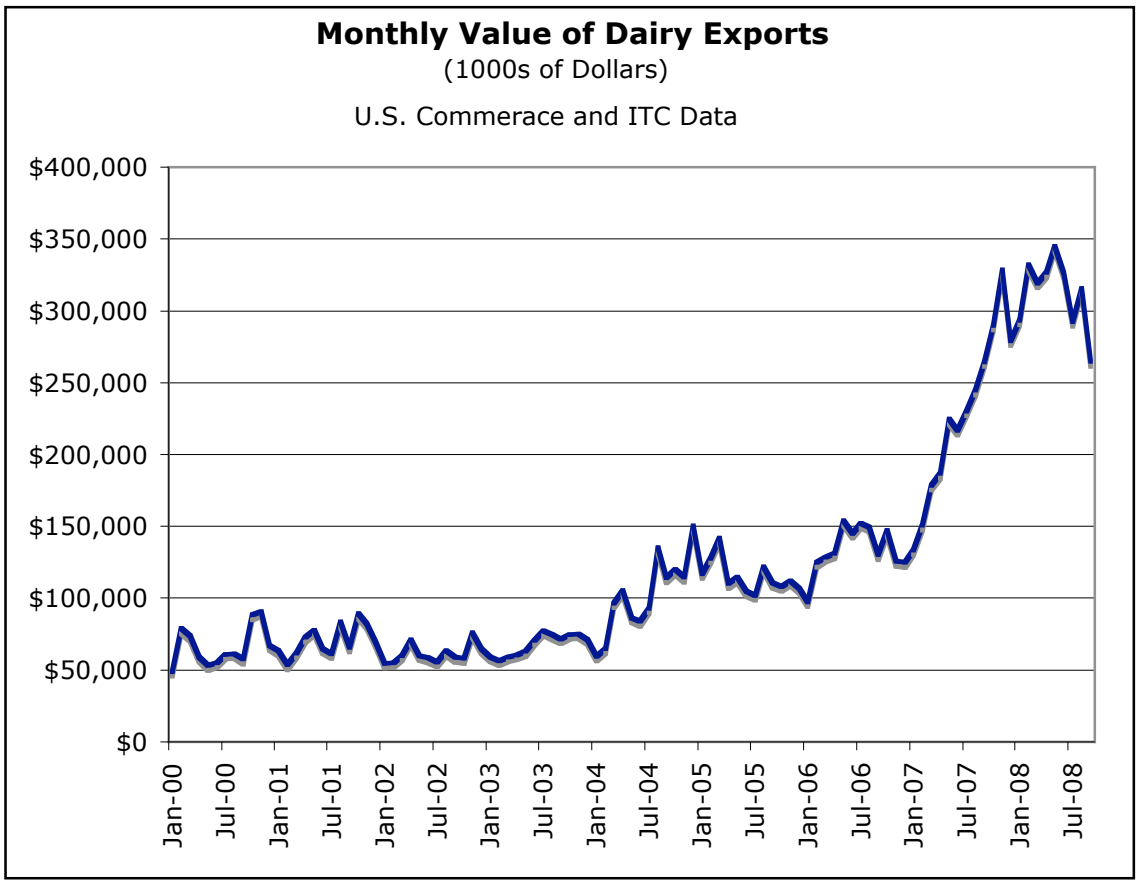
[b] Based on preliminary USDA data and Cornell estimates.

[c] Projected by Mark Stephenson.

The Dairy Situation

2008 continued our emergence as a major dairy exporting country. It wasn't many years ago that it was typical for us to export something like 2 to 3 percent of our milk solids and we imported about the same amount. Of course, we were typically importing very high value dairy products like specialty cheeses and exporting lower value products like butter or nonfat dry milk. This meant that from a dollar standpoint, we were always a trade deficit industry. In 2008 that changed.

For the first time ever, we will close the year as a net exporter in both volume and value, exporting something like 12 percent of our milk solids and close to $1 billion more than we imported. At the time of this writing we only have export data for the first three quarters of the year, but, through September 2008, export value stood at $3.09 billion, up 52 percent from year ago levels. Nonfat dry milk and skim milk powder exports were up 77 percent, cheese exports up 48 percent and butter shipments up an amazing 214 percent. The United States is capable of supplying a lot of dairy products into world markets



There are three primary reasons that dairy exports have been such a big story for the U.S.: world demand, world supply, and exchange rates. Income in many countries of the world has increased dramatically. Of course we cite China and the dramatic growth in their gross domestic product. However, as the worldwide price of oil has soared, so have incomes in oil exporting countries like

Russia, Mexico and the Middle East. In many of these countries, increased income is spent on improving the quality of their diet and dairy products have featured prominently in this effort.

At a time when world demand for dairy products was increasing, the supply of dairy products from traditional dairy exporters was faltering. The European Union has been implementing their Common Agricultural Policy (CAP) reform which calls for the end of subsidized exports of dairy products. Europe had been the largest exporter of dairy products but their exports are dramatically decreased as milk prices seek equilibrium in this new policy environment. Prior to the CAP reforms, the second largest exporter of dairy products was Oceania—Australia and New Zealand. Australia's milk production has been down by as much as 15 percent from the high water mark as they battle a prolonged drought (now in it's seventh year). New Zealand began the 2007-08 production year with good pastures and increased milk production. However, they were also impacted by the drought during the latter half of their milk production cycle and ended the year with about an 8 percent decline in production.

Exchange rates have also been an important aspect of U.S. dairy trade. The value of the dollar had declined against most major currencies from 2002 through the first half of 2008. In fact, it had dropped to about half its value against the Euro. With no change in supply or demand, U.S. dairy products would cost half as much to purchase as they would have just a few years ago—good news for exporters.

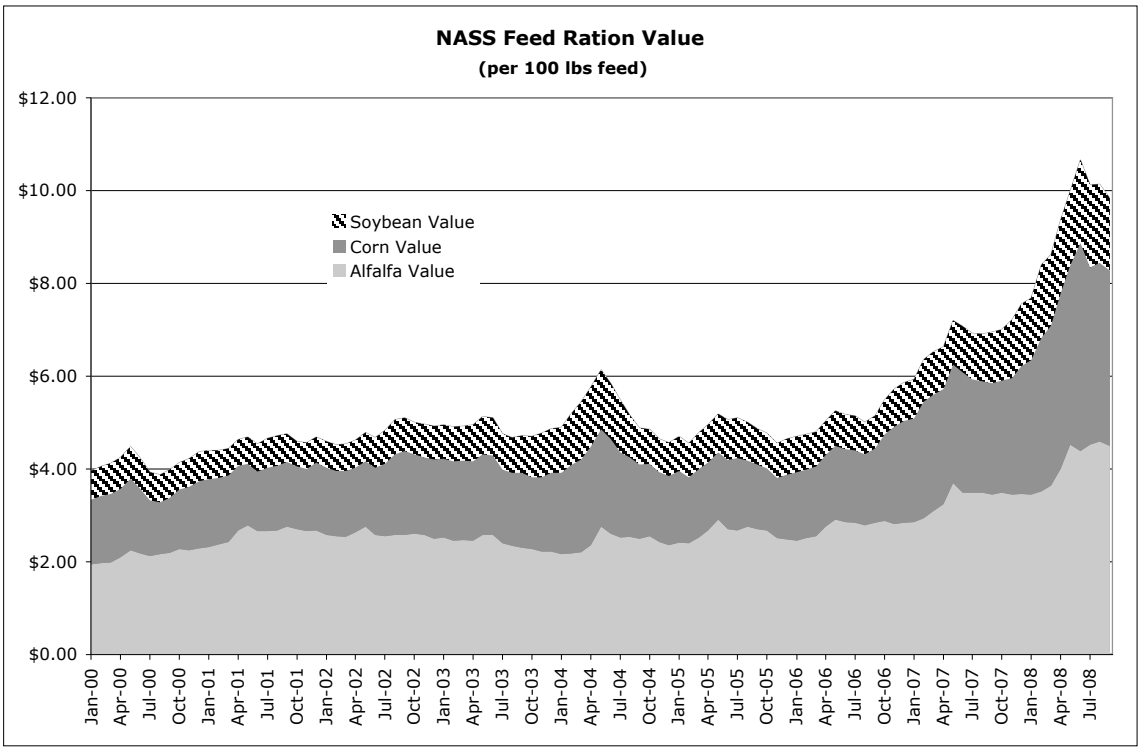
All factors taken together, U.S. dairy exports have soared and positioned us as a major player in world markets. Dairy exports have helped to give dairy producers the second highest milk price year, down just about a dollar per hundredweight from the record year of 2007.

The Milk Supply

Don Kullmann of Prairie Farms Dairy Cooperative used to talk about his "3M", "5M "and "7M" theories of milk production: "money makes milk," "more money makes more milk "and "much more money makes much more milk." Given that we have just passed through the highest and second highest milk price years, you would think that we should be headed into a tsunami of milk production. This hasn't occurred largely because margins have not great. We should probably substitute the word "Margin" for "Money" in the Kullmann theory of milk production.

High fertilizer, fuel and feed costs have held down more dramatic increases in milk production. It has been typical for us to increase milk production by just more than 1 percent over year earlier levels. Adjusted for leap year, 2008 will have increased milk production by just about 1.6 percent which is a very ordinary long-run increase (we have increased by 2-3 percent in the prior three years).

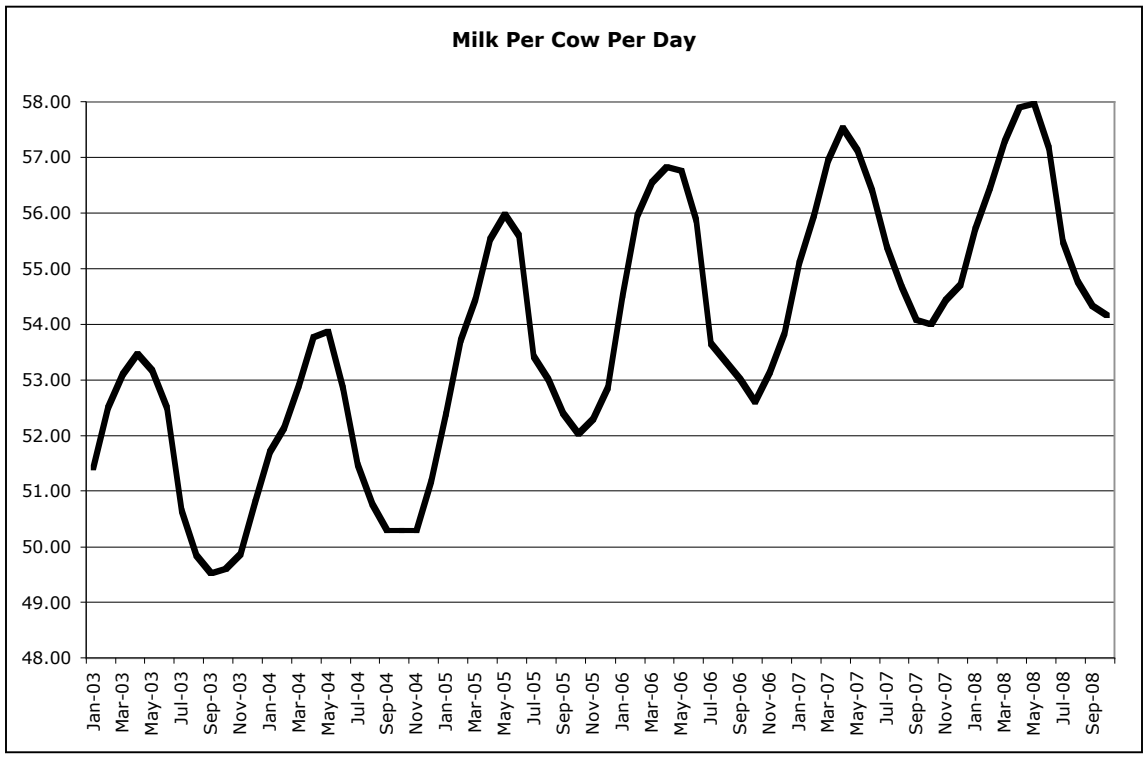
By any measure—milk price or margin—2007 was a very good year for dairy farmers. Credit reserves were restored from the beating they took in 2006 when we last experienced low milk prices. However, 2007 was the year that we began to see a dramatic increase in oil prices. With the higher oil prices came a new interest in corn-based ethanol as a sustainable bio-fuel and with the new demand for corn in ethanol production came higher feed costs for dairy producers. The chart below shows the dramatic increase in feed prices.



Because feed is the single largest cost category for milk producers, the National Agricultural Statistics Service (NASS) has published a Milk-Feed Price ratio to provide an indication of the well-being on dairy farms. The ratio was a reasonable indicator until we had a doubling of feed costs and a dramatic increase in milk prices. By historic standards of the milk-feed price ratio, 2008 looks like perhaps the worst year ever for dairy producers. However, it is probably more accurate to look at a milk-feed margin rather than a ratio. The margin also shows a good deal of tightening but not to the levels seen in 2006. That is probably why we have seen an ordinary increase in the milk supply.

The increase in milk supply has come about primarily because of increased milk cow numbers. Milk production per cow has a nearly linear trend of increasing about 260 pounds per year. In 2008, the increase will be about 160 pounds and is well off the long-term trend. It is more typical for cow numbers to decrease over the long-run but, since 2004, cow numbers have been increasing. Only in the last quarter of 2008 have we seen cow numbers begin to decline once again.

With high feed prices (particularly concentrate prices) dairy farmers have chosen to not push productivity as hard and to milk more cows. This allows cows to make better use of forages and keep purchased feed costs (if not feed prices) to a minimum.


Milk Per Cow Per Day
58.00
57.00
56.00
55.00
54.00
53.00
52.00
51.00
50.00
49.00
48.00
Jan-03
Mar-03
May-03
Jul-03
Sep-03
Nov-03
Jan-04
Mar-04
May-04
Jul-04
Sep-04
Nov-04
Jan-05
Mar-05
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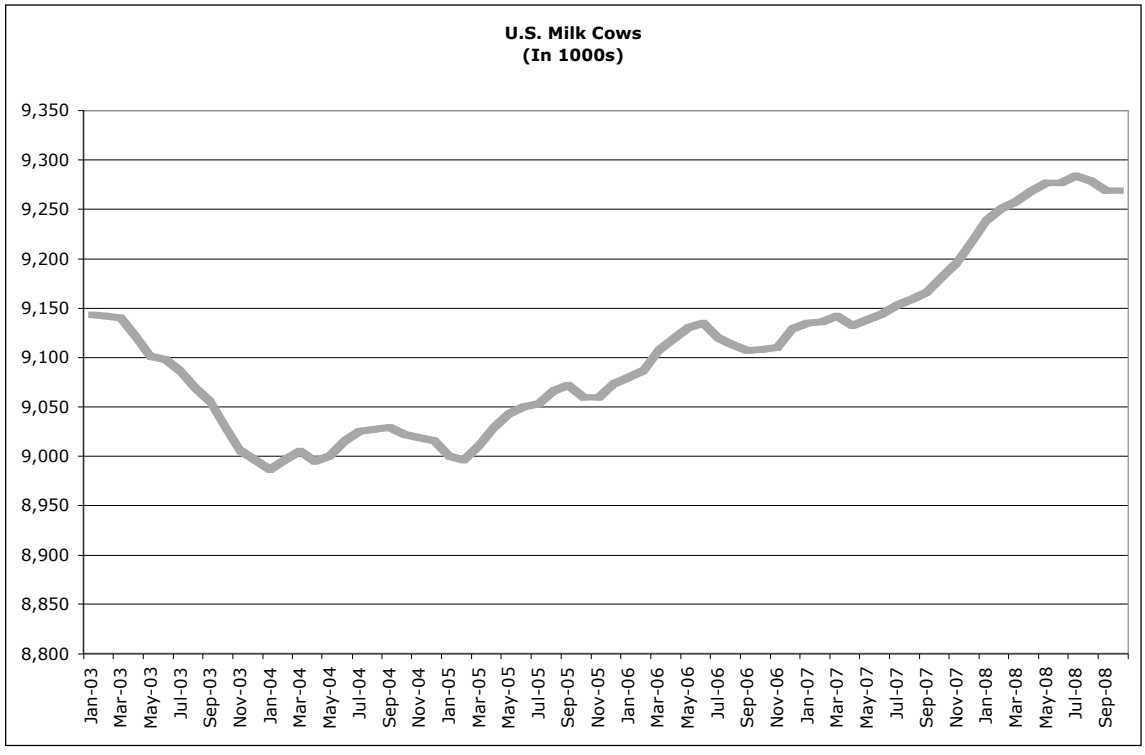
May-08
Jul-08
Sep-08


U.S. Milk Cows
(In 1000s)
9,350
9,300
9,250
9,200
9,150
9,100
9,050
9,000
8,950
8,900
8,850
8,800
Jan-03
Mar-03
May-03
Jul-03
Sep-03
Nov-03
Jan-04
Mar-04
May-04
Jul-04
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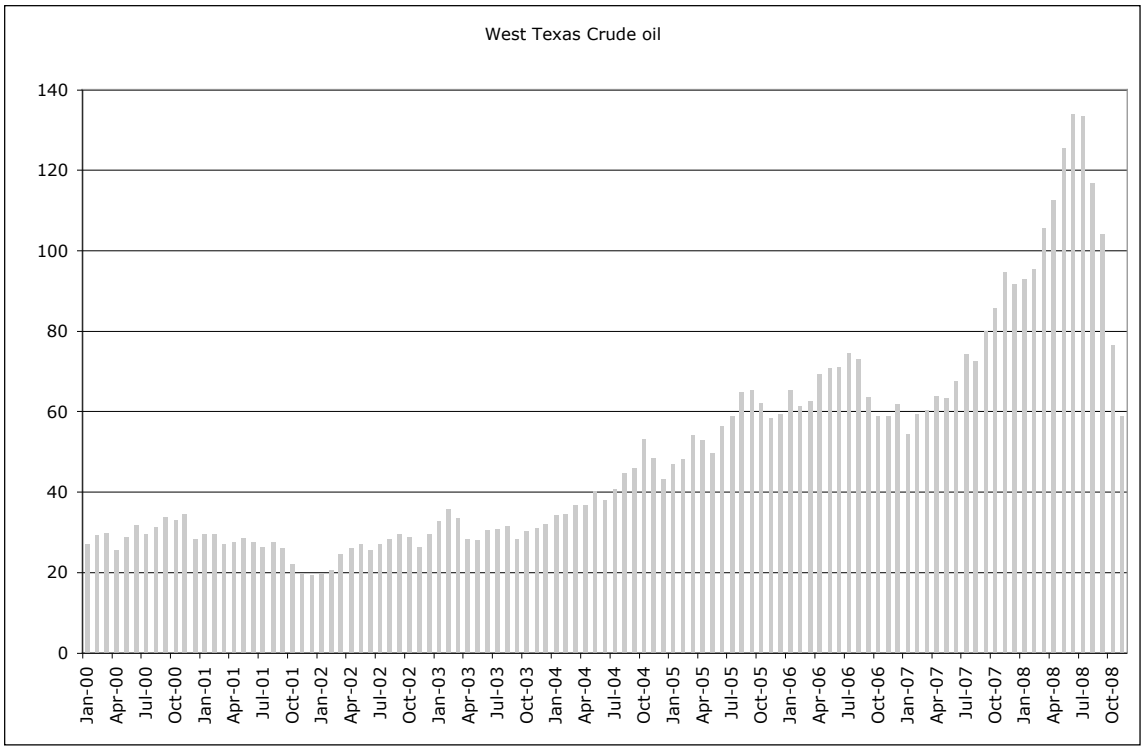
Sep-08

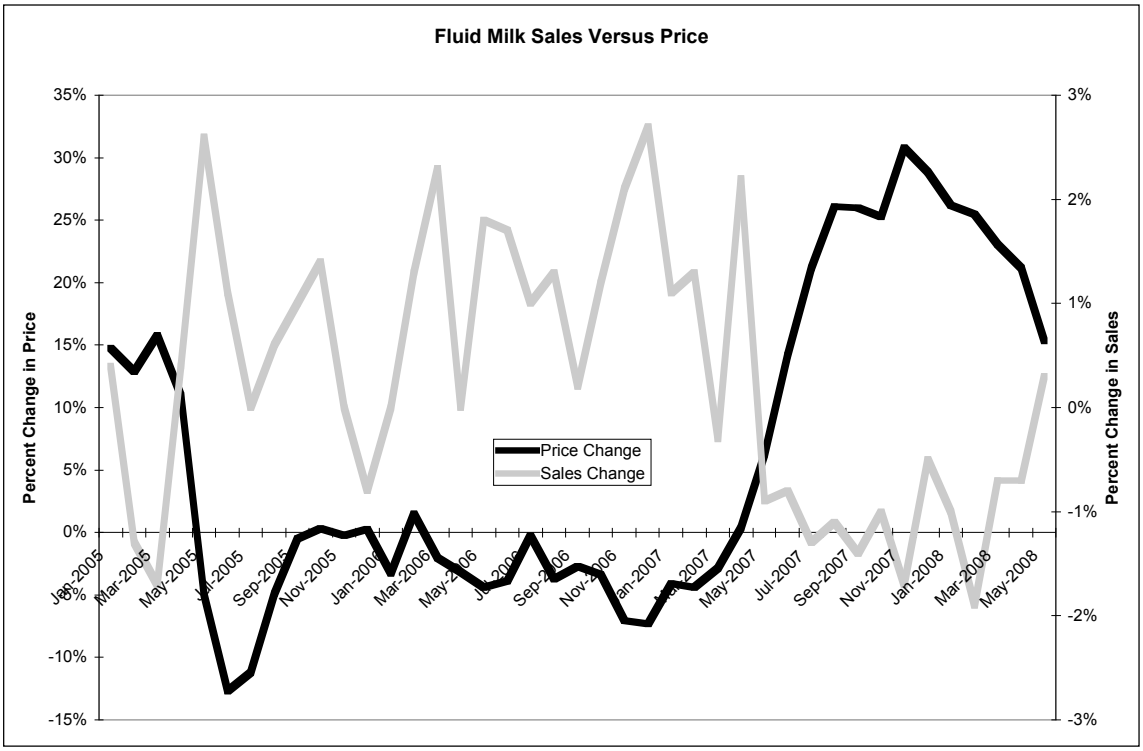
Dairy Product Demand

The dramatic increase in oil prices has sent shock waves through our economic system. It is simplifying a complex web of events but, U.S. consumers felt as though they had a lot of discretionary income when oil prices were below $40 a barrel. We thought we could afford large homes that were significant distances from our workplace. However, commuting 100 miles a day in a large SUV became too expensive when oil burst through the $100 a barrel mark in 2008. Consumers began defaulting on mortgages at an alarming rate and cutting back on discretionary spending like out-of-home eating.



Dairy products are prominently featured in out-of-home eating but as the restaurant business has seen significant decline over the past year, domestic consumption of dairy products has softened. The good news for dairy producers is that exports has picked up the slack in domestic consumption.

Virtually all research on dairy product consumption indicates that products are price inelastic. That doesn't mean that consumers will demand the same amount at any price, just that they are somewhat less price sensitive. The chart below indicates that consumers alter their buying behavior even with changes in fluid milk price. This is much more true with food service behavior toward manufactured dairy product prices.



The Dairy Outlook

Many factors look different at the end of 2008 than they did at the beginning of the year. For instance, Oceania has begun their 2008-09 milk production season with a strong start. Both Australia and New Zealand have increased milk production and, barring a recurrence of last year's drought, expect to export more milk products than they did last year. Also, the rest of the world's economies are following the United States economy down into a recession. And, as if this weren't bad enough news for U.S. exports, our dollar has strengthened significantly against most currencies. It is an almost sure thing that U.S. dairy exports will be well down in 2009.

If exports are down, the milk that would have been used to produce those products will be pushed back onto our domestic market. Unfortunately, I expect that our own domestic economy will suffer through all of 2009 and dairy products will not escape the consumer belt tightening. Table 6.1 is a U.S. Supply and Utilization table that tries to pull together these expected outcomes. I have commercial disappearance, which includes domestic consumption and non-government exports, as being up just slightly in 2009—well below trend. I also have U.S. milk production barely increasing over the year with cow numbers in decline and productivity below trend. Still, this causes an increase in commercial inventories which I think most manufacturers will be reluctant to do in the face of falling prices. Net Removals are the line item to pick up the slack.

Net Removals are purchases of dairy products by the Commodity Credit Corporation (CCC). In the two months since the beginning of October, 2008, the CCC has already purchased nearly 70 million pounds of nonfat dry milk. This is equivalent to nearly 1 billion pounds of milk production and I think that the CCC will be purchasing quite a bit more dairy product throughout the rest of 2009.

CCC purchases have implications for milk prices. If prices were to fall to support levels, then we would be looking at something like $10 milk. I don't think that this is likely as exports would pick up at those levels of prices thus pushing market prices above support. However, I am expecting farm milk prices to drop by about $2.50 from year earlier levels and, 2008 prices were already more than a dollar below 2007 levels. Milk prices will have to be low enough to discourage milk production and clear the markets.

If there is a silver lining to this forecast, it is that oil prices have fallen from recent highs near $140 a barrel to below $50 a barrel. This will considerably ease dairy farm costs of fuel, fertilizer and feed and ultimately, it will help consumers to climb out from under the dark cloud of recession and begin to increase purchases again. As an example, December 08 futures for corn have fallen from a high above $6.00 a bushel in August of 2008 to less than $3.50 a bushel three months later.

Dairy Policy

2007 was a Farm Bill year and legislation was passed. The bill contained only minor changes for dairy but did include an extension of the Dairy Export Incentive Program which might see some usage this year and an alteration to the Milk Income Loss Contract (MILC) program. The new program raises the production cap from 2.4 million pounds to 2.985 million and it increases the percentage payout above the trigger price from 34 percent to 45 percent. However, the biggest change was a means of raising the trigger price based on changes in the feed price. Currently, using futures market values for milk and feed prices, I don't expect any MILC payments in 2009. However, there are several months where the trigger price is close to being invoked and the possibility of payments exists if milk prices decline faster than feed prices.

The Farm Bill also called for the formation of a Federal Milk Marketing Order review commission. The commission was not funded in the Farm Bill and it is doubtful if it will ever be formed to carry out its task.

Federal Milk Marketing Orders did increase make allowances slightly in 2008 and there was an emergency hearing which resulted in changes to class I differentials in the Southeast. In the year ahead, I don't expect many dramatic changes in the order system but there are folks across the country who are talking about a national hearing to consider the entire class I price surface again. It is possible that such a hearing would be convened but it is unlikely that any such changes in Federal Orders would be promulgated in the year ahead.

The results of recent elections raise several questions with regard to dairy policy. One is who will be named the next Secretary of Agriculture. Another is whether the recently passed Farm Bill would be opened up for new considerations. Having a Democratic House, Senate and Administration could bring new policy affecting dairy in the year ahead.

Table 6-2. National Farm Prices for Milk; CCC Purchase, Wholesale, and Retail Prices for Cheddar Cheese, Butter, and Nonfat Dry Milk; and Selected Retail Price Indices, 1998–2008

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007[a]	2008[b]
Farm Milk ($/cwt.)											
All Milk (ave. fat)	15.50	14.38	12.40	15.04	12.18	12.55	16.13	15.19	12.96	19.21	18.29
Class III (3.5%)	14.20	12.43	9.74	13.10	10.42	11.42	15.39	14.05	11.89	18.04	17.37
Support (3.5%)	9.95	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80
Milk Price: Feed Price Value	3.34	3.59	3.05	3.39	2.60	2.61	3.10	3.24	2.56	2.80	2.17
MILC payments[c]	0.00	0.00	0.00	0.06	1.21	1.09	0.22	0.04	0.61	0.07	0.00
Cheddar Cheese, Blocks ($/lb.)											
CCC Purchase	1.115	1.100	1.122	1.131	1.131	1.131	1.131	1.131	1.131	1.131	1.131
Wholesale, Chicago Mercantile Exchange	1.569	1.404	1.149	1.439	1.182	1.317	1.649	1.492	1.239	1.758	1.862
Butter ($/lb.)											
CCC Purchase, Grade A or higher, Chicago	0.650	0.650	0.668	0.855	0.855	1.050	1.050	1.050	1.050	1.050	1.050
Wholesale, Gr. AA, Chicago Merc. Exchange	1.769	1.229	1.177	1.663	1.106	1.145	1.817	1.549	1.236	1.368	1.498
Nonfat Dry Milk											
CCC Purchase, Unfortified ($/lb.)	1.028	1.010	1.010	0.900	0.900	0.800	0.800	0.800	0.800	0.800	0.800
Wholesale, Central States	*1.069	1.031	1.015	1.004	0.928	0.838	0.858	0.985	1.001	1.804	1.300
Retail Price Indices (1982–84=100.0)											
Whole Milk	147.9	156.2	156.9	165.9	162.1	162.5	183.4	184.9	181.6	205.4	218.6
Cheese	152.3	162.6	162.8	167.6	170.0	169.4	180.8	183.3	180.8	191.5	212.7
All Dairy Products	150.8	159.6	160.7	167.1	168.1	167.9	180.2	182.4	181.4	194.8	209.8
All Food	161.1	164.6	168.4	173.6	176.8	180.5	186.6	191.2	195.7	203.3	212.7
All Consumer Prices	163.0	166.6	172.2	177.1	179.9	184.0	188.9	195.3	201.6	207.3	216.0

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] Milk Income Loss Contract payments began in October of 2001.

The Northeast Dairy Situation and Outlook

Receipts of Producer Milk by State, 1000s Pounds
Northeast Federal Milk Marketing Order

	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07	Total
CT	31,049	28,383	31,580	30,427	31,085	29,150	29,141	28,756	27,577	28,193	27,329	28,796	351,466
ME	48,091	42,662	47,506	46,409	49,188	49,199	50,401	49,593	47,756	48,492	46,618	48,375	574,290
MA	20,949	18,665	20,674	20,088	20,711	19,539	19,806	19,453	18,533	19,021	18,289	19,212	234,940
MD	75,004	67,140	84,740	75,335	78,337	75,525	73,326	68,821	68,052	70,385	70,096	74,509	881,270
NJ	13,684	12,311	13,694	13,167	13,723	12,583	12,780	23,205	22,481	22,955	22,271	13,004	195,858
NY	**790,799**	**711,246**	**798,168**	**779,669**	**816,907**	**743,663**	**810,212**	**906,372**	**856,321**	**905,442**	**859,864**	**868,770**	**9,847,433**
PA	633,885	573,395	684,456	673,559	708,775	668,492	681,273	653,055	628,187	654,903	645,275	678,530	7,883,785
VT	214,962	192,010	212,638	206,830	215,751	208,117	213,498	211,602	202,489	208,972	202,786	213,203	2,502,858
VA	7,498	7,095	8,266	8,161	8,401	8,201	8,048	7,684	7,619	8,111	8,524	8,512	96,120
Other Regional*	24,678	22,447	25,352	24,520	25,278	24,136	24,562	13,684	13,294	13,560	13,507	24,596	249,614
Other States**	18,560	16,997	21,853	23,292	20,286	17,973	17,946	16,158	14,438	16,322	18,056	17,942	219,823
Total	1,879,159	1,692,351	1,948,927	1,901,457	1,988,442	1,856,578	1,940,993	1,998,383	1,906,747	1,996,356	1,932,615	1,995,449	23,037,457

* Includes data for the states of New Hampshire, and Rhode Island.

** Represents restricted data for the states of Delaware, Indiana, Iowa, Michigan, North Carolina, Ohio, West Virginia, and Wisconsin.

Source: Northeast Monthly Federal Milk Order Market Statistics .

Dairy producer numbers have declined for many years as remaining farms have become larger. The Northeast is about 8 billion pounds of milk net deficit in total production. This can make pooling milk on this order attractive to distant producers. Producers from states as far away as Ohio, Michigan, Delaware, West Virginia and even North Carolina, Indiana and Iowa have pooled milk on this order.

It may be of interest to note that in July of 2008, Idaho surpassed New York as the number 3 milk producing state in the country.

Number of Producers by State
Northeast Federal Milk Marketing Order

	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07	Total
CT	142	140	141	141	139	140	138	136	135	134	137	135	138
ME	339	337	336	338	335	338	336	333	333	332	333	334	335
MA	166	164	163	163	164	164	163	521	524	518	515	166	283
MD	506	507	514	513	502	505	518	163	163	161	164	511	394
NJ	109	108	107	106	105	105	104	104	104	103	103	102	105
NY	**5,192**	**5,196**	**5,178**	**5,205**	**5,190**	**4,928**	**5,111**	**5,118**	**5,099**	**5,095**	**5,086**	**5,078**	**5,123**
PA	5,908	5,879	5,970	5,928	5,911	5,954	5,999	6,005	5,956	5,960	5,957	5,964	5,949
VT	1,121	1,112	1,105	1,110	1,118	1,094	1,085	1,086	1,087	1,090	1,087	1,082	1,098
VA	69	59	72	74	74	84	85	80	84	77	73	72	75
Other Regional*	145	146	149	150	150	149	147	147	146	145	148	147	147
Other States**	204	205	256	268	243	218	206	242	228	212	253	208	229
Total	13,901	13,853	13,991	13,996	13,931	13,679	13,892	13,935	13,859	13,827	13,856	13,799	13,877

* Includes data for the states of New Hampshire, and Rhode Island.

** Represents restricted data for the states of Delaware, Indiana, Iowa, Michigan, North Carolina, Ohio, West Virginia, and Wisconsin.

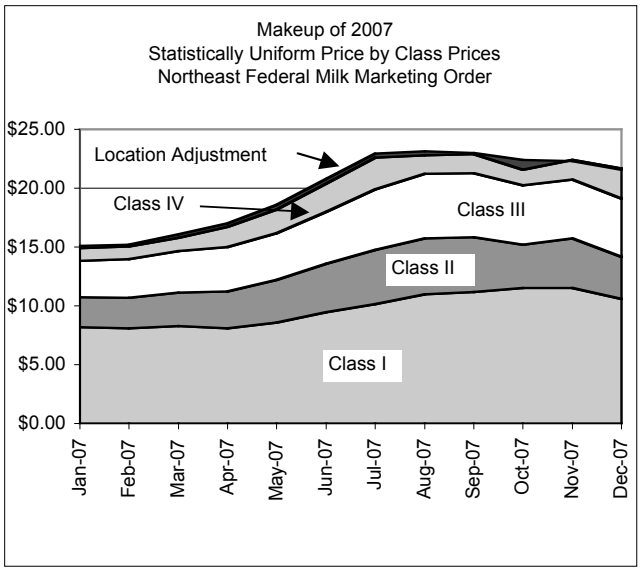
Source: Northeast Monthly Federal Milk Order Market Statistics .

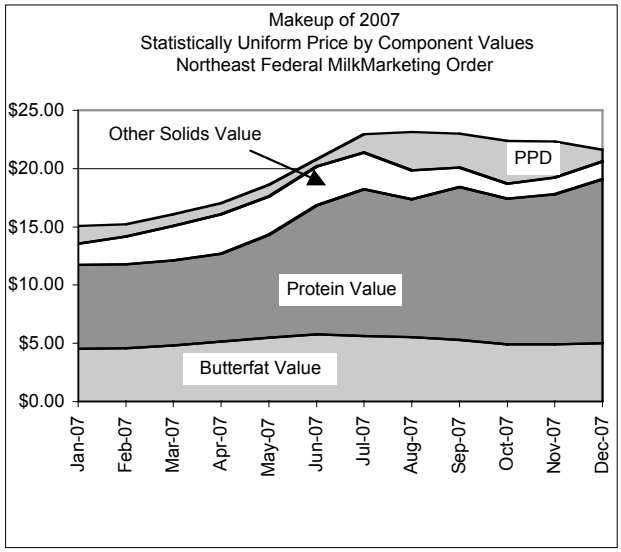
Class Utilization and Prices
Northeast Federal Milk Marketing Order

	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	Jul-07	Aug-07	Sep-07	Oct-07	Nov-07	Dec-07
Class I Utilization	48.6%	48.6%	47.4%	44.3%	44.6%	44.8%	42.0%	43.8%	44.5%	46.4%	46.7%	45.4%
Class II Utilization	19.7%	20.0%	20.9%	21.6%	21.8%	21.9%	21.4%	21.3%	20.9%	20.3%	19.0%	17.3%
Class III Utilization	23.0%	23.0%	23.4%	23.4%	22.8%	22.0%	24.2%	27.6%	27.0%	26.9%	26.1%	23.9%
Class IV Utilization	8.7%	8.5%	8.4%	10.7%	10.7%	11.4%	12.4%	7.2%	7.6%	6.4%	8.2%	13.3%
Class I Price	$16.84	$16.64	$17.50	$18.25	$19.17	$21.09	$24.16	$25.01	$25.16	$24.84	$24.70	$23.29
Class II Price	$12.85	$13.08	$13.60	$14.51	$16.62	$18.89	$21.40	$22.41	$22.16	$21.90	$22.07	$20.82
Class III Price	$13.56	$14.18	$15.09	$16.09	$17.60	$20.17	$21.38	$19.83	$20.07	$18.70	$19.22	$20.60
Class IV Price	$12.53	$12.71	$13.71	$16.12	$18.48	$20.76	$21.64	$21.87	$21.61	$21.31	$20.40	$19.18
Butterfat Price	$1.30	$1.31	$1.38	$1.47	$1.57	$1.65	$1.61	$1.59	$1.51	$1.41	$1.41	$1.43
Protein Price	$2.41	$2.41	$2.43	$2.52	$2.94	$3.71	$4.21	$3.94	$4.39	$4.17	$4.31	$4.71
Other Solids Price	$0.32	$0.42	$0.53	$0.60	$0.58	$0.58	$0.55	$0.44	$0.29	$0.23	$0.25	$0.26
PPD	$1.53	$1.03	$0.99	$0.93	$1.00	$0.63	$1.56	$3.31	$2.92	$3.68	$3.09	$0.99

Source: Northeast Monthly Federal Milk Order Market Statistics .

The graphs below are created from the data above. They illustrate the where the money in the Northeast Federal Order pool is coming from and how it is being paid out. The first graph shows the contribution of processors from the four classes of milk to the pool. The second graph shows the disbursement of the pool dollars to producers in component values and the Producer Price Differential. Protein values dominated the contribution of components in the second half of the year.





MILK PRICE PROJECTIONS*
Northeast Federal Order Blend Price
3.5 Percent, Suffolk County, Massachusetts
Last Quarter 2007-2008, Four Quarters 2008-2009

Month	2007	2008	Difference
	(dollars per hundredweight)		
October	22.38	17.44	-4.94
November	22.31	17.56 [a]	-4.75
December	21.59	16.44 [a]	-5.15
Fourth Quarter Average	22.09	17.15 [a]	-4.95
Annual Average	***19.85***	***18.76*** [a]	***-1.09***

Month	2008	2009 [a]	Difference
	(dollars per hundredweight)		
January	20.97	16.01	-4.96
February	19.54	15.50	-4.04
March	17.89	15.26	-2.63
First Quarter Average	19.47	15.59	-3.88
April	18.55	15.58	-2.97
May	18.18	15.62	-2.56
June	19.56	16.07	-3.49
Second Quarter Average	18.76	15.76	-3.01
July	20.61	16.44	-4.17
August	19.50	16.71	-2.79
September	18.90	16.86	-2.04
Third Quarter Average	19.67	16.67	-3.00
October	17.44	16.95	-0.49
November	17.56 [a]	17.01	-0.55
December	16.44 [a]	16.99	0.55
Fourth Quarter Average	17.15 [a]	16.98	-0.16
Annual Average	***18.76*** [a]	***16.25*** [a]	***-2.51***

* Averages may not add due to rounding.

[a] Projected.

Chapter 7. Dairy -- Farm Management

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Herd Size Comparisons

Data from the 250 New York dairy farms that participated in the Dairy Farm Business Summary (DFBS) Project in 2007 have been sorted into eight herd size categories and averages for the farms in each category are presented in Tables 7-1 and 7-2. Note that after the less than 50 cow category, the herd size categories increase by 25 cows up to 100 cows, by 100 cows up to 400 cows, and by 200 cows up to 600 cows.

As herd size increases, the net farm income increases (Table 7-1). Net farm income without appreciation averaged $36,257 per farm for the less than 50 cow farms and $1,156,991 per farm for those with more than 600 cows. The return to all capital without appreciation also generally increased as herd size increased.

It is more than size of herd that determines profitability on dairy farms. Farms with 600 and more cows averaged $1,136 net farm income per cow while the less than 50 cow dairy farms averaged $879 net farm income per cow. The 300 to 399 herd size category had the highest net farm income per cow at $1,376, while the 400 to 499 herd size category had the second highest net farm income per cow at $1,287. Other factors that affect profitability and their relationship to the size classifications are shown in Table 7-2.

TABLE 7-1. COWS PER FARM AND FARM FAMILY INCOME MEASURES
250 New York Dairy Farms, 2007

Number of Cows	Number of Farms	Average Number of Cows	Net Farm Income without Appreciation	Net Farm Income per Cow	Labor & Management Income per Operator	Return to all Capital without Appreciation
Under 50	26	41	$36,257	$879	$6,234	1.0%
50 to 74	32	63	55,492	878	18,162	2.9%
75 to 99	23	88	90,893	1,039	38,548	5.8%
100 to 199	54	142	132,264	929	47,317	6.9%
200 to 299	20	252	300,000	1,189	116,014	11.2%
300 to 399	17	351	483,595	1,376	228,039	17.1%
400 to 599	25	469	603,860	1,287	217,138	14.6%
600 & over	53	1,019	1,156,991	1,136	474,094	15.3%

This year, net farm income per cow did not exhibit the usual increase as herd size increased. All herd size categories saw an increase in operating cost of producing milk from a year earlier (Table 7-2). 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 more than 600 cows averaged more milk sold per cow than any other size category (Table 7-2). With 24,024 pounds of milk sold per cow, farms in the largest herd size group averaged 17.6 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, six regions of the state, for large herds, small herds, grazing farms, and farms that rent are available from the Department of Applied Economics and Management website: http://aem.cornell.edu/outreach/publications.htm .

The ability to reach high levels of milk output per cow with a large herd 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 one percent of the 81 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 200 cows reported 11 percent of the herds milking more often than 2X, the 200-299 cow herds reported 35 percent, 300-399 cow herds reported 47 percent, 400-599 cow herds reported 52 percent, and the 600 cow and larger herds reported 72 percent exceeding the 2X milking frequency.

TABLE 7-2. COWS PER FARM AND RELATED FARM FACTORS
250 New York Dairy Farms, 2007

Number of Cows	Average Number 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.	
							Operating	Total
Under 50	41	17,977	4,118	4.0	7.8	$13,618	$13.52	$23.73
50 to 74	63	17,842	4,747	3.4	7.7	10,328	13.87	21.56
75 to 99	88	18,538	5,505	2.9	8.8	9,863	13.54	20.43
100 to 199	142	19,369	7,368	2.7	8.5	9,675	14.20	19.71
200 to 299	252	22,571	9,460	2.5	8.9	9,270	13.83	17.83
300 to 399	351	22,902	9,058	2.1	7.9	7,712	13.47	16.80
400 to 599	469	22,886	9,316	2.4	8.9	8,772	13.39	17.01
600 & over	1,019	24,024	11,310	1.9	7.5	7,945	14.23	17.04

Bovine somatotropin (bST) was used to a greater extent on the large herd farms. bST was used consistently during 2007 on 12 percent of the herds with less than 100 cows, 30 percent of the farms with 100 to 299 cows and on 63 percent of the farms with 300 cows and more.

Milk output per worker has always shown a strong correlation with net farm income. The farms with 100 cows or more averaged over 930,240 pounds of milk sold per worker while the farms with less than 100 cows averaged less than 479,000 pounds per worker.

In achieving the highest productivity per cow and per worker, the largest farms had the fewest crop acres per cow and below average forage dry matter harvested per cow. However, the larger farms generally purchased more roughage per cow. The largest farms had the most efficient use of farm capital with an average investment of $7,945 per cow.

The 17 farms with 300-399 cows had the lowest total cost of producing milk at $16.80 per hundredweight. The 53 farms with more than 600 cows held their average total costs of producing milk to $17.04 per hundredweight, $2.54 below the $19.58 average for the remaining 197 dairy farms. The lower average costs of production plus a similar milk price gave the managers of the largest dairy farms profit margins (milk price less total cost of producing milk) that averaged $0.93 per hundredweight above the average of the other 197 DFBS farms. All but the two lowest herd size categories averaged a positive profit margin in 2007.

Ten-Year Comparisons

The total cost of producing milk on DFBS farms has increased $3.23 per hundredweight over the past 10 years (Table 7-3). In the intervening years, total cost of production decreased 1998 through 1999, increased in 2000 and 2001, fell in 2002, again increased in 2003 and 2004, decreased in 2005 and 2006, and increased in 2007. It is interesting to note that costs of production decrease in low milk price years and increase in high milk price years. Over the 10 years, milk sold per cow and cows per worker increased 10 percent on DFBS farms (Table 7-4). Farm net worth has increased significantly, while percent equity has been fairly stable.

Table 7-3. TEN YEAR COMPARISON: AVERAGE COST OF PRODUCING MILK PER HUNDREDWEIGHT
New York Dairy Farms, 1998 to 2007

Item	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Operating Expenses										
Hired labor	$2.06	$2.14	$2.25	$2.41	$2.44	$2.51	$2.67	$2.66	$2.58	$2.70
Purchased feed	4.18	3.96	3.91	4.25	4.10	4.29	4.88	4.37	4.30	5.21
Machinery repair, vehicle expense & rent	1.12	1.18	1.06	1.21	1.01	.91	1.09	1.07	1.04	1.27
Fuel, oil & grease	.25	.24	.34	.32	.28	.33	.41	.53	.58	.67
Replacement livestock	.24	.24	.23	.20	.16	.15	.16	.11	.07	.07
Breeding fees	.16	.17	.17	.19	.21	.19	.21	.22	.23	.24
Veterinary & medicine	.45	.47	.51	.54	.56	.56	.59	.62	.65	.65
Milk marketing	.53	.49	.69	.63	.65	.69	.72	.76	.80	.80
Other dairy expenses	1.09	1.13	1.16	1.26	1.25	1.30	1.27	1.32	1.29	1.41
Fertilizer & lime	.35	.35	.29	.33	.27	.26	.30	.34	.31	.40
Seeds & plants	.22	.20	.19	.20	.20	.20	.24	.22	.23	.28
Spray & other crop expense	.24	.24	.22	.25	.22	.19	.20	.19	.19	.25
Land, building & fence repair	.27	.27	.21	.26	.19	.14	.21	.25	.22	.32
Taxes	.21	.21	.20	.21	.20	.21	.22	.23	.21	.23
Insurance	.17	.16	.16	.14	.16	.15	.16	.16	.17	.19
Utilities (farm share)	.32	.31	.32	.33	.34	.34	.36	.39	.41	.44
Interest paid	.89	.83	.95	.82	.61	.56	.57	.65	.78	.83
Misc. (including rent)	.41	.44	.45	.42	.44	.40	.43	.37	.45	.49
Total Operating Expenses	$13.15	$13.02	$13.31	$13.98	$13.27	$13.39	$14.67	$14.54	$14.51	$16.46
Less: Nonmilk cash receipts	1.18	1.44	1.83	1.49	1.91	1.57	1.70	1.96	1.94	1.75
Increase in grown feed & supplies	.25	.25	.11	.10	.12	.27	.17	.12	.22	.39
Increase in livestock	.22	.11	.06	.52	.23	.09	.22	.21	.27	.30
OPERATING COST OF MILK PRODUCTION	$11.50	$11.22	$11.31	$11.87	$11.01	$11.46	$12.58	$12.25	$12.08	$14.02
Overhead Expenses										
Depreciation: machinery & buildings	$1.08	$1.14	$1.20	$1.30	$1.39	$1.23	$1.32	$1.32	$1.26	$1.32
Unpaid labor	.11	.11	.10	.10	.08	.10	.07	.06	.07	.07
Operator(s) labor [a]	.74	.80	.79	.74	.74	.70	.67	.61	.63	.65
Operator(s) management (5% of cash receipts)	.82	.83	.76	.87	.75	.73	.90	.90	.79	1.07
Interest on farm equity capital (5%)	.85	.86	.88	.91	.89	.85	.92	1.02	1.06	1.20
Total Overhead Expenses	$3.60	$3.74	$3.73	$3.92	$3.85	$3.61	$3.88	$3.91	$3.81	$4.31
TOTAL COST OF MILK PRODUCTION	$15.10	$14.96	$15.04	$15.79	$14.86	$15.07	$16.46	$16.16	$15.89	$18.33
AVERAGE FARM PRICE OF MILK	$15.60	$14.91	$13.38	$15.98	$12.98	$13.24	$16.64	$15.98	$13.85	$20.34
Return per cwt. to operator labor, capital & mgmt.	$2.91	$2.44	$0.77	$2.71	$0.50	$0.45	$2.67	$2.35	$0.44	$4.93
Rate of return on farm equity capital	8.0%	4.7%	-4.4%	6.0%	-5.6%	-5.7%	6.0%	4.1%	-4.6%	13.4%

[a] 1998 = $1,600/month, 1999 = $1,800/month, 2000 = $1,900/month, 2001 = $2,000/month, 2002 = $2,100/month, 2003 through 2005 = $2,200/month, 2006 = $2,300/month, and 2007 = $2,400/month of operator labor.

TABLE 7-4. TEN YEAR COMPARISON: SELECTED BUSINESS FACTORS
New York Dairy Farms, 1998 to 2007

Item	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Number of farms	305	314	294	228	219	201	200	225	240	250
Cropping Program										
Total tillable acres	497	516	566	618	660	659	701	729	730	758
Tillable acres rented	232	234	262	290	337	323	345	365	360	385
Hay crop acres	239	248	274	302	323	321	339	361	366	364
Corn silage acres	175	186	192	210	232	233	245	246	249	258
Hay crop, tons DM/acre	3.1	2.9	3.3	2.8	3.1	3.2	3.5	3.2	3.2	3.0
Corn silage, tons/acre	18.0	16.3	15.1	16.5	15.4	17.2	17.7	18.8	18.4	18.9
Fertilizer & lime exp./till. acre	$31	$32	$27	$32	$27	$28	$31	$33	$30	$40
Machinery cost/cow	$471	$502	$513	$554	$520	$497	$565	$624	$618	$708
Dairy Analysis										
Number of cows	210	224	246	277	297	314	334	340	350	358
Number of heifers	155	164	186	207	226	240	260	270	283	289
Milk sold, cwt.	43,954	47,932	52,871	60,290	66,177	70,105	73,767	78,250	80,862	82,315
Milk sold/cow, lbs.	20,900	21,439	21,516	21,762	22,312	22,302	22,070	22,998	23,083	22,983
Purchased dairy feed/cwt.	$4.18	$3.96	$3.91	$4.25	$4.10	$4.27	$4.86	$4.37	$4.29	$5.20
Purchased grain & concentrate as % of milk	26%	25%	27%	25%	30%	30%	27%	26%	29%	24%
Purchased feed & crop expense/cwt. milk	$5.00	$4.75	$4.61	$5.03	$4.79	$4.92	$5.60	$5.12	$5.02	$6.13
Capital Efficiency										
Farm capital/cow	$6,161	$6,368	$6,535	$6,755	$6,794	$6,748	$7,010	$7,508	$7,762	$8,426
Real estate/cow	$2,537	$2,562	$2,615	$2,713	$2,612	$2,722	$2,809	$2,950	$3,030	$3,356
Machinery investment/cow	$1,118	$1,163	$1,225	$1,222	$1,261	$1,208	$1,226	$1,314	$1,384	$1,448
Asset turnover ratio	0.61	0.59	0.54	0.63	0.53	0.54	0.64	0.60	0.52	0.67
Labor Efficiency										
Worker equivalent	5.35	5.71	6.11	6.72	7.21	7.50	7.97	8.18	8.19	8.40
Operator/manager equiv.	1.62	1.76	1.83	1.94	1.82	1.86	1.64	1.60	1.63	1.62
Milk sold/worker, lbs.	821,565	839,432	865,325	897,167	917,854	934,733	925,553	956,698	987,530	980,234
Cows/worker	39	39	40	41	41	42	42	42	43	43
Labor cost/cow	$609	$653	$674	$706	$725	$738	$752	$765	$757	$784
Hired labor exp./hired worker equiv.	$31,092	$27,910	$29,309	$31,448	$31,755	$32,659	$33,311	$33,539	$34,071	$34,924
Profitability & Financial Analysis										
Labor & mgmt. income/operator	$55,917	$42,942	$-2,908	$45,479	$-14,243	$-15,360	$78,061	$64,745	$-31,269	$189,019
Farm net worth, end year	$798,297	$865,626	$942,881	$ 1,181,055	$ 1,173,836	$1,207,964	$1,466,674	$1,690,427	$1,736,505	$2,200,655
Percent equity	59%	58%	57%	60%	57%	56%	60%	63%	62%	68%

Dairy Operations and Milk Cow Inventory

TABLE 7-5. NUMBER OF DAIRY FARMS AND MILK COWS BY SIZE OF HERD
New York State, 2007 [a, b]

Size of Herd	Farms		Milk Cows	
Number of Cows	Number	% of Total	Number	% of Total
1 - 29	1,300	21.0%	12,500	2.0%
30-49	1,300	21.0%	50,000	8.0%
50-99	2,100	33.9%	138,000	22.0%
100-199	890	14.3%	113,000	18.0%
200-499	410	6.6%	125,000	20.0%
500-749	95	1.5%	56,000	9.0%
750-999	43	0.7%	34,500	5.5%
1000-1499	38	0.6%	44,000	7.0%
1500 - 1999	9	0.15%	14,000	2.2%
2000 or more	15	0.25%	40,000	6.3%
Total	6,200	100.0%	627,000	100.0%

[a] This information on number of farms and number of cows by size of herd is derived from several sources:
- Dairy Statistics as published by the New York Agricultural Statistics Services for 2007.
- CAFO (Concentrated Animal Feeding Operations) permit reports for 2007. Some small CAFO farms (farms with 200 to 700 milk cows) have not applied for or updated the permit. Estimates for these farms were made so as to reflect the total number of dairy farms in New York State.

[b] The author wishes to thank everyone who provided some data as well as providing valuable advice and perspectives: Lee Telega, Jacqueline Lendrum, and B. F. Stanton. However, any errors, omissions or misstatements are solely the responsibility of the author, Professor George Conneman, **e-mail gjc4@cornell.edu**.

In 2007, there were 6,200 dairy farms in New York State, and 627,000 milk cows as reported by the NYASS. The table above was prepared based on the NYASS data plus the CAFO permit filing for additional herd size categories.

Ninety percent of the farms (less than 200 cows per farm) had 50 percent of the milk cows. The remaining ten percent of the farms had 50 percent of the cows.

About 3 percent of the farms (those with 500 or more cows) had 30 percent of the cows.

Farms with less than 50 cows represent 42 percent of all farms but kept only 10 percent of the cows.

Farms with 1,000 or more cows represent about 1 percent of the farms but kept over 15 percent of the cows.

TABLE 7-6. CHANGE IN NUMBER OF DAIRY FARMS BY SIZE OF HERD
New York State, 1960 to 2007

Size of Herd (Number of Cows)	Year											
	1960[a]	1965[a]	1970[a]	1975[a]	1980	1985	1990	1995	2000	2005	2006	2007
1 – 29	23,650	13,700	9,425	7,000	6,080	5,000	2,650	2,100	1,400	1,400	1,300	1,300
30 - 49	12,450	11,750	11,000	7,350	5,420	4,550	3,150	2,200	1,500	1,300	1,300	1,300
50 - 99	3,700	4,450	5,800	6,500	6,080	5,100	5,300	4,000	3,000	2,500	2,300	2,100
100 - 199	375	550	675	1,000	1,220[b]	1,550[b]	1,500[b]	1,300	1,400	890	920	890
200 +	25	50	100	150	200[b]	300[b]	400[b]	400	600	610	580	610
Total	40,200	30,500	27,000	22,000	19,000	16,500	13,000	10,000	7,900	6,700	6,400	6,200
Number of cows (thousands)	1,180	1,090	950	905	910	942	760	710	686	648	638	627
Average size of herd (milk cows)	29	36	35	41	48	57	58	71	87	97	100	101

Sources: New York Agricultural Statistics Service; [a] Cornell Producer Panel of Dairy Farms. [b] Estimates by G. J. Conneman.

Since 1960 the number of dairy farm units has decreased from 40,200 to 6,200, a decline of 85 percent. Total number of cows in the State has declined 47 percent from 1,180,000 to 627,000.

Average size of farm increased from 29 cows per farm in 1960 to 101 cows per farm in 2007.

TABLE 7-7. FORTY YEARS OF CHANGES ON DAIRY FARMS
New York State, 1965 to 2005

Item	Year				
	1965	1975	1985	1995	2005
SIZE OF DAIRY BUSINESS					
Number of dairy farms	30,500	22,000	16,500	10,000	6,700
Farms with:					
Less than 50 cows	25,450	14,350	9,550	4,300	2,700
200 or more cows	50	150	300	400	610
Number of milk cows (thousand head)	1,090	905	942	710	648
Total milk production (billion pounds)	11.0	10.0	11.7	11.6	12.1
Cows per farm	36	41	57	71	97
PRODUCTIVITY					
Milk sold per cow, lbs.	10,100	11,000	12,400	16,300	18,700
Milk sold per farm, lbs.	361,000	455,000	709,000	1,160,000	1,806,000
Worker equivalent per farm	2.0	2.2	2.5	2.7	3.0
Milk sold per worker, lbs.	180,000	207,000	284,000	430,000	602,000
Cows per worker	18	19	23	26	32
Price of milk, $/cwt.	$4.39	$8.75	$12.80	$13.00	$15.90
Hay, all, per acre, tons	1.9	2.2	2.4	2.2	2.0
Hay, alfalfa, per acre, tons	NA	2.6	2.8	2.7	2.5
Corn silage, per acre, tons	12.6	12.9	14.0	15.0	16.5
Corn grain, per acre, bushels	70	82	97	108	123

Sources: New York Agricultural Statistics Service; Cornell Producer Panel of Dairy Farms; estimates by G. J. Conneman

During the past 40 years (1965 to 2005) there have been dramatic changes on New York dairy farms in the number of farms, milk cows, production levels and efficiency of operations.

The number of dairy farms decreased from 30,500 in 1965 to 6,700 in 2005, a decrease of 78 percent. The average size of farm increased from 36 cows to 97 cows.

The number of dairy cows in 2005 was 648,000 head, a decrease of 41 percent from 1965. However, the total amount of milk produced increased from 11.0 billion pounds to 12.1 billion pounds as production per cow moved from 10,100 to 18,700 pounds, an increase of 85 percent in production per cow.

Efficiency of production (as measured by milk sold per worker) increased from 180,000 pounds to 602,000 pounds, more than a tripling; cows per worker increased from 18 to 32 during the 40-year period.

The number of farms with less than 50 cows decreased from 25,450 to 2,700; those with 200 or more cows increased from 50 to 610.

TABLE 7-8. COMPARISON OF FARM BUSINESS SUMMARY DATA
Same 54 New York Dairy Farms, 1998- 2007

Selected Factors	1998	1999	2000	2001
Milk receipts per cwt. milk	$15.73	$15.22	$13.41	$15.92
Size of Business				
Average number of cows	289	307	325	351
Average number of heifers	224	230	245	266
Milk sold, cwt.	62,788	68,828	72,884	78,470
Worker equivalent	7.01	7.37	7.58	8.17
Total tillable acres	615	645	665	698
Rates of Production				
Milk sold per cow, lbs.	21,693	22,409	22,403	22,337
Hay DM per acre, tons	3.5	3.3	3.8	3.2
Corn silage per acre, tons	23	17	16	17
Labor Efficiency				
Cows per worker	41	42	43	43
Milk sold per worker, lbs.	895,694	933,892	961,528	960,462
Cost Control				
Grain & concentrate purchased as % of milk sales	25%	24%	27%	25%
Dairy feed & crop expense per cwt. milk	$4.96	$4.69	$4.54	$4.90
Operating cost of producing cwt. milk	$11.36	$11.07	$11.23	$12.31
Total cost of producing cwt. milk	$14.27	$12.29	$14.18	$15.38
Hired labor cost per cwt.	$2.26	$2.33	$2.39	$2.60
Interest paid per cwt.	$0.88	$0.77	$0.91	$0.80
Labor & machinery costs per cow	$1,115	$1,190	$1,206	$1,286
Replacement livestock expense	$13,446	$14,798	$19,061	$13,785
Expansion livestock expense	$19,795	$18,402	$31,469	$36,592
Capital Efficiency				
Farm capital per cow	$6,343	$6,531	$6,653	$6,653
Machinery & equipment per cow	$1,220	$1,256	$1,288	$1,268
Real estate per cow	$2,489	$2,505	$2,488	$2,508
Livestock investment per cow	$1,517	$1,541	$1,602	$1,689
Asset turnover ratio	0.63	0.62	0.56	0.65
Profitability				
Net farm income without appreciation	$200,089	$201,962	$68,769	$177,610
Net farm income with appreciation	$244,451	$245,480	$120,631	$281,345
Labor & management income per operator/manager	$93,506	$87,181	$1,007	$62,132
Rate return on:				
Equity capital with appreciation	18.0%	15.7%	4.6%	15.7%
All capital with appreciation	13.3%	11.9%	5.8%	11.9%
All capital without appreciation	10.9%	9.7%	3.4%	7.5%
Financial Summary, End Year				
Farm net worth	$1,134,504	$1,249,460	$1,271,138	$1,462,927
Change in net worth with appreciation	$171,007	$129,660	$16,515	$179,895
Debt to asset ratio	0.41	0.41	0.40	0.40
Farm debt per cow	$2,671	$2,720	$2,732	$2,747

Farms participating in the DFBS each of the last 10 years have increased size of business, labor efficiency and milk sold per cow (Table 7-8). All measures of profitability exhibit wide variability from year-to-year and are highly correlated with milk price received.

TABLE 7-8. COMPARISON OF FARM BUSINESS SUMMARY DATA (Continued)
Same 54 New York Dairy Farms, 1998 - 2007

2002	2003	2004	2005	2006	2007
$12.96	$13.24	$16.57	$16.04	$13.89	$20.35
369	389	400	412	425	426
287	302	312	333	346	351
84,823	88,895	90,308	96,441	98,595	99,037
8.55	9.08	9.46	9.58	9.58	9.79
726	760	815	844	873	884
22,960	22,824	22,576	23,426	23,218	23,230
3.4	3.2	3.5	3.6	3.3	3.2
16	18	18	19	19	19
43	43	42	43	44	44
992,087	979,019	954,629	1,006,688	1,029,179	1,011,610
30%	30%	27%	26%	30%	25%
$4.77	$5.01	$5.26	$5.18	$5.05	$6.23
$11.15	$11.49	$12.45	$12.17	$12.17	$14.23
$14.20	$14.30	$15.36	$15.22	$15.19	$17.51
$2.66	$2.68	$2.80	$2.69	$2.72	$2.90
$0.61	$0.53	$0.55	$0.61	$0.79	$0.80
$1,292	$1,255	$1,322	$1,379	$1,519	$1,519
$11,031	$16,173	$14,146	$14,649	$9,705	$13,173
$14,918	$15,252	$18,632	$15,401	$23,678	$4,691
$6,738	$6,589	$6,874	$7,281	$7,515	$8,175
$1,279	$1,227	$1,263	$1,345	$1,378	$1,495
$2,527	$2,496	$2,572	$2,653	$2,765	$2,940
$1,779	$1,773	$1,851	$1,961	$2,053	$2,236
0.54	0.56	0.66	0.63	0.54	0.70
$32,484	$44,235	$255,811	$241,313	$43,061	$471,387
$83,116	$107,244	$374,740	$356,409	$125,186	$643,289
$-26,854	$-21,676	$111,819	$92,100	$-38,968	$221,206
1.3%	2.9%	19.2%	15.4%	2.7%	25.0%
2.8%	3.5%	13.1%	11.5%	4.1%	18.5%
0.8%	1.2%	8.7%	7.7%	1.5%	13.6%
$1.446.864	$1,486,533	$1,752,054	$1,991,647	$2,005,569	$2,516,182
$-27,066	$35,852	$278,514	$246,462	$13,631	$496,199
0.42	0.44	0.39	0.36	0.39	0.33
$2,817	$2,942	$2,766	$2,713	$2,908	$2,858

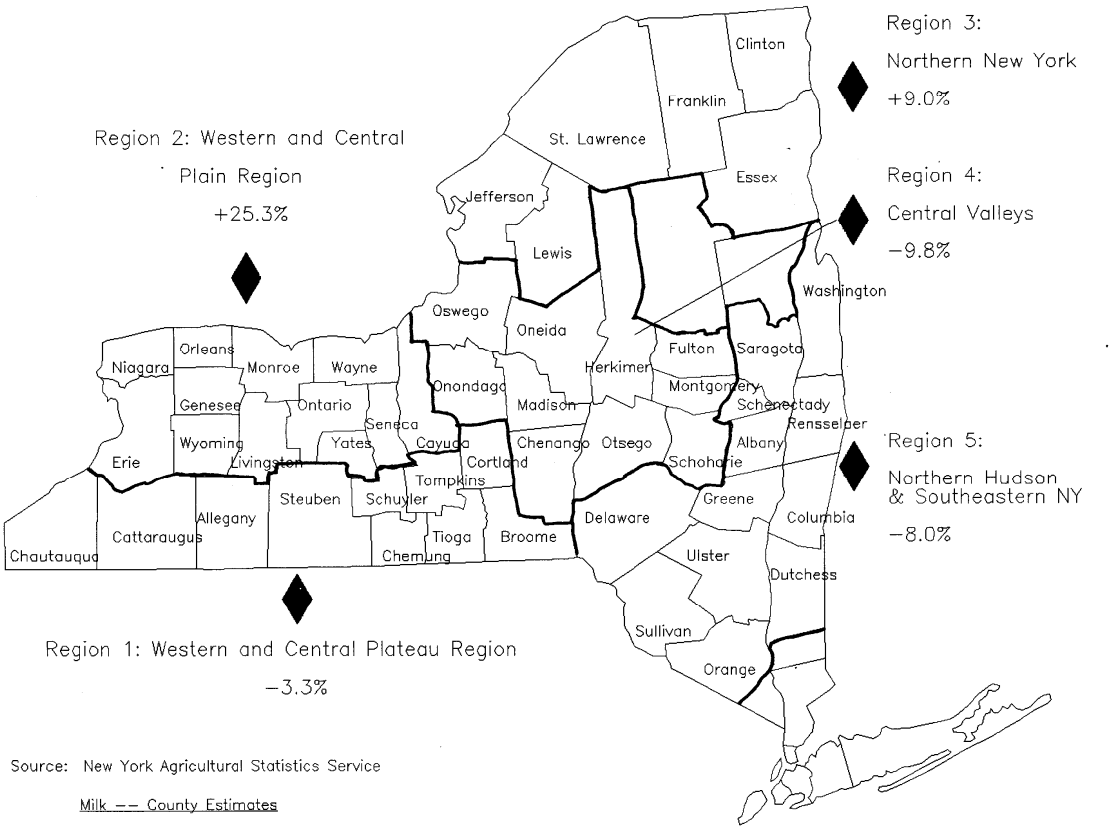
Debt to asset ratio and debt per cow have remained stable while farm net worth more than doubled. During this time, crop yields have fluctuated, largely due to weather. Purchased grain and concentrate as a percent of milk sales varied only from 24 to 30 percent, with the high in 2002, 2003 and 2006, and the low in 1999.

TABLE 7-9. COMPARISON OF DAIRY FARM BUSINESS DATA BY REGION
250 New York Dairy Farms, 2007

Item	Western & Central Plateau Region	Western & Central Plain Region	Northern New York	Central Valleys	Northern Hudson & South-eastern New York
Number of farms	40	64	39	35	72
ACCRUAL EXPENSES					
Hired labor	$82,457	$471,796	$207,807	$148,298	$121,207
Feed	192,093	804,541	453,063	321,877	265,544
Machinery	75,554	280,866	160,715	138,013	108,870
Livestock	107,931	507,080	273,697	183,196	161,838
Crops	33,401	133,381	74,889	78,171	48,945
Real estate	33,730	136,709	62,006	55,904	36,785
Other	63,944	262,198	141,715	115,257	76,227
Total Operating Expenses	$589,110	$2,596,571	$1,373,893	$1,040,717	$819,415
Expansion livestock	6,936	10,931	19,901	15,247	4,443
Extraordinary expense	793	905	1,236	0	106
Machinery depreciation	41,787	133,505	68,847	53,693	30,501
Building depreciation	16,336	81,329	51,329	28,143	19,210
Total Accrual Expenses	$654,963	$2,823,241	$1,516,205	$1,137,800	$873,675
ACCRUAL RECEIPTS					
Milk sales	$768,738	$3,178,014	$1,741,309	$1,330,254	$971,254
Livestock	53,753	199,520	117,354	93,670	64,447
Crops	18,638	70,834	60,565	54,502	38,452
Government receipts	13,423	41,204	23,174	23,348	18,131
All other	11,920	54,297	19,577	27,471	17,762
Total Accrual Receipts	$866,472	$3,543,869	$1,961,978	$1,526,514	$1,110,046
PROFITABILITY ANALYSIS					
Net farm income (w/o appreciation)	$211,509	$720,628	$455,773	$388,714	$236,370
Net farm income (w/ appreciation)	$268,500	$1,022,512	$575,523	$503,443	$317,322
Labor & management income	$151,276	$558,497	$338,111	$291,828	$157,741
Number of operators	1.46	1.79	1.75	1.76	1.42
Labor & mgmt. income/oper.	$103,613	$312,010	$193,206	$165,812	$111,085
BUSINESS FACTORS					
Worker equivalent	4.44	14.36	8.61	6.97	5.87
Number of cows	168	673	372	289	210
Number of heifers	135	537	295	238	175
Acres of hay crops[a]	246	506	444	327	278
Acres of corn silage[a]	111	447	283	206	184
Total tillable acres	417	1,241	848	707	495
Pounds of milk sold	3,727,555	15,816,491	8,680,284	6,404,857	4,636,394
Pounds of milk sold/cow	22,204	23,518	23,313	22,140	22,055
Tons hay crop dry matter/acre	2.4	3.3	3.1	3.2	2.8
Tons corn silage/acre	19.8	18.3	20.9	19.3	18.1
Cows/worker	38	47	43	42	36
Pounds of milk sold/worker	839,382	1,101,363	1,008,456	918,808	789,509
% grain & conc. of milk receipts	24%	23%	23%	23%	27%
Feed & crop expense/cwt. milk	$6.05	$5.92	$6.06	$6.24	$6.78
Fertilizer & lime/crop acre	$39.74	$46.61	$28.39	$39.76	$40.63
Machinery cost/tillable acre	$316	$365	$302	$306	$314

[a]Excludes farms that do not harvest forages.

FIGURE 7-1. PERCENT CHANGE IN MILK PRODUCTION
Five Regions in New York, 1997-2007



Source: New York Agricultural Statistics Service
Milk -- County Estimates

TABLE 7-10. MILK PRODUCTION & AVERAGE COST OF PRODUCING MILK
Five Regions of New York

Item	Region[a] 1	2	3	4	5
Milk Production[b]			(million pounds)		
1997	2,064.9	3,231.8	2,196.5	2,616.9	1,398.4
2007	1,996.5	4,050.5	2,393.5	2,360.0	1,286.0
Percent change	-3.3%	+25.3%	+9.0%	-9.8%	-8.0%
2007 Cost of Producing Milk[c]			($ per hundredweight milk)		
Operating cost	$13.37	$14.17	$13.51	$13.42	$14.78
Total cost	18.03	17.16	17.04	17.33	18.63
Average price received	20.62	20.09	20.06	20.77	20.95
Return per cwt. to operator labor, management & capital	$5.50	$4.53	$5.09	$5.98	$4.94

[a]See Figure 7-1 for region descriptions.
[b]Source: New York Agricultural Statistics Service, Milk-County Estimates.
[c] From Dairy Farm Business Summary data.

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 250 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 top 10 percent for any other factor.

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

TABLE 7-11. FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS
250 New York Dairy Farms, 2007

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
28.1	1,314	32,322,710	26,645	5.2	26	61	1,309,445
17.1	773	18,291,548	24,891	4.0	23	50	1,121,656
11.9	494	11,182,833	23,916	3.5	21	46	1,026,711
8.1	346	7,739,127	23,029	3.1	20	43	943,700
5.2	217	4,765,001	21,916	2.8	19	40	849,317
4.0	149	2,798,701	20,742	2.6	18	36	764,401
3.2	108	2,051,550	19,708	2.4	17	34	662,962
2.7	80	1,444,394	18,062	2.1	16	30	569,954
2.2	60	1,035,063	15,732	1.8	15	25	454,811
1.6	41	684,234	12,412	1.2	12	20	314,396

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
$515	15%	$430	$1,088	$705	$4.28
726	19	551	1,294	948	4.96
814	20	605	1,373	1,067	5.45
894	22	648	1,436	1,160	5.77
991	23	700	1,513	1,262	5.95
1,066	25	757	1,595	1,341	6.22
1,134	26	821	1,693	1,426	6.60
1,205	27	899	1,817	1,511	7.00
1,305	29	995	2,020	1,609	7.44
1,492	35	1,251	2,388	1,831	9.03

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

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

TABLE 7-11. (CONTINUED) FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS
250 New York Dairy Farms, 2007

Milk Receipts Per Cow	Milk Receipts Per Cwt.	Operating Cost Milk Production Per Cow	Operating Cost Milk Production Per Cwt.	Total Cost Milk Production Per Cow	Total Cost Milk Prod. Per Cwt.
$5,473	$22.53	$1,631	$9.70	$2,801	$14.86
5,036	21.38	2,096	11.55	3,306	16.34
4,850	20.97	2,385	12.46	3,536	16.99
4,689	20.70	2,632	12.97	3,708	17.60
4,473	20.48	2,812	13.56	3,885	18.16
4,247	20.32	2,990	14.03	4,024	18.91
4,002	20.12	3,139	14.57	4,173	19.99
3,719	19.87	3,353	15.44	4,351	21.53
3,252	19.62	3,627	16.41	4,566	23.15
2,599	19.04	4,077	19.13	5,111	28.29

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
$1,658,164	$1,985	0.37	$2,258,907	$2,580	$1,350,735	$828,820
881,033	1,602	0.31	1,159,819	2,039	690,457	422,319
593,261	1,424	0.28	786,149	1,861	459,165	250,521
385,119	1,262	0.26	537,897	1,674	267,642	163,957
227,152	1,131	0.23	323,558	1,540	154,444	94,290
142,549	1,021	0.21	182,217	1,407	91,721	57,044
102,171	909	0.19	131,539	1,231	56,345	42,053
68,086	722	0.16	97,870	987	30,338	23,345
43,034	467	0.11	63,898	733	2,284	1,427
3,007	67	0.01	21,902	280	-41,030	-36,506

Financial Analysis Chart

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

TABLE 7-12. FINANCIAL ANALYSIS CHART
250 New York Dairy Farms, 2007

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
$92	$1,522	6.22	9.80	2%	$203	55%	36.91
233	1,106	2.82	4.47	6	992	38	5.77
315	977	2.24	3.60	8	1,678	30	4.12
387	881	1.91	3.09	10	2,100	26	3.23
454	813	1.65	2.74	11	2,515	23	2.59
517	737	1.44	2.29	12	2,881	19	2.21
566	655	1.26	1.88	13	3,265	14	1.83
626	534	1.08	1.60	15	3,711	10	1.52
735	377	0.84	1.11	19	4,170	4	1.07
1,007	-5	-0.08	0.02	28	5,777	-12	0.49

Solvency				Operational Ratios		
		Debt/Asset Ratio		Operating	Interest	Depreciation
Leverage Ratio[a]	Percent Equity	Current & Intermediate	Long Term	Expense Ratio	Expense Ratio	Expense Ratio
0.02	98%	0.01	0.00	0.54	0.00	0.02
0.11	90	0.09	0.00	0.59	0.01	0.03
0.19	84	0.15	0.01	0.62	0.02	0.04
0.29	78	0.20	0.10	0.65	0.03	0.05
0.36	74	0.25	0.21	0.67	0.03	0.05
0.45	69	0.29	0.29	0.69	0.04	0.06
0.54	65	0.34	0.39	0.71	0.05	0.07
0.67	60	0.42	0.50	0.73	0.05	0.08
0.94	52	0.53	0.63	0.78	0.06	0.10
1.68	39	0.70	0.89	0.87	0.09	0.14

Efficiency (Capital)					Profitability	
Asset Turnover (ratio)	Real Estate Investment Per Cow	Machinery Investment Per Cow	Total Farm Assets Per Cow	Change in Net Worth With Appreciation	Percent Rate of Return with Appreciation on: Equity	Investment[b]
0.95	$1,504	$634	$5,726	$1,980,666	55%	29%
0.78	2,240	876	6,959	969,490	36	24
0.72	2,696	1,111	7,431	612,376	29	21
0.68	3,012	1,358	7,894	396,561	23	18
0.62	3,388	1,559	8,452	238,455	19	15
0.57	3,752	1,792	9,113	137,890	14	12
0.50	4,339	2,003	10,060	98,507	11	10
0.44	5,105	2,256	11,046	69,452	7	7
0.37	6,374	2,599	12,687	37,054	3	4
0.26	10,220	3,766	16,830	-5,198	-7	-2

[a]Dollars of debt per dollar of equity, computed by dividing total liabilities by total equity.
[b]Return on all farm capital (no deduction for interest paid) divided by total farm assets.

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 7-13. PRICES PAID BY NEW YORK FARMERS FOR SELECTED ITEMS, 1993 - 2007

Year	Mixed Dairy Feed 16% Protein[a]	Fertilizer, Urea 45-46%N[a]	Seed Corn, Hybrid[b]	Diesel Fuel[a]	Tractor 50-59 PTO[b]	Wage Rate All Hired Farm Workers[c]
	($/ton)	($/ton)	($/80,000 Kernels)	($/gallon)	($)	($/hour)
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
2000	174	201	87.50	1.270	21,800	8.74
2001	176	270	92.20	1.260	22,000	8.72
2002	178	232	92.00	1.028	21,900	9.26
2003	194	283	102.00	1.516	21,300	9.93
2004	207	299	105.00	1.400	21,500	9.96
2005	190	365	111.00	2.020	23,400	9.88
2006	239	403	118.00	2.355	23,700	10.35
2007	300	480	133.00	3.773	24,300	10.49

SOURCE: NYASS, New York Agricultural Statistics. USDA, NASS, Agricultural Prices.
[a]Northeast region average. [b]United States average. [c]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, and an index of the real estate prices.

TABLE 7-14. VALUES AND INDICES OF NEW YORK DAIRY FARM INVENTORY ITEMS, 1993 - 2007

	Dairy Cows		Machinery[a]	Farm Real Estate[b]	
Year	Value/Head	1977=100	1977=100	Value/Acre	1977=100
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
2000	1,250	253	301	1,430	244
2001	1,600	323	312	1,520	259
2002	1,400	283	320	1,610	274
2003	1,300	263	325	1,700	290
2004	1,580	319	351	1,780	303
2005	1,690	341	373	1,920	327
2006	1,550	313	392	2,050	349
2007	1,930	390	412	2,220	378

SOURCE: NYASS, New York Agricultural Statistics and New York Crop and Livestock Report. USDA, ASB, Agricultural Prices.
[a]United States average; 1995 - 2007 are estimated due to discontinuation of 1977=100 series.
[b]New York average for 2000 – 2007 excludes Native American reservation land.

Chapter 8: Labor Outlook for New York Agriculture 2009

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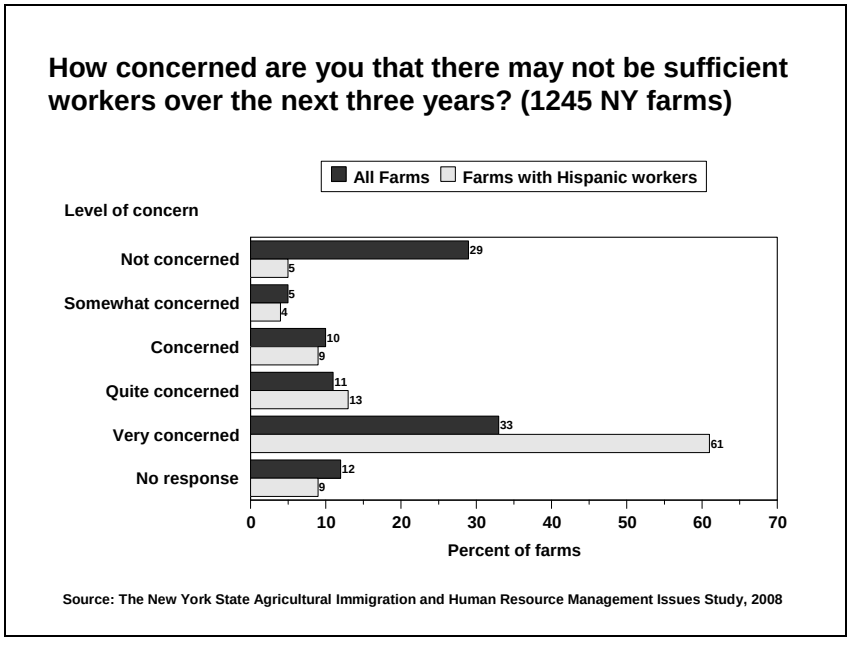
Mary Jo Dudley

Overview

New York State farm owners and agricultural representatives generally report that labor supplies were adequate in 2008 and in some cases farm managers had more applicants looking for work than they had jobs to fill. However, there continues to be considerable uncertainty over agricultural labor supplies largely due to persistent immigration enforcement activities. The presence of unauthorized workers on New York State farms is exacerbated by the fact that immigrants can easily purchase Social Security cards and present these fraudulent documents to their employers at the time of hire. Many farm managers fear that an immigration raid would substantially disrupt business during critical work periods. These concerns are compounded by the perceived scarcity of skilled agricultural labor. In late 2007 the New York State Department of Agriculture and Markets and New York State Agricultural Statistics Service collaborated with Cornell University to survey 1245 fruit, vegetable and dairy farmers in New York State on agricultural labor issues. Farm owners were asked how concerned they were about labor supplies over the next three years. Figure 8-1 shows the high level of concern among those surveyed and a particularly high level of concern among those farm owners who employ Hispanic workers.

FIGURE 8-1. FARM OWNER VIEWS ON LABOR AVAILABILITY, NEXT THREE YEARS



[1] The authors are Senior Extension Associate in the Cornell Applied Economics and Management Department (AEM), Extension Associate in AEM, and Director of the Cornell Farmworker Program in the Cornell Department of Development Sociology, respectively.

When considering the general outlook for agricultural labor in New York State it is also important to recognize that the economy is slowing and unemployment is increasing making more workers potentially available in various parts of the state. This appears to be particularly true in western New York. However, it is unclear if the newly unemployed will be willing and able to do farm work. Agricultural employers also express concern about the investment required to train workers who are unfamiliar with the physical demands of agricultural labor.

Agricultural Labor Supply Uncertainty Due to Immigration Enforcement

While agricultural labor supplies appear adequate or better, there remains a great deal of uncertainty and anxiety over increasing immigration enforcement activities. The PEW Hispanic center in 2006 reported that 4% of the unauthorized workers in the United States worked in agriculture (Passel 2006). Other sectors such as construction, service industries, hospitality and others employ an even greater percentage of the unauthorized workforce nationwide.

The detention and deportation of agricultural workers in New York State appears to have increased in 2008 as indicated by farm manager reports, farm worker reports and media coverage. Perhaps the biggest reason for the perceived high level of enforcement activity is that New York is a border state and therefore has a higher number of immigration enforcement officials than non-border states. In addition, the Buffalo Federal Detention Center in Batavia, New York houses a 500+ bed facility for housing detained immigrants. Ongoing immigration raids, detention activities and deportation have been reported in western as well as northern New York over the past year.

The Impact of the H-2A Program

The H-2A program is a national program providing seasonal workers for agricultural jobs. The program used primarily by fruit and vegetable growers was initiated in 1952. Table 8.1 shows the number of H-2A workers in New York over the past 6 years.

TABLE 8-1. NUMBER OF H-2A WORKERS IN NEW YORK 2002-2007

H-2A Workers in New York at Peak Season	
Year	Number of Workers
2002	1,413
2003	1,704
2004	1,825
2005	1,742
2006	2,105
2007	2,491
Source: Reports of Domestic Migrant-Seasonal Foreign Hired Agricultural Workers 1999-2006, New York State Department of Labor, 2007 Annual Report New York State Dept of Labor	

It is important to note the increases in the number of H-2A workers hired in New York over the last several years. As immigration enforcement has increased some farm employers have turned to H-2A to ensure that their workers are legal and will be available at critical production and harvest periods.

Still, H-2A workers represent only a small percentage of the seasonal workers in New York agriculture. In the past many farm managers were reluctant to use the program for three

reasons. First, the wage rate is generally set at a level considerably higher than the minimum wage. In 2008 the wage rate was set at $9.70 per hour. Second, farm employers often feel there is too much paperwork and bureaucracy in the program adding to administrative overhead and sometimes delaying workers' arrival. Third, current regulations require the employer to provide housing for H-2A employees. This can be difficult in areas of the state where housing is scarce, and employer provided housing adds an additional expense to using the program. Despite these challenges, participation by New York State farmers is likely to continue to increase as long as immigration enforcement activities persist.

In recent years there have been numerous legislative proposals to change the H-2A program and make it easier to use. The most notable example is Title II of the AgJOBS Bill. It is also important to note that the most recent version of the AgJOBS bill includes dairy farms in the H-2A program for the first time. If the bill were passed into law this would be a significant benefit to dairy farmers providing some currently unauthorized workers with temporary visas permitting them to continue their work in the dairy industry and creating an optional path to citizenship. The change would also allow dairy employers to hire immigrants under the H-2A program.

Since the H-2A program has a longstanding history, future immigration reform proposals for agriculture are very likely to include a revised and updated version of H-2A rather than eliminate the program all-together. This could come in the form of a bill to simply revise the current program as some legislative proposals have done in the past. A revised program could also come in a more comprehensive bill for agriculture (like AgJOBS) or as part of comprehensive reform.

Immigration Policy Issues Facing Agricultural Employers

Over the past four years Congress has tried and failed to enact comprehensive immigration reform. While separate immigration bills have passed in the House and the Senate, legislators are divided on a workable solution for dealing with the estimated 12 million unauthorized immigrants currently living in the United States. On December 16, 2005 the House of Representatives passed the Border Protection Anti-terrorism and Illegal Immigration Control Act. (HR-4437). The bill proposed multiple enforcement approaches to dealing with unauthorized workers including making illegal presence in the United States a felony. On May 25, 2006 the Senate passed the Comprehensive Immigration Reform Act of 2006 (S-2611). The Senate bill would have provided a path to citizenship and a guest worker program for immigrant workers. Neither of these approaches gained political support and a comprehensive approach to solving the immigration problem is currently stalled.

Several versions of the AgJOBS bill have been reintroduced in Congress over the last 10 years. The bill covers only agricultural employers and would provide important options for agriculture. Title I provides a path to citizenship for immigrants who can demonstrate they worked in agriculture over a specified number of days and years. Title II provides for revisions in the H-2A program. Title II of the bill would streamline the H-2A program and provide a new method for calculating the wage rate, effectively lowering it.

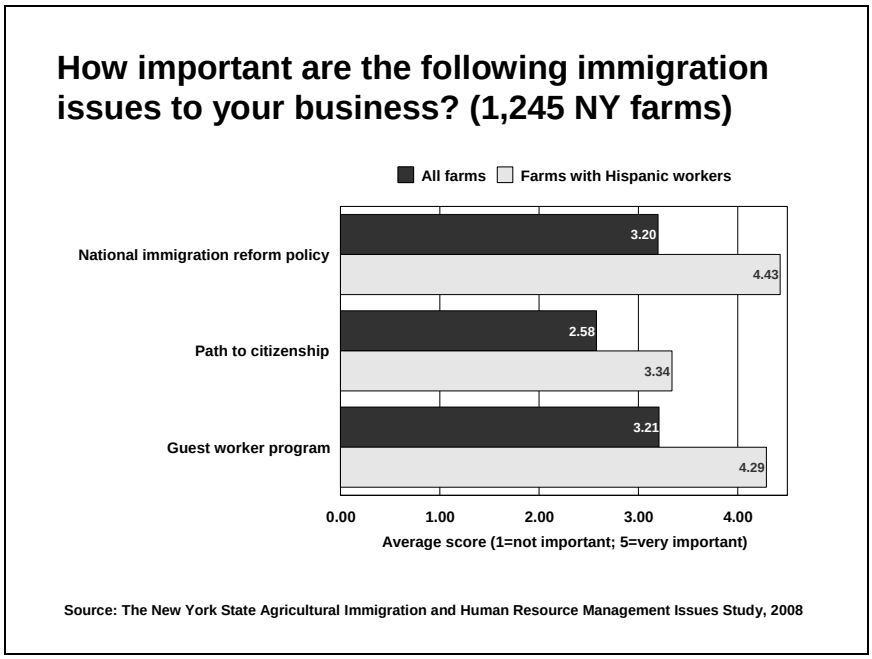
Beginning in August 2007 the Department of Homeland Security attempted to implement new rules for dealing with employee Social Security numbers that do not show up in the social security database. Under the proposed rules an employee must provide verifiably legitimate work authorization documents to the employer within 90 days of receiving the letter. If they fail to do

so the employer must terminate them. Penalties for non-compliance can range up to $11,000 per infraction. These new rules have been delayed from going into effect as a result of court action.

Farm Manager Views Regarding Immigration Reform

In the previously cited survey farm operators were also asked the level of importance they placed on three aspects of immigration reform. Figure 8-2 indicates that farm manager's rated national immigration reform and access to a guest worker program as very high in importance. Less important but still rated highly was a path to citizenship for immigrant workers that are already working on New York State farms.

FIGURE 8-2. RESPONDENT'S VIEWS ON NATIONAL IMMIGRATION



Farm managers generally feel the agricultural workforce would be much more stable if immigration reform were implemented. Reflecting the concerns of farm managers, farm organizations across the state have taken strong immigration policy positions. Many New York State farm organizations provide financial support for the Agriculture Coalition for Immigration Reform (ACIR). ACIR is a Washington, DC based coalition of farm organizations that support immigration reform in agriculture. They have worked very hard on developing and supporting AgJOBS legislation as well as other related legislative initiatives. New York Farm Bureau has also actively supported immigration reform proposals for agriculture.

Immigration Issues Facing Farmworkers

Interviews conducted by the Cornell Farmworker Program with 50 farmworkers from June 2007-August 2008 illustrate the perceived negative influence of the current immigration enforcement environment on farmworkers. The farmworkers surveyed identified immigration reform and information on immigrants' legal rights as their highest priority. Immigrant farmworkers described the substantial challenges related to their unauthorized status and the detrimental influence of those challenges on their physical and mental health and well-being. The

workers reported that they did not feel safe leaving the farm or their home for any reason for fear of being detained or deported. In light of this fear they expressed their inability to independently meet their basic needs or fully function in their new community. The interviews highlight the generalized sense of fear and loss of control among the farmworker population. Most farmworkers interviewed mentioned that since they do not have legally recognized drivers licenses, they rely on others for their transportation needs. Year round unauthorized workers stressed their strong reliance on employers or others to transport them for medical care, grocery and clothes shopping, banking, and to attend social events or religious services. Farmworkers expressed their fear of leaving the farm to seek opportunities for social interactions, English classes, or other activities that could improve their quality of life. Several farmworkers said they primarily limit their off-farm activities to locally organized soccer games that require no transportation and occasional attendance at religious services.

Some migrant farmworkers are recruited by crew leaders and brought to New York. Interviews with workers employed under the crew leader system often reveal a sense of loss of control due to their reliance on crew leaders. Migrants interviewed stated that the crew leader controls almost every aspect of their lives including work assignments, hours, dismissals, housing assignments, paychecks, and off-farm transportation. Unauthorized migrants often mentioned that the crew leader used the threat of calling Immigration and Custom Enforcement to silence labor complaints and disputes about housing or transportation fees deducted from their paycheck. In some camps farmworkers also cited excessive use of physical force by crew leaders and an apparent lack of oversight by authorities.

A primary concern among farmworkers is that an immigration detention has the potential to separate family members. This is particularly important to those immigrant farmworkers who have children born in the United States. In their accounts of various arrests, they also noted that the detainees were not allowed to return to their homes to say goodbye to their family or friends, and they had no opportunity to collect the few belongings they own. They also reported the obstacles they encounter when trying to locate family and friends once they are detained. The Cornell Farmworker Program interviews also pointed to the generalized impression that immigrant farmworkers are pursued because they are from Mexico or Guatemala and are easily identified due to their race.

When asked what would make it possible to remain in agriculture in New York State, there was universal agreement among the respondents that in order to stay, immigration policy would have to change. Even those farmworkers who were in New York State on a guest worker visa made reference to the need to develop a more flexible program for entering and leaving the country, citing their concern over the assignment to a single employer with no option to pursue other opportunities in agriculture.

Farmworker service providers primarily from health and education professions were also interviewed. Service providers even more strongly emphasized the increased role of immigration enforcement on creating an environment of fear among the current farmworker population. They shared accounts of farmworkers afraid to leave their homes because of immigration enforcement and immigration officials waiting outside of churches, clinics, and stores in order to apprehend unauthorized immigrants. They also noted that farmworkers who desire or need to leave the state have few transportation options since immigration officials often detain immigrants at airports and bus and train stations. Several noted that farmworker participation in their services declined drastically as immigration enforcement increased over the last several years, and that on-farm services are often the only services that farmworkers are willing to use.

Farm Management Implication

During the long legislative stalemate on immigration reform and the resulting period of uncertainty created by enforcement activity, New York State's fruit, vegetable and dairy producers have considered and implemented significant adjustments in their management practices and strategic plans for the future. These changes represent classic responses to risk and, depending on how the legislative and enforcement situation continues to unfold, could alter the agricultural economic landscape in New York and nationally in important ways.

With a new Congress and a new Administration in Washington, farm advocates will redouble their efforts to focus on changing the laws that govern labor availability in agriculture. In the meantime, farmers will continue to make major, as well as more routine decisions to keep their businesses viable under existing law.

It is important that farm managers consider a variety of means to alleviate the stress on their businesses caused by the uncertain availability of workers. For example, existing vehicles for documented workers to fill positions in other United States industries, such as the TN visa authorized in the North American Free Trade Agreement (NAFTA), might be adapted to match workers with appropriate skills to agricultural jobs. The serious downturn in the national economy could also present unexpected opportunities. Developing closer ties with regional workforce development agencies so that those agencies can better explain farm opportunities to local job seekers and modifying farm operations to accommodate job candidates from other sectors could also yield positive results.

Three additional options available to farm managers dealing with chronic seasonal and year-round labor supply uncertainty are:

- Substitution of capital for labor (robotics and mechanization)
- Shifting away from labor intensive crops to crops and enterprises less dependent on labor
- Shifting operations to locations where the labor supply is more certain

These alternatives are examined in more depth below.

1. *Capital and Labor*

Uncertainty about the availability of farmworkers has increased risk and effectively driven up the cost of labor for many of New York State's diverse agricultural enterprises. This has led farmers to consider and, in a growing number of cases, adopt labor saving technologies. Investment in automated systems can be expensive and carries its own set of risks with respect to the effective performance of farm production tasks and processes.

Dairy farmers concerned about the availability of immigrant and local workers to milk cows and care for livestock have shown growing interest in automated, or robotic milking systems that could reduce dependence on labor. For some, this is a direct response to their belief that the likelihood of more immigration enforcement raids on farms will lead to the loss of a labor force needed for critical work in round-the-clock operations. In a broader sense, farmers assess further automation of milking systems as part of a perpetual effort to find the optimum balance of equipment, land and buildings, credit, labor, and new technology in order to increase farm profitability. Decisions to adopt and invest in robotic systems will depend on a host of factors,

including cost, adaptability to existing farm size and milking configuration, herd health considerations, reliability of the new technology, the expected life of new systems and the remaining useful life of milking parlors and equipment now in use, and farmers' ability to manage the new systems effectively. Robotic milking systems are popular in Europe where labor costs are high. Cornell engineers and dairy business specialists report that there are only six robotic milking systems on New York farms, with many other dairy farm operators closely watching and evaluating the performance and development of this technology.

Fruit and vegetable growers in New York State and nationwide face similar choices related to the mechanization of growing and harvesting their crops. Uncertain labor availability implies higher labor cost, which provides incentives to research, evaluate, and possibly invest in technology to reduce dependence on labor. Pressure to change the mix of inputs employed to produce fruit and vegetable crops and products appears to have increased during the long, unresolved debate over immigration reform.

Planting, pruning, thinning, harvesting, sorting and packing are tasks that lend themselves, with various degrees of difficulty, to change through labor-saving technology. Farm operators often invest in machinery and equipment to increase the productivity of their existing labor force, not to eliminate the need for hand labor. Sometimes innovative approaches to the tasks listed above result in reductions in workers needed for those tasks; but more often the goal is to make these tasks less onerous for workers, thus improving efficiency and working conditions. Increased adoption of mechanized harvest technologies for fruit and vegetable crops is sharply limited by consumer expectations of fresh market quality. Currently available mechanized harvesting systems can cause serious bruising and other product and value loss problems for crops (melons, peppers, squash, table grapes, apples, and salad tomatoes) destined for fresh produce markets.

If seasonal labor shortages and overall uncertainty in agricultural labor markets persist, demand will grow for more intensive research and development of mechanized systems and crop varieties that can be mechanically planted, cared for and harvested without diminishing the value of fresh produce in the marketplace.

2. Shifting the Mix of Crop Enterprises

Early last spring, National Public Radio joined a variety of other media outlets to broadcast a story called, "Immigration's Fallout: Fewer Fresh Tomatoes?" The owner of the largest fresh market tomato growing operation in Pennsylvania withdrew from the business, started by his father in 1949, because he couldn't count on enough labor to harvest the crop. Keith Eckel decided not to risk the $1.5-$2.0 million annual investment in 2.3 million tomato plants, while ending production of pumpkins and cutting the farm's fresh sweet corn acreage in half. Field corn, easily harvested mechanically, now grows on the land once devoted to fresh market vegetables.

As New York State farm managers seek to adjust to the uncertainties created by immigration enforcement they too are making economically rational decisions to shift away from labor intensive crops. In Orleans County, sweet cherry trees that require hand pruning and harvest have been cut down and replaced by blueberry bushes and tart cherry orchards that can be managed with fewer hired workers. In Ontario County, growers have reduced labor intensive asparagus plantings in favor of more conventional crops. In a December 2006 New York Farm Viability Institute survey, cabbage growers cited "immigration issues relative to obtaining and keeping employees" as the greatest five-year threat to the success of their industry (NYFVI,

2006); and western New York State producers report significant reductions in acres planted to cabbage as a measure to limit risks associated with labor availability.

The anecdotal observations above suggest that, unless the immigration policy and enforcement environment changes, production of high-value, fresh market fruits and vegetables in New York State could decline. Such a trend could reduce gross farm receipts and limit the variety of locally grown specialty crops available to consumers.

3. Migration of Production Enterprises across Borders

"We'll either import the labor or import the food" is a conclusion many New York State growers and their counterparts nationally have drawn from their experiences with the current farm labor situation. The Western Growers Association reports that a few large farms with base operations in Arizona and California currently grow 84,000 acres of vegetables in Mexico. This small percentage shift in acreage from these important vegetable growing states has been driven by a variety of food safety and environmental regulations, as well as concerns about labor availability. In New York State, the option of moving production across the northern border to Ontario has received little consideration, despite some grower speculation about the comparative benefits of the Canadian immigration system and exchange rate advantages that have since disappeared.

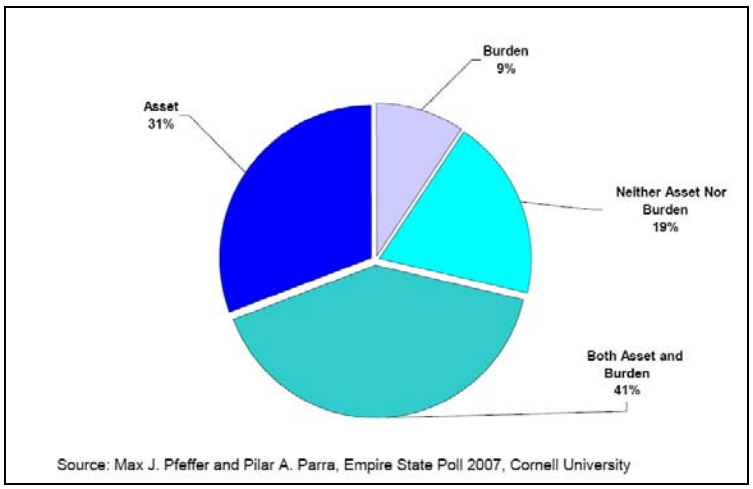
More important than the developments noted above is the fact that the value of fresh produce imports has grown almost threefold since 1994, reaching nearly $9 billion in 2006, with Mexico shipping fresh produce valued at close to $4 billion to the United States (Huang and Huang, 2007). Given strong and growing demand for year-round fresh fruit and vegetables, we are already "importing the food", regardless of immigration and agricultural labor issues at home.

Public Perceptions

Farmers' impressions of the importance of immigration issues to their businesses were documented in "The New York State Agricultural Immigration and Human Resource Management Issues Study" (Maloney and Bills, 2008). The views of farmers notwithstanding, public perceptions of these issues, as expressed through the legislative process, will significantly influence potential changes to federal immigration policy. In a practical sense, non-farmers' understanding of immigration and the contributions of immigrant workers to the economic prosperity of local communities will strongly affect the level of public scrutiny and the impact of immigration law enforcement actions on farms, farmworkers and agricultural production.

The Empire State Poll, 2007 (Pfeffer and Parra, 2007) provides a perhaps surprising indication of how fluid New Yorkers' opinions regarding immigration might be. A key question in the survey asked questions about whether New Yorkers considered immigrants to be an "asset or a burden" to their communities, Figure 8-3.

FIGURE 8-3. PORTION OF NEW YORKERS WHO CONSIDER IMMIGRANTS TO BE AN ASSET OR A BURDEN



In this context, New Yorkers, as well as Americans in general, are likely to define "asset" and "burden" based on their views of other issues that fuel the immigration debate. Those who view immigrant workers as a burden associate crime, strained health care and educational resources, depressed wages and job competition. This outlook is tempered in the overall public view by the perception that immigrants, as community assets, comprise a reliable work force spend at least some of their income in local communities and contribute to the production of safe, locally-grown, affordable food.

The formation of public opinion regarding immigration in New York State is influenced by reporting and editorial opinion from a variety of media, advocates on both sides of the issue, political leaders, business associations, family, friends, church organizations, neighbors and co-workers. New York State is home to the "media capital of the world" and high quality information on agricultural immigration issues is readily available, from coverage by the New York Times to North Country Public Radio, the Rochester Democrat & Chronicle and many other print and broadcast media outlets across the state. Even in the national coverage of the immigration story, which often emanates from New York City, news outlets have focused on the importance of immigrant workers to New York State farms and the challenges workers and farmers alike face in the current environment.

Beyond the media, a multitude of farmworker advocacy groups, chambers of commerce and statewide associations, such as the New York State Business Council, share an interest in the welfare of workers and the prosperity of farm businesses and rural communities. These groups, while not traditional allies of one another, nor of farmers and farm organizations, have platforms from which to influence grassroots opinion on immigration issues. New coalitions among these groups will continue to grow in response to the current environment and as vehicles to effect changes in federal policy under a new Congress and Administration.

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Chapter 9. Agriculture and the Environment

Trends in New York Land Use and Highlights of the 2008 Farm Bill

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Gregory Poe, Associate Professor, AEM

When preparing last year's 2008 Agriculture and the Environment Outlook Chapter, our intention was to report on a 2007 Farm Bill. An initial bill had been introduced and passed by the House in May 2007 and the Senate was deliberating on the farm legislation. However, it was not until mid-December that the Senate passed their version of the Farm Bill, and it then took over six months, of what has been referred to as a "long and contentious" conference, for the House and the Senate to come to terms. Congress passed the conference version in May 2008, which was promptly vetoed by President Bush. It was only in June, after a technical complication was addressed, that the President's veto was finally overridden by Congress and the 2008 Farm Bill (H.R. 6124, Public Law:110-246), entitled the "Food, Conservation and Energy Act of 2008", was enacted into law.

Much of the debate over the 2008 Farm Bill centered on what President Bush referred to as fiscal discipline and a lack of program reform "in a time of record high food prices and record farm income", but there were many other voices wielding influence over program direction; all clearly understand that this legislation is sweeping and addresses numerous concerns beyond agricultural commodity programs. The concern we address here relates to environmental management. The 2008 legislation follows precedent established in the mid-1980s and enshrines environmental programming for agriculture in a separate conservation title. Although many groups would have liked the conservation title to have taken a different direction from what was ultimately enacted, the Conservation Title of the 2008 Farm Bill, we see only marginal shifts in emphases. There are modifications, outlined later in this chapter, but the palate of conservation programs follows the same trajectory as the 2002 Farm Bill, with provisions for farmland retirement, stewardship of land and water resources, and farmland protection.

Despite the lack of major shift in direction, this is an opportune time for us to showcase the Farm Bill Conservation Title. This legislation will govern the bulk of Federal agriculture and related programs for the next five years, interacting with and complementing other initiatives at both the state and Federal levels. That is, the direction of Federal farm programs for conservation and the authorities granted the USDA to fund them are absolutely critical elements in the emergent policy mosaic in New York. Moreover, in recent years, largely because of the expansion of the working lands programs, instead of land retirement efforts, this legislation has emerged as a relatively important financial input to New York State farmers. With $4 Bil. in additional and conservation program funding under the 2008 Farm Bill, this role could increase. Beyond immediate financial considerations, these programs offer assistance to and opportunities for farmers and landowners to adopt practices that meet water quality and other environmental demands that have become more prominent in recent years, with new program offerings that will become available to New York State farmers in targeted areas.

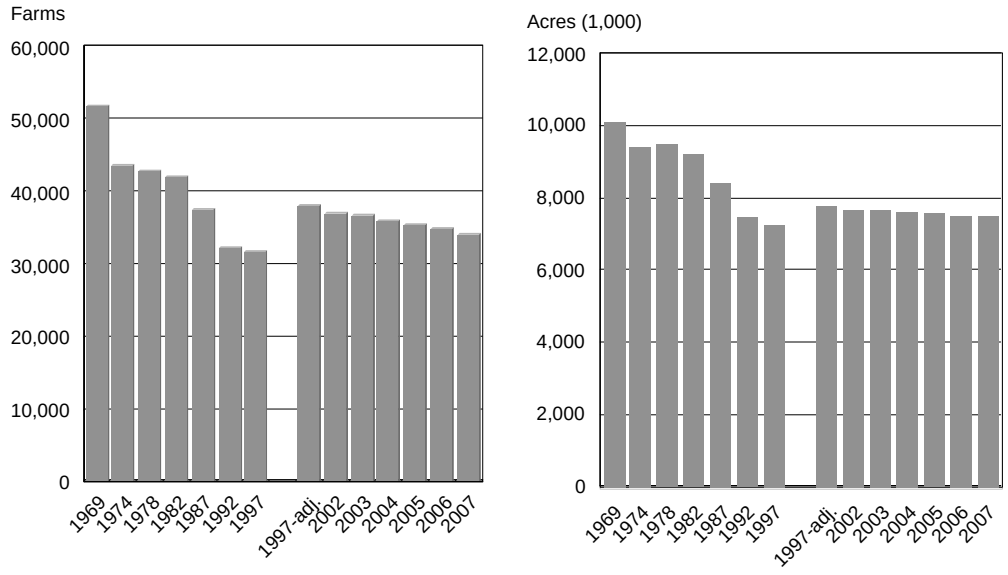
To begin the discussion here, we review broad trends in land use in New York State by updating some information provided in this chapter in years past.

I. Agricultural Land Use in New York

New York's land resources are key ingredients for agricultural commodity production. Crop and livestock production has always been a predominant feature of the New York State landscape. After the American Civil War, New York State led the nation in farmland acreage. As late as a century ago, about three-fourths of the State land base was counted as land in farms. But during much of the twentieth century, agricultural lands in New York, indeed throughout the Northeast, have slowly been converted or reverted to alternate uses and, due to consolidation and other socio-economic trends, the number of farms has declined. Some of the acreage released from farm use has been converted to a developed use, but millions of acres sprouted brush, then small trees and, over time, woodland that can again reclaim the title of forest.

Corresponding trends in farm numbers and farm acreage in New York are shown in Figure 9-1. For 2007, the USDA farm estimate for New York is 34,200 farms, down 800 farms from the number reported in 2006. The farmland base--acreage used for crops, pasture, and support land-- stabilized in the early 2000s at about 7.5 million acres across New York State.[1]

FIGURE 9-1. FARMS AND LAND IN FARMS, NEW YORK, 1969-2007



Source: 2002 Census of Agriculture, NYS Agriculture Statistics Service, and UDSA-National Agricultural Statistics Service

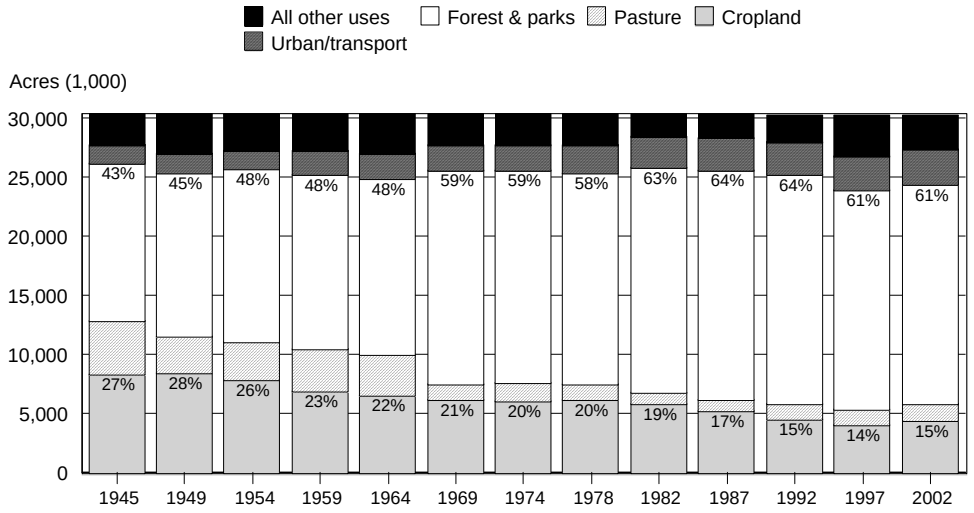
The value of crops and livestock produced on these farms hovered in the $3 Bil. range during the 1990s and into this decade with some variation due to fluctuating milk and crop prices. Since 2000 total receipts have trended upward, with gross farm income increasing sharply to $4.5 Bil. in calendar 2007, largely fueled by increased commodity prices. Farm businesses also support industries that process raw farm

[1] Some of these land-use developments are masked by changes in data management. For the 2002 Census of Agriculture, the USDA adopted new measures to correct for under-counting of farm operations. As indicated in Figure 9-1 these adjustments led to a notable rise, for calendar 2002, of approximately 20% in the estimated number of farm operations and a corresponding, but lesser, increase (8%) in estimated farm acreage.

commodities and supply inputs needed for commercial farm production. Statistics of these data are less frequently reported. In 2007, the value of gross output originating on New York farms and with businesses classified as agricultural services or food/beverage manufacturing totaled $31.2 billion.

New York State has not conducted a comprehensive inventory of land uses since the late 1960s, making for a good deal of uncertainty over the status of overall land use. Two USDA agencies—the Economic Research Service (ERS) and the Natural Resources Conservation Service (NRCS)—attempt to fill that void with published estimates of land use and land cover. Because of budget considerations, the Federal land-use estimates are either dated, published only for multistate areas, or both. Widely circulated trend data estimated in a consistent manner by ERS since the late 1940s are shown in Figure 9-2. They showed land-use estimates through 2002 and indicate that, as in years past, forest cover predominates for New York State as a whole; more than six of every 10 acres are classified as forest by the USDA. USDA crop and pasture estimates track the census data reported above and show marginal decreases in both categories moving into this decade. This USDA data series uses a conservative estimate of urbanized land, using Census definitions. Urbanized land by Census definition includes incorporated cities and villages with a population of 2,500 or more and adjacent densely populated territory. In 2002, slightly more than 2.5 million acres fell into this urban land category as shown in Figure 9-2. USDA estimates from the 2003 NRCS National Resources Inventory (NRI) are more expansive in definition and put urban and built-up acreage in the range of 3.7 million acres five years ago.

FIGURE 9-2. MAJOR USES OF LAND, NEW YORK, 1945-2002



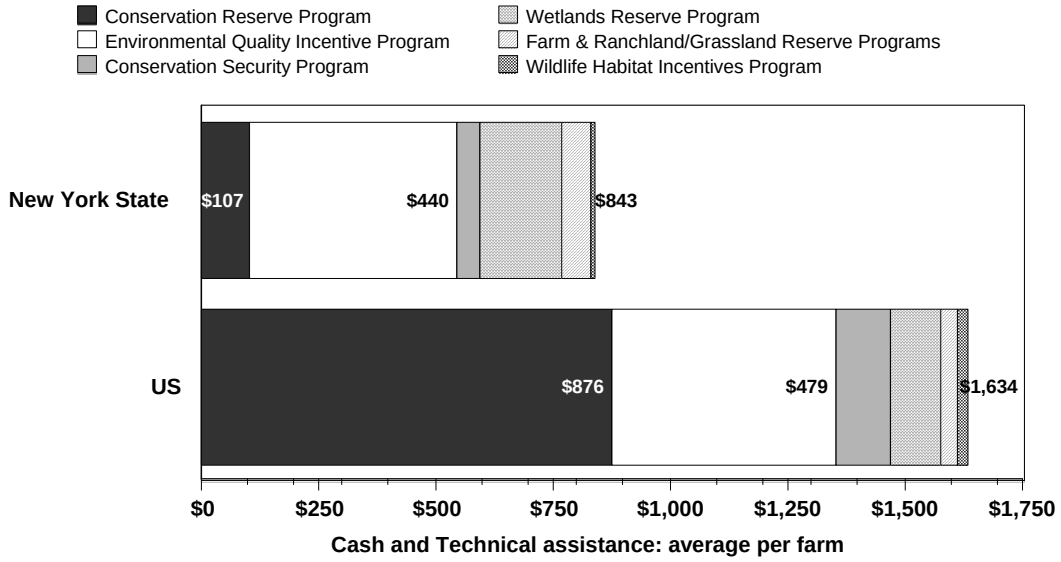
Source: USDA-ERS.

II. The Conservation Title of the Farm Bill, Federal Funds in Perspective

The interplay between food production, land use and the environment has always been part of the American conservation movement. Today, even though many state and local governments are active partners, the larger discussion about public support to achieve satisfactory environmental outcomes on US farm and ranchland typically centers on a suite of USDA programs designed to secure environmental services from farmers and ranchers with Federal funds. Federal cost sharing and technical assistance on the installation and maintenance conservation practices on farms dates to the Great Depression. On several occasions in more recent years, long-lived programs have been repackaged and rolled out under new names. Despite unprecedented amounts of discussion about new program directions, the 2008 Farm Bill and its conservation title are very much in step with past efforts

For some time the authors of this chapter have argued that New York State's share of the conservation title program funding has been disproportionately small relative to other states, particularly the Midwest. On grounds related to the relatively large environmental benefits that would accrue in the northeast, it would make economic sense to target New York State and the Northeast for many of these programs. However, such academic arguments have paled in respect to the political powers that govern the allocation of Federal Agricultural Dollars. While there has been some shift in interregional allocations over the last decade, the momentum of funding continues, and New York State's claim on major conservation title programs remains small relative to the rest of the country. This comparison is provided in Figure 9-3.

Figure 9-3 Average per farm federal expenditures for direct payments and technical assistance by conservation program, FY 2007

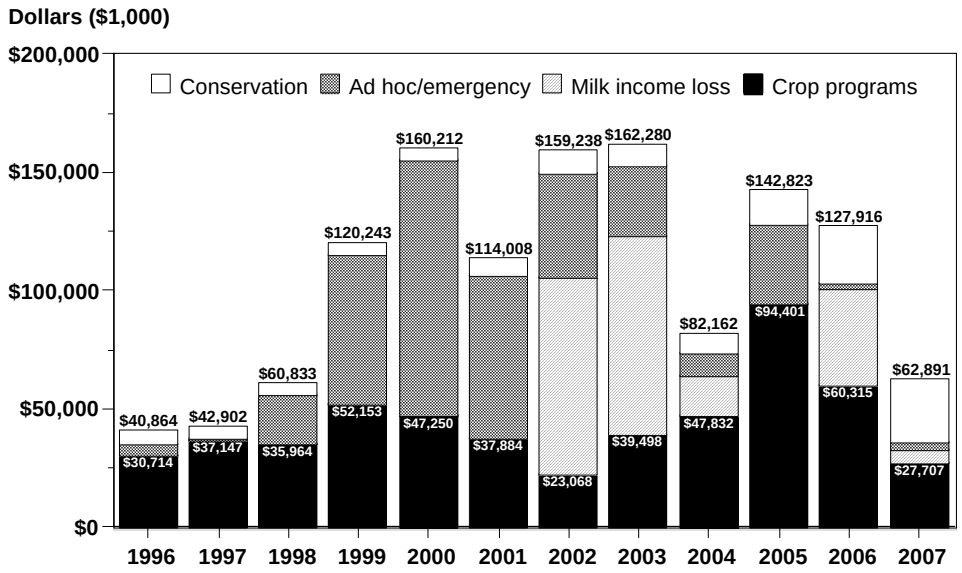


Source: USDA-NRCS; USDA-FSA

Nevertheless the amount of Federal expenditures averaged across all New York State farmers is not inconsequential. Moreover, averages only tell part of the story: because programs are concentrated in certain areas and subscription to the programs is not universal, Federal Conservation expenditures do play a major financial role in the operations of some farms (and are non-existent on others).

It is useful to compare these expenditures to other Federal sources of flows to New York State landowners. Figure 9-4 provides one perspective of conservation title expenditures vis-à-vis other major Federal farm payments. A broad trend is that nominal conservation program payments have consistently increase over the 12 years covered in the figure. As a result of this trend and rising commodity prices in recent years (with the subsequent drop in crop program expenditures) the relative role on conservation payments in New York State Federal farm expenditures is now prominent. Indeed, in 2007, conservation program expenditures in New York State, estimated at $26.1 Mil., approximated that of the commodity programs ($27.7 Mil.) While the monies allocated to conservation programs are scheduled to rise with the 2008 Farm Bill, sometimes in mandated amounts, it remains to be seen whether high crop prices and corresponding low commodity payments will be sustained over the five year life of the 2008 legislation.

Figure 9-4 Federal farm payments for New York State, 1996-2007



Source: USDA-ERS.

Some perspective is also gained by comparing the expenditures associated with these Federal programs with selected conservation expenditures by the State of New York, which has an impressive history in the conservation arena. For example, as we have emphasized in previous years, New York State has a 40-year history of leadership and investment in farmland protection. More recently, a statewide Agricultural Environmental Management (AEM) Program and Nonpoint Source Pollution Grants have forged new opportunities to reduce agricultural nutrient runoff and other environmental impacts. Table 9-1 provides a listing of major Conservation Title expenditures averaged across New York State's 34,200 farms and a like listing of key New York State conservation programs. This direct comparison on a per farm basis for 2007 shows that New York State's contribution far exceeds that of the USDA. On a per farm basis, we estimate that the State generates more than $5,700 in benefits, compared to an estimated $843 at the Federal level, a nearly seven-fold advantage from State sources.

These results are surprising and beg for elaboration. First, like recent trends in crop prices and consequent effects on Federal crop payments, this ratio has been overtaken by events in the last few years. Specifically, the total value of tax relief encompassed by the Farmers School Tax Credit and Agricultural and Farm Building Assessments has ballooned in the last three years as local governments have dramatically increased local property tax levies. These levy increases have been largely offset by larger exemptions afforded farm operators and landowners under New York State law. According to our calculations, the aggregate amount of property taxes avoided during the 2007 tax year was $36.0 Mil., $128.4 Mil., and $14.4 Mil., respectively for the Farmers School Tax Credit, agricultural (farmland) and farm building assessments. This aggregate amount-$178.8 Mil.-is up from $135 Mil. in 2004 (a 32% increase in the 3-year span). These increases are driven, to varying degrees depending on the local jurisdiction, by increases in property values and increases in local property tax levies as local governments scramble to secure the funds needed to supply local services. Similarly, higher property taxes levies for local schools have dramatically increased the benefits generated by the refundable income tax credit available for farm operators who qualify for the Farmers School Tax Credit. Secondly, the primary New York State expenditure categories focus on programs to provide tax relief and keep farmers on the land. Although conservation programs often have a similar auxiliary motivation, their paramount objective is to reduce the environmental effects of agricultural practices. Thus, the Federal and state expenditures are to some extent non-comparable, and instead can be viewed as part of a complete package addressing both the positive and negative external effects of agriculture in New York State. As such, we argue that it is most appropriate to view past, present and future Federal conservation expenditures in the context of a larger suite of programs intended to address or enhance the environmental contribution of agriculture to society.

TABLE 9-1. ESTIMATED AVERAGE, PER FARM BENEFITS FROM FEDERAL AND NEW YORK STATE CONSERVATION PROGRAMS IN 2007

Item	Dollars
Conservation Reserve (CRP)	$107
Environmental Quality Incentives (EQIP)	440
Conservation Security (CSP)	51
Wetlands Reserve (WRP)	171
Farm and Ranch Lands Protection (FRPP) & Grassland Reserve (GRP)	62
Wildlife Habitat Incentives (WHIP)	12
Total-Federal Programs	$843
Purchase of Development Rights (PDR)	$420
Reduced State Income Taxes: Farmers School Tax Credit	1,053
Reduced Property Taxes: Agricultural Assessments	3,754
Reduced Property Taxes: Farm Building Exemptions	428
NYS-Agricultural Environmental Management (AEM)	77
Total-New York State Programs	$5,733

Source: Derived from data obtained from USDA-ERS, USDA-NASS, NYS Dept. of Agriculture and Markets, NYS Office of the State Comptroller, NYS Dept. of Taxation and Finance, and the NYS Office of Real Property Services

III. The 2008 Farm Bill and Conservation

Following the current USDA nomenclature, Federal Conservation Title payment programs can be conveniently grouped around land retirement, working lands, and land preservation. Federal outlays for those programs were about $3.7 Bil. in 2007, according to USDA budget data, and is expected to grow to over $5 Bil. by 2012. As indicated above, this expansion largely follows the path laid out in the 2002 Farm Bill. However, there are some directional changes at the national level, notably: there is an increased emphasis on working lands programs as evidenced by growth in EQIP and shrinkage of Conservation Reserve Program acreage; the Conservation Security Program (now the Conservation Stewardship Program) is no longer limited to specific watersheds but will now be offered on a broader scale; and New York State landowners in the Susquehanna River basin are eligible to participate in a new Chesapeake Bay Watershed Program.

Here we summarize major Conservation Title programs affecting New York State, noting that the details on some of the new programs, and the implementation for conservation programming in New York State, will not emerge until rulemaking is completed next spring.

Land Retirement Programs

Conservation Reserve Program (CRP): Created by the 1985 Farm Bill, the CRP is the Nation's flagship land conservation program. The CRP offers annual rental payments and cost-share assistance to landowners to establish long-term resource conserving land covers (e.g., grass and trees) on eligible land to improve the quality of water, control soil erosion, and enhance wildlife habitat. Having evolved through subsequent Farm Bills, the CRP now consists of three programs. The most established program is the General Sign-Up CRP, which in 2007 contracted over 32.9 million acres on more than 276,000 farms nationwide. Participants enroll in the General Sign-Up CRP by contracting their land for 10 to 15 years. The rental contracts are competitive, operating through periodic sign ups in which landowners submit offers indicating the amount that they would be willing to accept as compensation for retiring their land (annual compensation or rental rates must be equal to or less than the average dry land soil rental rate for the county in which the land is located). Each offer is compared to an environmental benefits index calculated for the specific parcel under consideration, placed in a nationwide pool, and then ranked on the basis of relative costs and benefits of enrolling individual parcels.

Beginning in 1996, the Continuous Sign-Up was added to the CRP. This program offers greater financial incentive than the general CRP, and it allows landowners to sign up at any time as opposed to the one or two announced sign-ups each year. It targets highly valued environmental practices including filter and contour grass strips, riparian, wildlife and wetland buffers and a number of other specified practices. Like the CRP, farmers receive cost share assistance and land is enrolled for 10 to 15 years. Additional incentives for specific practices are available.

The Conservation Reserve Enhancement Program (CREP) represents the third leg of the CRP. Established at local or state levels through individual Federal/State partnerships, the CREP program currently operates in 24 states, implementing projects designed to address specific environmental objectives. The program retains the essential characteristics of general CRP, establishing 10 to 15-year contracts with landowners to retire environmentally sensitive land. Like the continuous sign-up, enrollment is available on a continuous basis. However, the CREP program differs from the other programs previously described in that, recognizing that land enrollment decisions are sensitive to contract prices, it offers substantially higher incentives for enrollment. Recent research by the co-authors demonstrates that landowners are responsive to these incentives. Since 2003, New York has had three CREP programs: the Syracuse/Skaneateles Lake Watershed Program (1,000 acres enrollment), the New York City Watershed Program (5,000 acres enrollment target), and the New York State CREP program (40,000 acres enrollment target).

TABLE 9-2 CONSERVATION RESERVE ENROLLLMENTS, NEW YORK STATE AND THE US, 2008

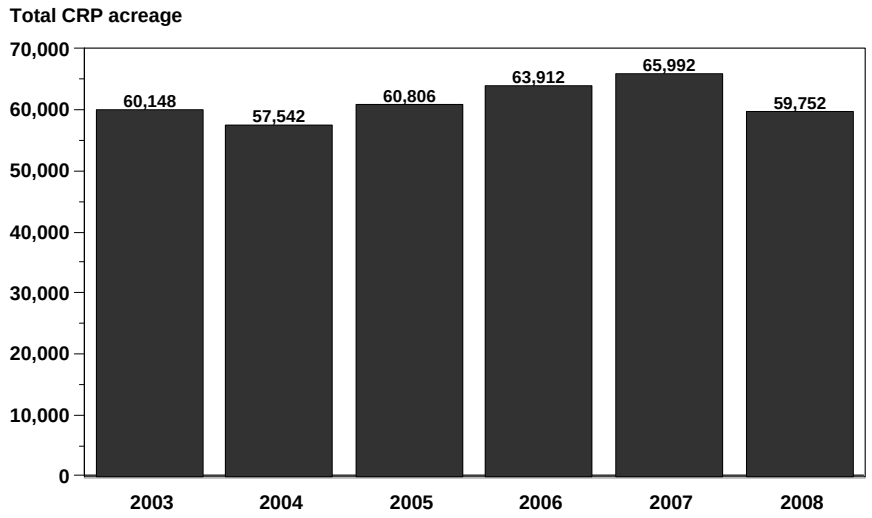
Item	Number of Farms	Acres	Annual Rental ($1,000)	$/Acre
New York				
General Sign Up	1,052	39,851	1,640	$41.16
Continuous, Non CREP	590	8,988	472	$52.56
CREP	623	10,913	1,677	$153.68
United States				
General Sign Up	253,892	30,542,941	1,346,017	$44.07
Continuous, Non CREP	183,413	2,864,736	255,477	$89.18
CREP	42,376	1,126,710	143,424	$127.29

Source: USDA-FSA

In New York State the pattern of CRP enrollment across the three programs has varied substantially from the national averages. As indicated in Table 9-2, the general CRP, continuous CRP and CREP programs respectively constituted approximately 88 percent, 8 percent and 3 percent of total national CRP acreage enrolled in 2007. Comparative figures for New York State were 67 percent, 15 percent and 18 percent. In terms of total CRP acreage, New York State has closely followed national trends in recent years. Most notably as indicated in Figure 9-6, total CRP acreage in New York State fell by almost 10 percent from 2006 to 2007 after inching up for several years. This is largely attributed to the expiration of long-term contracts and lack of reenrollment of those lands.

Although continuing the authorization of the CRP program, the 2008 Farm Bill reduced the national cap to 32 million acres, down from the previous cap of 39.2 million acres. Actual enrollment was 34.7 million acres as of April 2008, reflecting some exiting of the program at the national level. As in New York this drop in national CRP acreage is most likely driven by elevated commodity prices and the consequent opportunity cost of reenrolling land once original contracts had expired.

FIGURE 9-6. CONSERVATION RESERVE PROGRAM ACREAGE, NEW YORK STATE, 2003-2008



Source: USDA-FSA

Wetlands Reserve Program (WRP): The (WRP) pays landowners, and provides cost-share assistance, to retire marginal land from agricultural production if those lands are restored to wetlands and protected with 30-year or permanent easements. Landowners receive appraised fair market value for land placed in permanent easements (and 75 percent of appraised value for 30 year easements) and are provided with cost-share assistance to cover restoration expenses. The WRP offers continuous signups in a manner analogous to the continuous CRP.

WRP enrollment in New York State has been quite successful, particularly in comparison to the CRP. Nationwide the CRP to WRP ratio is almost 15 to 1. In New York State it is approaching one-to-one with over 49,000 acres enrolled across over 1,200 WRP contracts in New York State up through 2007.

In contrast to lowering the national cap for CRP, the 2008 Farm Bill lifts the cap for WRP to 3.04 million acres, up from 2.27 million acres in the 2002 Farm Bill. This implies $1.3 Bil. in additional spending in the new Farm Bill. Through 2007, 1.95 Mil. acres had been enrolled nationwide. Assuming continued enrollment in the New York State program, it is likely that in the future WRP acreage in New York State will exceed that of CRP.

In addition to increasing the acreage cap, the 2008 Farm Bill authorizes a Wetlands Reserve Enhancement Program that follows the success of the CREP initiatives by allowing Federal/State partnerships in the design and selection of contracts.

Working Land Payment Programs

The Environmental Quality Incentives Program (EQIP): First authorized in the 1996 Farm Bill and expanded in the 2002 Farm Bill, EQIP provides assistance to farmers to install or implement conservation practices on eligible agricultural land to protect water, air and soil quality as well as wildlife habitat. Eligible lands include cropland, grassland, rangeland and pastureland, non-industrial private forestland and other farm

lands as determined by the Secretary of Agriculture. Importantly, from the perspective of New York agriculture, EQIP is the only conservation program that sets aside a portion, a minimum of 60 percent nationally, of its funding for livestock producers and serves as a critical source of funding for the development of comprehensive nutrient management plans. Under the 2008 Farm Bill, conservation practices related to organic production and transition to organic production are also eligible for funding.

In New York State EQIP tends to be oversubscribed, with perhaps twice the number of applications than are ultimately funded. Enrollment in EQIP is determined by a ranking program based on four criteria: national, state, and local resource concerns, and an efficiency score. In New York the state technical committee establishes resource concerns to be identified as priorities for funding. Consistent with national priorities, in 2007 these were the reduction of nonpoint source pollutants, reduction of soil erosion and sedimentation, reduction of emissions, and promotion of at-risk species habitat. Local workgroups representing each of the thirteen waterbasins establish local resource concerns. The efficiency score is based on the lifespan and cost of the conservation practices. A procedure consistent with meeting these priority objectives and using approved conservation practices is applied to rank applications and determine funding: each watershed has unique local ranking criteria, eligible practices, and separate funding pools. While EQIP is a continuous signup program, New York State NRCS established ranking periods, to ensure adequate time to process applications, and ultimately sign contracts.

Much of the dramatic rise observed for Conservation Title expenditures in New York State since 2004 can be attributed to a surge in EQIP contract payments over that period. In 2004, statewide payments for 1997 contracts and after were just over $2.54 Mil By 2007 these contract payments had risen almost four-fold to over $9.26 Mil.,[2] with over $5.20 Bil. of these funds direct to Animal Waste Management Practices. This upward trend is expected to continue as national EQIP funding as authorized in the 2008 Farm Bill will rise from $1.2 Bil. in fiscal year 2008 to $1.75 Bil. in year 2012. In 2007, EQIP allocations were just over $1 Bil. nationwide.

The Conservation Security Program (CSP)/ Conservation Stewardship Program (CStP):
The Conservation Security Program (CSP) was first authorized by the 2002 Farm Bill and provides financial and technical assistance on agricultural working lands to support ongoing conservation stewardship and additional conservation practices or activities that provide increased resource benefits. In many ways this program can be viewed as a first step or experiment in European -like Green Payment schemes that supplant commodity programs with environmental-based support programs. The CSP provides payments to producers who maintain and enhance the condition of natural resources. USDA was directed to implement this program on a pilot basis in 2002-07, resulting in annual enrollments in 331 watersheds, including six in New York (Ausable, Buffalo-Eighteenmile, Niagara, Northern Long Island, Southern Long Island, and Onondaga).

The CSP was structured around three different tiers of eligibility, which are described as follows on NRCS fact sheets. For Tier I, the producer must have addressed soil quality and water quality to the described minimum level of treatment for eligible land uses on part of the agricultural operation prior to acceptance. Soil quality practices include crop rotations, cover crops, tillage practices, prescribed grazing, and providing adequate wind barriers. For Tier II, the producer must have addressed soil quality and water quality to the described minimum level of treatment on all eligible land uses on the entire agricultural operation prior to acceptance and agree to address one additional resource (e.g. wildlife habitat) by the end of the contract period. For Tier III, the producer must have addressed all applicable resource concerns (e.g. soil quality, water quality, wildlife habitat etc.) to a resource management system level that meets the NRCS Field Office Technical Guide standards on all eligible land uses on the entire agricultural operation before acceptance into

[2] In addition to new contracts, the upward trend was reinforced by increase implementation and enforcement of earlier contracts.

the program and have riparian zones. Producers could receive four types of payments (annual stewardship payments; annual existing practice payment, new practice payments, and annual enhancement payments for adopting additional practices that go beyond basic conservation standard or address local resource concerns) with the maximum level of payment per contract ($20,000 to $45,000), and the length of the contract (5-10 years) varying with the tier. Total CSP financial and technical assistance expenditures in New York State were just over $1.73 Mil. in fiscal year 2007.

The 2008 farm bill replaced CSP with the Conservation Stewardship Program (CStP). The CStP is intended to be rolled out nationwide, and not restricted to a limited number of watersheds. Allocations across states will hopefully be more equitable: under the 2002 Farm Bill, about 1/3 of total CSP funds were distributed to just four states.

Under this program the USDA is directed to enroll 12.77 million acres/year at average cost of $18/acre/year including financial assistance technical assistance and other expenditures. Payments are to be based on costs for installation, adoption and maintenance, will include income foregone by producer, and will be related to expected environmental benefits as determined by conservation measurement tools. While some basic parameters have been specified in the law (e.g., a $200,000 cap to any one person or legal entity during any 5-year period;) and new opportunities will exist (nonindustrial private forest land incidental to agricultural land is now eligible as agricultural operations are defined as all acres of the operation of a producers), the allocation of funds across states, the dimensions of the incentives involved, the prioritization of areas, and numerous other factors will have to be resolved in rulemaking, expected in Spring 2009.

The amounts to be allocated to this program were not specified in the act, but the Congressional Budget Office estimated in May 2008 that spending on existing CSP contracts and new CStP contracts will be $3.8 billion for FY 2009-12. Flows to New York landowners will be somewhat encumbered by the explicit wording in the act that that "payments cannot be made for expenses related to the design, construction, or maintenance of animal waste storage or treatment facilities or associated waste transport or transfer devices for animal feeding operations." However, because CStP will be statewide, rather than concentrated in a small number of watersheds, the relative contribution to New York State farms indicated in Table 9-1 is expected to rise.

Wildlife Habitat Incentives Program (WHIP): The WHIP provides cost-sharing for landowners to apply an array of wildlife practices to develop habitat that will support upland wildlife, wetland wildlife, threatened and endangered species, fisheries, and other types of wildlife. Land eligible for WHIP includes private agricultural land, non-industrial private forest land, and tribal land. Applications are accepted year round, and contracts are generally 5-10 years although longer term agreements exist for "essential" habitat land. As suggested in Table 9-1 and Figure 9-4, participation in this program is limited in New York State, with only 1,266 enrolled acres in 2007. While national level funding for WHIP is slated to double with the new farm bill, it is unlikely that the acreage enrolled in this program will increase appreciably in New York State.

Chesapeake Bay Program. Like the CStP, the full dimensions of the Chesapeake Bay Program will not be known until rulemaking is completed. Nevertheless, our hopes are that this EQIP-like program will provide a source of meaningful conservation funding for producers in the Susquehanna River Basin. Indirectly, this targeted program may lead to more diffuse benefits in New York State if the geographical allocation of funding for other programs is adjusted in response. The program is intended to help producers enhance land and water resources by: controlling erosion and reducing sediments and nutrient levels in round and surface water; planning, designing implementing, and evaluating habitat conservation, restoration and enhancement measures where there is significant ecological value for retaining the land in its current use or restoring the land to its natural condition. The 2008 Farm Bill provides $438 million in new funding, to be allocated across

the States in the Chesapeake Bay watershed. New York State is expected to receive 8 to 10 percent of such funding.

Farm and Ranch Land Protection Program (FRPP) and Grassland Reserve Program (GRP): Policy interest in poorly timed or excessive conversion of farmland to developed uses is a "baby boomer" issue and evolved out of settlement patterns witnessed in the aftermath of World War II. Those years generated population spillovers from urban cores that coincided with dramatic changes in the structure of commodity agriculture. Those developments created a perfect storm for many rural communities, especially in the more densely populated Northeastern states. An immediate pressure point was the local property tax, a lynchpin source of funds for public services in the Region. New rural residents, along with the courts, pressured local governments to upgrade their property assessment procedures and update the market values assigned to farm real estate for taxing purposes. Tax levies also increased dramatically to fund growing public service needs. In response, State legislatures enacted programs to give farmland owners tax relief by capping or reducing tax liabilities realized by farmers and farmland owners. In New York State, taxes can be reduced with exemptions on new or reconstructed farm buildings, assessment of farmland at use rather than market value, or a refundable state income tax credit for local school property tax levies.

The policy discussion over farmland protection has evolved and deepened over the years. Most notably, several states (and a few local governments) operate farmland purchase of development rights (PDR) programs, which ensure an open space use in perpetuity. Efforts to 'ease development rights on farmland began in the 1970s when Suffolk County, New York launched the nation's inaugural PDR program. Since that time, according to the American Farmland Trust, 1.8 million farmland acres nationwide have been brought under this form of easement at an estimated cost of about $2 billion (a great deal more if expressed in present value terms). This effort has been fueled primarily with public funds. Nonprofit organizations (organized as land trusts in many cases) acquire farmland easements as well, either through outright purchase, owner donations, or partnerships with state and local governments.

Parallel to these private and state/local government initiatives, the Federal Government is increasingly partnering with these entities to protect farmland. Federal efforts to protect farmland began later and with a protracted debate over actually incurring any direct Treasury costs. The Agriculture and Food Act of 1981 required Federal agencies to evaluate the impact of federally funded programs that converted farmland to nonagricultural uses and to consider alternative actions that would lessen the adverse impacts. Direct Federal involvement in permanent farmland protection only began with the 1996 Farm Bill, which overcame longstanding concerns about the Federal interest in farmland conversion and established the Farmland Protection Program (FPP). This program provided cash assistance to State, local, and tribal governments interested in acquiring farmland development rights. The FPP operated on a very modest financial basis in the early years but did distribute about $50 million in Federal funds during the 1996–2001 span to match state and local dollars.

The 2002 Farm Security and Rural Investment Act reauthorized the FPP and renamed it the Farm and Ranch Land Protection Program (FRPP). FRPP provided funds up to 50 percent of easement costs on qualified, privately owned agricultural land. The 2002 Farm Act authorized funding of $597 million over FY 2002-07. However, annual appropriations lagged behind the amount of funding authorized for most of those years. The 2002 legislation also established the Grassland Reserve Program (GRP), with a focus on efforts to improve and conserve native-grass grazing lands through long-term rental agreements or 30-year or permanent easements. During FY 2003-05, according to the USDA, $177 million in financial assistance was made available to landowners through the GRP.

The 2008 Farm Bill returns to language used in the late 1990s and authorizes the USDA to operate a Farmland Protection Program (FPP), along with the ongoing GRP. The new legislation authorizes an

additional 1.22 million acres for GRP enrollment during FY 2009-12. More germane to the New York State scene, the law mandates new Federal spending amounting to $743 million for FY 2008-12; this is a sizable increase compared to the 2002 Farm Bill.

Program scope appears to be broader under the new legislation, because eligible land now includes forestland and other land that contributes to economic viability of agricultural operation or that serves as buffer from development. In addition, a provision in the 2002 Farm Bill that proved to be troublesome and controversial in the Northeast was eliminated: a 2% limitation on impervious surfaces as a fraction of total easement area. Going forward, eligible entities will be allowed to specify their own limit on impervious surfaces, which should help facilitate program entry for smaller land parcels or parcels with substantial land improvements needed to support livestock, livestock products, or high-value crop production in the Northeast.

IV. Some Concluding Comments

In the realm of conservation and environmental management, an old economic adage appears to hold true: “follow the money”. Improved conservation behavior on farms has been a well recognized social need in the United States for nearly a century. Billions of taxpayer dollars have been obligated in support of that objective, and today, as in years past, thousands of US farm families act as Conservation Title supported stewards of the nation's land and water resources. Continuing public support is a well-established organizing principal for agricultural conservation policy. This chapter fully acknowledges that legacy and focuses on drawing contrasts and providing perspective on the allocation of scarce public funds for this purpose.

Interest is high this year because the U.S. Congress has re-upped the Federal Farm Bill for another five years. Our assessment shows that the new Farm Bill promises more of the same on the conservation front, with no real changes in the fundamentals of Federal conservation initiatives. We have pointed out several significant, albeit marginal changes in program direction, and we have speculated on what some of these changes might mean to the financial circumstances for farmers and landowners in New York State. But we recognize that the vagaries of Federal funding and rule making will ultimately dictate results in New York State and elsewhere. Namely, only a portion of the monies specified in this legislation are mandated and we will have to wait to see what level of Federal funding is ultimately appropriated for these purposes in upcoming years of expected tight budgets. If appropriations match up well with congressional intent, we expect to see an expanded (renamed) Conservation Security Program and fairly robust increases in funding for farmland protection and EQIP. But, because perceived needs are great, we think it's likely that these programs will continue to be oversubscribed and hence underfunded. While we expect a drop-off in CRP enrollment, there are likely to be increased opportunities for enrollment in the WRP.

Chapter 10. Specialty Crops

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Specialty crops are an important component of New York State's agricultural economy. In 2007 the total farm value of all agricultural products produced in New York was approximately $4.5 billion; nearly 25% of the total value was derived from production of fruits and vegetables and 5% was generated by ornamental crops. Nationally, New York State continues to be a significant producer of nine fruit crops and ten vegetable crops. Apples and grapes are the two highest revenue fruit crops in New York while cabbage, sweet corn, and onions have been the three highest revenue vegetable crops in recent years. New York ranks sixth on the value of ornamental production.

Fruits and vegetables continue to gain share in consumer food expenditures, as retailers employ fresh products to differentiate from competitors. According to Park and Kaufman, retail produce sales in 2007 were about $63 billion, an increase of 25% from the 2002 estimate of nearly $51 billion. While all retail formats saw an increase in sales, Warehouse Clubs and Supercenters also experienced an increase in the share of total produce sales. Foodservice sales attributed to produce for 2007 were $47.2 billion, an increase of 42.5% compared to the 2002 estimate of $33.1 billion. Consumer stated preferences for local produce represent a unique opportunity for New York State specialty crop growers to develop alternative ways to access markets.

Below we divide specialty crop markets into four categories and take a closer look at market conditions in each category. We examine patterns, and provide an outlook, for fruit and berries, vegetables (fresh and processing), grapes and wine, and ornamental products in New York. In each case we review production and price data in recent years, provide some thoughts about 2008, and then provide a summary of projections to 2011.

10.1 Fruit and Berry Outlook

Here we take a closer look at the 2007 market conditions for major fruit crops produced in New York State. In addition, based on preliminary information about 2008, we summarize some of the patterns that are expected to unfold in 2009 and beyond. Furthermore, we isolate grapes as a separate fruit category and examine them in detail in section 10.3. Overall, the total production of fruit (including grapes) in New York in 2007 exceeded 850 thousand tons and reached a 10-year high. Likewise, the value of all fruit produced in New York in 2007 was nearly $370 million; it was up 14% over the value in 2006 and was the highest valued fruit crop in New York's history. Record prices for agricultural products in 2008 indicate that the value of some fruit crops will be higher in 2008 than in 2007.

Relative to other states, New York continued to be a major national producer of apples in 2007. As shown in Table 10-1, U.S. apple production in 2007 was 217 million bushels, and it is expected to be approximately 218 million bushels in 2008 based on conditions in late-August according to the USDA, NASS, New York Field Office. The 2008 USApple Forecast predicts a 5% decline in production in 2008 relative to 2007 due to much smaller production forecasts in Washington State and New York State. Washington State typically produces approximately 55 to 60% of the U.S. apple crop and New York State is the second largest producer growing about 15% of the national crop. In New York, apple production was 31 million bushels in 2007 and was valued at $285 million.

Unlike the national trend, New York production in 2008 is expected to be lower than it was in 2007. New York production of apples is expected to fall by at least 12% from 2007 levels to no more than 27.4 million bushels. The 2008 USApple Forecast is projecting a bigger fall in production during 2008 for New York State. The reduced production level is due to unfavorable weather during the growing season. A hail storm in June 2008 reduced much of the fresh fruit crop in all of the major production areas in Wayne County, the Hudson Valley fruit region, and in the Lake Champlain region. In 2007 approximately 37% of the New York apple crop was used for processed products which includes juice as well as cider, applesauce, and frozen products.

In addition to apples, New York State is also a top ten producer of several other tree fruit and berry crops; in 2007 New York was the fourth largest producer of tart cherries and pears, and a top ten producer of sweet cherries, peaches, blueberries, and strawberries. Table 10-1 shows that sweet and tart cherry production in New York increased in 2007 relative to 2006; national production levels of tart cherries fell during the period while U.S. sweet cherry production was rising. New York peach and pear production was down in 2007 relative to 2006, but up substantially relative to 2005. The USDA forecasts that national pear production will fall to 1.6 billion pounds in 2008 (from 1.75 billion pounds in 2007) and that New York's production level will also fall in 2008 to 19 million pounds (from 32 million pounds in 2006). The peach crop is also projected to be lower in 2008 relative to 2007; both nationally and in New York the USDA estimates that the 2008 peach crop will be approximately 10% lower than levels recorded in 2007.

TABLE 10-1. COMMERCIAL NONCITRUS AND NONGRAPE FRUIT PRODUCTION
NEW YORK AND UNITED STATES

	New York			U.S.		
	2005	2006	2007	2005	2006	2007
			------ Thousand tons ------			
Apples	523	625	635	4,853	4,926	4,671
Fresh	245	345	340			
Processed	273	280	310			
Tart Cherries	3.8	5.2	6.5	135	132	126
Pears	8.5	16.0	11.2	823	842	880
Peaches	4.2	6.7	6.3	700	651	610
Fresh	2.0	3.1	3.0			
Processed	2.2	3.6	3.3			
Sweet Cherries	0.8	1.0	1.2	250.8	294.2	323.7

Sources: New York Agricultural Statistics, 2008; USDA Agricultural Statistics, 2008.

Table 10-2 shows that the average price for New York apples used in processing market was $174 per ton in 2007, and this was significantly higher than the five-year average of $144 per ton between 2002 and 2006. Although apple production is expected to drop in New York this year, changes in prices for processing apples are expected to be minimal due to growth in imported quantities of apple juice products.

Average prices for fresh apples produced in New York also increased in 2007; the fresh apple price was $0.341 per pound in 2007, and this was also significantly higher than the five-year average of $0.261 per pound between 2002 and 2006. Due to low levels of carry over fruit from 2007, reductions in imports, lower levels of imports, and another small crop in 2008, the average price for fresh apples is expected to increase in 2008 from prices reported in 2007. USDA projections in July and August 2008 indicate that fresh apple prices may end up being in the range of $0.40 to $0.50 per pound in 2008.

Prices for sweet cherries were up in 2007, however, prices for other tree fruits grown in New York State were down relative to levels seen in 2007 and especially 2006. National prices for selected tree fruits show less variability over the period between 2005 and 2007, and in some cases, national prices for tree fruits are higher in 2007 relative to recent years. Overall, prices for New York tree fruits (other than apples) tend to be higher than those recorded in other states. This observation may be due, in part, to the fact that a greater share of New York tree fruit is dedicated to the fresh market. The USDA projects that national pear prices will rise slightly in 2008 to 20.8 cents per pound; the price for pears in New York State is also expected to increase from 21.5 cents per pound in 2007 to nearly 25 cents per pound in 2008. Price changes in the pear market are responding to less domestic supply and less product entering the United States from exporters.

TABLE 10-2. FARM PRICES FOR NONCITRUS AND NONGRAPE FRUITS
NEW YORK AND UNITED STATES

	New York			U.S.		
	2005	2006	2007	2005	2006	2007
			------ Dollars per ton ------			
Apples	324	400	426	348	458	516
Fresh	528	604	682			
Processed	141	152	174			
Tart Cherries	864	622	672	476	432	536
Pears	499	429	497	358	397	393
Peaches	690	667	634	588	650	578
Fresh	900	784	754			
Processed	499	570	525			
Sweet Cherries	1710	2290	2980	1990	1620	1830

Sources: New York Agricultural Statistics, 2008; USDA Agricultural Statistics, 2008.

TABLE 10-3. VALUE OF NONCITRUS AND NONGRAPE FRUITS
NEW YORK AND UNITED STATES

	New York			U.S.		
	2005	2006	2007	2005	2006	2007
			------ Million dollars ------			
Apples	169.3	250.0	270.5	1689.7	2255.9	2410.2
Fresh	129.4	208.4	231.9			
Processed	38.4	42.6	53.9			
Tart Cherries	3.2	3.2	4.4	64.4	57.0	67.5
Pears	4.2	6.9	5.5	294.6	334.3	345.8
Peaches	2.9	4.6	3.9	411.6	423.2	352.6
Fresh	1.8	2.4	2.2			
Processed	1.1	2.2	1.7			
Sweet Cherries	1.4	2.3	3.6	499.1	476.6	592.4
Total	181.0	266.9	287.9	2958.4	3546.9	3768.6

Sources: New York Agricultural Statistics, 2008; USDA Agricultural Statistics, 2008.

Table 10-3 highlights the values of tree fruit sectors in New York between 2005 and 2007. The value of both the U.S. and New York's apple crop has grown over the last three years as prices and production levels increase. The total value of other tree fruits and berries is expanding rapidly in New York State, and exceeded $30 million in 2007. Anecdotal evidence suggests that the bulk of other fruit produced in New York is sold through direct marketing channels, and it is expected that direct marketing will continue to be an important distribution channel for tree fruit and berries grown in the State. In 2007 the value of New York cherries expanded significantly, while the value of peach and pear production remained stable relative to the 5-year average and was lower than the value reported in 2006. The value of New York berries (strawberries, raspberries, and blueberries) has been growing in recent years and was valued at approximately $15 million in 2007. Much of the growth in the berry sector has occurred with red raspberries and blueberries.

The National Food and Agricultural Policy Project (NFAPP) at Arizona State University provides ten-year economic forecasts for apples, sweet cherries, peaches, and strawberries. NFAPP provides projections for yields, acreage, value of production, international trade, and per capita consumption rates; they also disaggregate national projections to highlight some state-specific and product-specific trends. Although many of the projections are simply based on trends observed between 1996 and 2006, the forecasts shed some light on the general effects that we are likely to observe over the next decade. We include some highlights from the NFAPP study below for apples, sweet cherries, and peaches in Table 10-4.

The NFAPP forecasts that U.S. apple production will reach 9.8 billion pounds by 2011; production is expected to rise in Washington and New York, but fall in other regions. Nearly all of the increased production is expected to be utilized in the fresh market; apples used for canned products, juice, frozen, and dried purposes are expected to remain relatively flat between now and 2016. Producer prices for fresh apples are expected to be approximately $0.25 per pound in 2011 and retail prices are expected to remain close to $1 per pound in 2011 and remain mostly unchanged until 2016. Imports of fresh apples are expected to grow to over 600 million pounds by 2016 and exports of fresh apples will reach 1,315 million pounds by 2016. Per capita consumption rates of fresh and processed apple products are expected to remain constant through to 2016.

NFAPP projections for sweet cherries and peaches indicate that, unlike apples, U.S. acreage and production will increase over the next three years. Grower and retail prices will remain relatively flat for peaches but are expected to increase for sweet cherries. Per capita consumption rates for sweet cherries and peaches are much lower than the rate for apples, and overall, the per capita consumption rates for all three fruit crops are not expected to change much over the period between 2009 and 2011. Between 2009 and 2016 total trade (imports plus exports) of sweet cherries and peaches are expected to increase slightly.

TABLE 10-4. ECONOMIC OUTLOOK FOR SELECTED U.S. FRUITS

	U.S. (unless noted otherwise)		
	2009	2010	2011
Apples			
Acres	375,408	373,571	370,554
Yield (pounds per acre)	25,877	26,233	26,397
Total U.S. production (million pounds)	9,715	9,800	9,782
Total N.Y. production	1,374	1,393	1,418
Fresh Production	5,997	6,036	6,062
Fresh Price (cents per pound)	25.52	24.37	25.15
Retail Price (dollars per pound)	1.03	1.02	1.03
Fresh exports (million pounds)	1,196	1,213	1,233
Fresh imports (million pounds)	501	516	532
Per capita consumption	17.24	17.22	17.14
Sweet Cherries			
Acres	80,900	82,400	83,500
Yield (tons per acre)	3.4	3.3	3.3
Fresh production	389	390	390
Fresh Price	119	123	127
Fresh exports	100	101	102
Fresh imports	14	14	15
Per capita consumption	1	1	1
Peaches			
Acres	143,800	144,500	145,200
Fresh production	1,514	1,535	1,549
Fresh price	34	34	35
Retail price	1.85	1.84	1.86
Fresh exports	275	273	275
Fresh imports	171	173	175
Per capita consumption	5.08	5.09	5.07

Sources: National Food and Agricultural Policy Project, 2007.

10.2 Vegetable Outlook

The value of New York vegetable production (including principal vegetables for fresh and processing markets but not including potatoes and dry beans) increased from $395 million in 2006 to $422 million in 2007. Fresh market vegetables contributed $383 million to the total in 2007 (up from $352 in 2006) while processed market vegetables contributed $39 million in 2007 (down from $43 million in 2006). Overall, the increase in the total value of New York's vegetable crop in 2007 was driven by a combination of expanded acreage and better yields rather than higher prices.

Preliminary market conditions suggest that 2008 will be a better year for vegetable growers than 2007, although market conditions in 2009 may be more similar to the average experienced between 2002 and 2006. During the first nine months of 2008, fresh vegetable prices were 6% higher than those during the same period in 2007; prices of processing vegetables were up 8% over the same time period. Much of the price increase occurring during 2008 is due to acreage reductions for vegetable crops and increased export activity. New York continues to be a significant producer of onions, cabbage, snap beans, and sweet corn; for each of these commodities, New York State has consistently produced crops that have a value of $50 million or more. Here we focus on recent economic conditions, and provide some outlook, for nine fresh vegetable products and four processed vegetable products that are important markets in New York.

Table 10-5 shows production patterns for key vegetables in New York between 2005 and 2007, and also compares New York production levels to national levels. New York sweet corn production was up in 2007 due to record high yields and slightly increased acreage relative to 2006. The national and global markets for processed sweet corn remain strong with growth in the market for frozen corn. New York was the second largest producer of cabbage in the United States and this sector also experienced substantial growth in 2007. Processed cabbage represents less than 10% of the value in New York State's cabbage sector, and nearly all of the recent growth has been for fresh cabbage. Snap bean production (fresh and processed) and onion production also have a large presence in New York, and both sectors saw an increase in production in 2007. New York onion production in 2008 is expected to be down due to crop damage from hail. Of the other five fresh vegetables that are listed in Table 10-5, production patterns remain relatively constant with the exception of pumpkins which experienced greater production levels in 2007. Potato production was up nationally in 2007, however, fewer potatoes were produced in New York during 2007 relative to 2005 and 2006.

Overall, prices for fresh and processed vegetable products were higher in 2007 compared to those recorded in 2005 and 2006. Table 10-6 outlines prices for selected fresh and processed vegetables between 2005 and 2007. Anecdotal evidence suggests that prices for selected vegetables in 2008 will increase and, in some cases, will increase by more than 20% relative to prices received in 2007. Vegetable prices increased in 2008 due to price spikes in markets for grains and oilseeds, products that compete for land with some vegetable crops. One exception to the general price patterns observed for vegetables in 2007 was onions; the onion price fell substantially in 2007 but is expected to reach 2006 levels again in 2008. USDA data has not yet released price data for New York processing vegetables in 2007, but given national price trends for processing vegetables, 2007 prices are also expected to have increased in New York.

Given the trends in production and prices in Tables 10-5 and 10-6, it should come as no surprise that the values of key vegetables in New York are higher in 2007 relative to 2005 for nearly all crops, and are higher than values in 2006 for many crops. The value of cabbage saw a big increase in 2007 yet the value of onions fell substantially in 2007. Although prices for processed vegetables likely increased in New York in 2007, lower levels of production led to a decrease in the value of processing vegetables in New York. Table 10-7 provides an overview of the value of vegetable crops produced in New York between 2005 and 2007. Assuming a relatively constant supply of vegetables in New York in 2008, coupled with higher prices, we expect that the 2008 vegetable crop will be worth more than $400 million.

TABLE 10-5. COMMERCIAL VEGETABLE PRODUCTION NEW YORK AND UNITED STATES

	New York			U.S.		
	2005	2006	2007	2005	2006	2007
Fresh			*------ Thousand cwt ------*			
Sweet corn	2,679	3,216	3,300	27,023	26,690	28,234
Cabbage	4,606	4,620	5,796	24,275	24,823	25,824
Onions	3,808	4,224	4,428	50,459	51,487	57,836
Snap beans	300	587	554	5,541	6,365	6,465
Cucumbers	540	760	714	9,691	9,709	9,352
Tomatoes	360	400	432	38,268	36,800	37,032
Pumpkins	795	798	1152	10,756	10,340	11,164
Squash	796	756	731	8,334	9,224	7,888
Cauliflower	104	67	114	7,285	7,013	6,990
Processing			*------ Thousand tons ------*			
Sweet corn	116	115	-	3,175	3,086	2,897
Snap beans	69	74	-	819	786	768
Green peas	30	39	-	383	410	436
Cabbage	76	72	72	-	-	-

Sources: New York Agricultural Statistics, 2008; USDA Agricultural Statistics, 2008.

TABLE 10-6. FARM PRICES FOR COMMERCIAL VEGETABLES NEW YORK AND UNITED STATES

	New York			U.S.		
	2005	2006	2007	2005	2006	2007
Fresh			*------ Dollars per cwt ------*			
Sweet corn	22.60	23.5	22.00	22.10	22.90	22.20
Cabbage	15.90	15.70	19.40	13.70	14.10	16.40
Onions	15.20	19.40	12.60	9.34	15.20	6.21
Snap beans	76.80	82.00	89.80	54.20	50.50	60.50
Cucumbers	28.30	34.70	34.30	23.00	25.30	24.40
Tomatoes	59.60	76.90	75.20	41.80	44.00	34.50
Pumpkins	27.60	23.60	19.70	9.64	9.89	10.50
Squash	36.60	37.40	38.90	25.70	24.20	28.80
Cauliflower	32.20	42.00	34.10	30.50	31.50	34.00
Processing			*------ Dollars per ton ------*			
Sweet corn	80.40	77.30	-	68.40	66.80	81.80
Snap beans	186.00	204.00	-	140.00	157.00	169.00
Green peas	385.00	345.00	-	266.00	243.00	256.00
Cabbage	50.80	55.10	61.60	-	-	-

Sources: New York Agricultural Statistics, 2008; USDA Agricultural Statistics, 2008.

TABLE 10-7. VALUE OF COMMERCIAL VEGETABLE PRODUCTION
NEW YORK AND UNITED STATES

	New York			U.S.		
	2005	2006	2007	2005	2006	2007
Fresh			*------ Million dollars ------*			
Sweet corn	60.5	75.6	72.6	597.2	611.2	626.8
Cabbage	73.2	72.5	112.4	332.6	350.0	423.5
Onions	57.9	81.9	55.8	471.3	782.6	359.2
Snap beans	23.0	48.1	49.7	300.3	321.4	391.1
Cucumbers	15.3	26.4	24.5	222.9	245.6	228.2
Tomatoes	21.5	30.8	32.5	1,599.6	1,619.2	1,277.6
Pumpkins	21.9	18.8	22.7	103.7	102.3	117.2
Squash	29.1	28.3	28.4	214.2	223.2	227.2
Cauliflower	3.3	2.8	3.9	222.2	220.9	237.7
Processing						
Sweet corn	9.3	8.9	-	217.2	206.1	237.0
Snap beans	12.8	15.1	-	114.7	123.4	129.8
Green peas	11.6	13.5	-	101.9	99.6	111.6
Cabbage	3.9	4.0	4.5	-	-	-

Sources: New York Agricultural Statistics, 2008; USDA Agricultural Statistics, 2008.

Similar to the ten-year projections discussed for selected fruit products in section 10.1, NFAPP also provides ten-year outlooks for vegetable products that are important in the United States. Table 10-8 provides some of the key results from the NFAPP studies for summer storage onions, fall potatoes, and sweet corn. Production during the period between 2009 and 2011 will remain relatively constant for onions and sweet corn, yet is expected to rise for fall potatoes. In each case, grower and retail prices will be close to the five year average between 2002 and 2006, and expected prices in New York will be above national averages. The level of trade activity for summer storage onions is expected to increase over the next three years, however, actual trade patterns in the near term depend substantially on exchange rate movements.

Dr. Steven Reiners from the Department of Horticultural Sciences at the Agricultural Experiment Station in Geneva summarizes 2008 as "overall, a very profitable year for vegetable growers". Dr. Reiners points to the fact that high commodity prices led to contracts from vegetable processors this spring that were paying record prices. With the exception of some isolated hail, weather this summer was very good as were yields. On the input side, Dr. Reiners mentions that a dampened demand for oil (and for corn used to produce ethanol) will likely lead to lower crop prices (including vegetable prices) in 2009. Furthermore, the recent rise in the value of the U.S. dollar relative to the Canadian dollar is expected to renew competition between vegetable growers in New York State and Ontario. Lastly, New York State vegetable growers continue to be concerned about labor availability and fuel costs. Higher energy prices increased the cost of production and the cost of delivering produce to market, however, the overall impact will be felt more by firms exporting to New York rather than those producing and selling locally. A growing consumer demand for local produce and the negative impact of higher energy prices on imports should allow New York State vegetable growers to market a larger share of their products in the Northeast.

TABLE 10-8. ECONOMIC OUTLOOK FOR SELECTED U.S. VEGETABLES

	U.S. (unless noted otherwise)		
	2009	2010	2011
Summer Storage Onions			
Acres	167,171	167,909	169,165
Yield (cwt)	460	456	460
Production (thousand cwt)	76,902	76,591	77,736
U.S. grower price (dollars per cwt)	10.92	11.61	11.32
N.Y. grower price	14.17	15.06	14.68
Exports (thousand cwt)	5,581	5,507	5,484
Imports	7,319	7,626	7,534
Per capita consumption	20.2	20.4	20.7
Fall Potatoes			
Acres	1,017,500	1,018,200	1,019,300
Yield	388	394	399
Production	412,816	417,120	421,722
U.S. grower price	6.07	6.07	6.08
N.Y. grower price	8.89	8.88	8.90
Retail price (fresh)	0.58	0.61	0.63
Per capita consumption (fresh)	42.1	42.0	41.9
Per capita consumption (frozen)	54.2	54.0	53.9
Sweet corn			
Acres	396,800	393,800	391,400
Yield (tons)	7.6	7.7	7.7
Production (thousand tons)	2,860	2,853	2,847
U.S. grower price (dollars per ton)	67.95	67.70	67.69
N.Y. grower price	72.15	71.93	71.92
Frozen exports (thousand tons)	236	238	241
Frozen imports	846	854	861
Per capita consumption (frozen)	7.8	7.8	7.8
Canned exports (thousand tons)	248	242	235
Canned imports	297	287	277
Per capita consumption (canned)	6.3	6.1	5.9

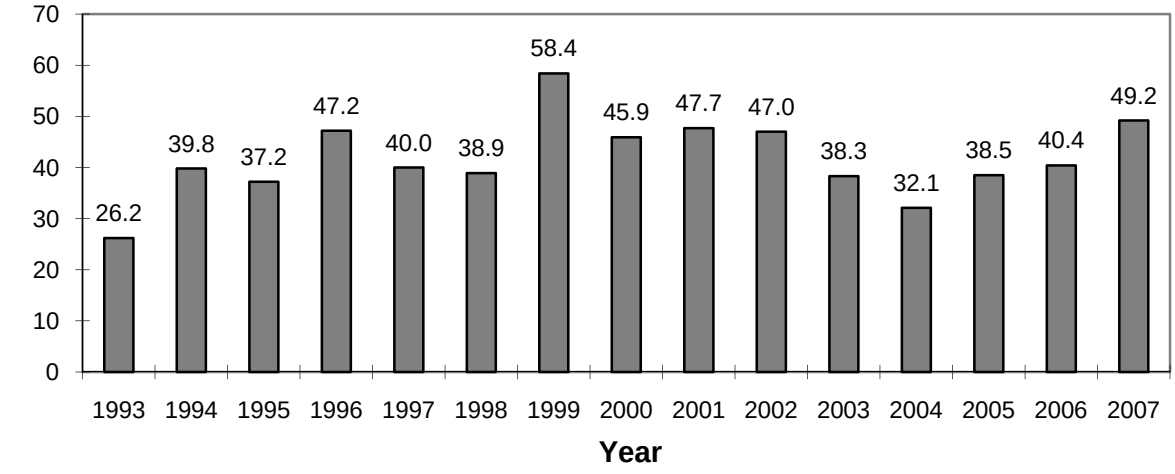
Sources: National Food and Agricultural Policy Project, 2007.

10.3 Grapes and Wine

According National Agricultural Statistical Service, the 2008 New York grape crop is forecast to be 165 thousand tons, which is about 8% lower than last year's production of 180 thousand tons. Climatic conditions impacted grape production in major producing regions across the state. Spring frost affected a considerable number of growers in the Lake Eire fruit region. There were reports of hail and disease during the production season. Earlier hail damage hurt production for some growers in the Finger Lakes, and heavy rains resulted in higher than normal disease incidence in Long Island. Nonetheless, the latest report from *Veraison to Harvest* from Cornell Cooperative Extension indicates that this year's crop will be larger relative to 2007 driven mostly by higher yields, contrary to forecasts of 8% reduction made by New York Agricultural Statistics Service (NASS). The New York crop value has increased in the past four years from $32.1 million in 2004 to $49.2 million in 2007 (Figure 10-1). Crop values for 2008 are not available yet, but they may be slightly higher than 2007 crop values.

The National Agricultural Statistical Service forecasts a U.S. grape crop of 7.2 million tons in 2008, or 3% above the 2006 crop. California's estimated grape crop is 3% larger than a year ago, driven primarily by increased utilization of wine and raisin grapes. NASS reports that grape prices have maintained high levels and grape exports have been reduced.

FIGURE 10-1. VALUE OF UTILIZED PRODUCTION OF GRAPES, NEW YORK 1993-2007



Source: New York Agricultural Statistics, 2008.

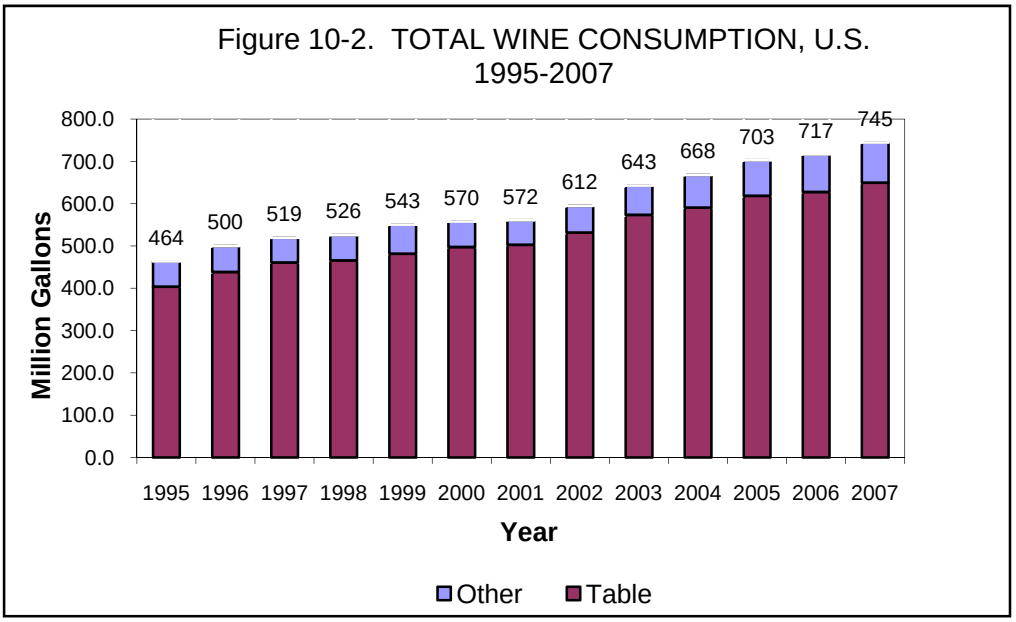
Wine

The U.S. wine industry continues it expansion driven by increased table wine consumption (Figure 10-2). This growth is due to a combination of supply and demand factors. According to the Wine Institute, many wine firms are starting to focus on direct sales, in particular after the favorable 2005 U.S. Supreme Court decision. Since then, at least nine states have opened to this direct channel, considerably expanding the ability of wine firms to reach consumers in the U.S. As a result, direct sales increased by more than 7% from 2006 to 2007. Demographic factors such as higher incomes and increasing wine consumption from specific

ethnic groups (*e.g.*, Hispanics) are also important drivers of industry growth. However, as the economy slows down, it is possible that innovations in supply arrangements play a more important role in the future expansion of the industry.

The U.S. is the largest wine market in the world. Compared to 2006, total sales of wine in the United States increased by 4% in 2007, yielding a total retail value of about $30 billion. According to a recent ACNielsen report, wine in food retail outlets continues to expand and grew 4% between 2006 and 2007. By volume, Chardonnay is the most purchased wine in retail outlets, followed by Cabernet Sauvignon, Merlot and White Zinfandel. These four wine types comprise nearly 50% of consumer expenditures in table wine. U.S. wine exports, which originate mostly from California, have increased by 12% between 2006 and 2007, and the fastest growing export market is Canada.

Figure 10-2. TOTAL WINE CONSUMPTION, U.S. 1995-2007



Source: Wine Institute; Department of Commerce; Gomberg, Fredrickson and Associates

Grapes and Prices in New York State

Relative to 2007, grape prices were slightly up for native varieties, flat for French-American hybrids, and moderately lower for *Vitis Vinifera* (Table 10-9). Average listed prices for major native varieties such as Concord and Niagara increased by 6% and 1% between 2007 and 2008, respectively. In contrast, the average list price for *Vitis Vinifera* varieties dropped from $1,664 per ton in 2007 to $1,627 per ton in 2008, a reduction of about 2%. Nonetheless, the average price for *Vitis Vinifera* varieties in 2008 is higher than the 2004-2008 average. Prices for French-American hybrids remained mainly flat compared to 2007, with slight price increases for Aurore, Baco Noir, de Chaunac and Rougeon; moderate price declines were recorded for Cayuga White and Seyval Blanc.

Concords are the predominant variety grown and processed in New York (Table 10-10). There were 131,000 tons of Concords New York-grown grapes processed in 2007, up 20% from 2006 and above the 2003-2007 average. Over the past five years, Concords comprised 75% of total tonnage utilized in the state in 2007. The second leading variety is Niagara followed by Catawba. About one fifth of the total tonnage of Concord and Niagara grapes is used for wine production. *Vitis Vinifera*, with an average of 4,714 tons utilized over the past five years, accounted for 3% of the NY crush over the last five years. However, *Vitis*

Vinifera production has increased substantially in the past two years, from 3.5 thousand tons in 205 to 35.8 thousand tons in 2007.

TABLE 10-9. GRAPES: PRICES PAID FOR NEW YORK GROWN GRAPES PROCESSED 2004-2008

Variety	2004	2005	2006	2007	2008	5-Year Avg.
American Varieties						
Catawba	234	317	315	330	338	325
Concord	193	274	279	285	302	285
Delaware	338	365	380	378	389	378
Elvira	259	255	276	255	270	264
Ives	371	402	451	410	415	420
Niagara	231	310	320	329	333	323
French American Hybrid						
Aurore	279	345	358	380	381	366
Baco Noir	470	575	601	631	636	611
Cayuga White	375	574	596	632	622	606
de Chaunac	301	457	497	521	526	500
Rougeon	433	489	525	534	538	522
Seyval Blanc	388	584	600	627	625	609
Vitis Vinifera						
All varieties	1,295	1,616	1,442	1,664	1,627	1,587

Source: Cornell Cooperative Extension, 2008 (based on list prices paid by wineries in the Finger Lakes region).

TABLE 10-10. GRAPES: NEW YORK GROWN
Received By Wineries and Processing Plants, 2003-2007

Variety	2003	2004	2005	2006	2007	5-Year Avg.
	tons					
Concord	104,000	99,300	137,100	108,600	131,000	116,000
Niagara	18,000	19,800	18,000	18,500	21,000	19,060
Catawba	7,650	4,760	5,000	4,412	4,930	5,350
Elvira	5,250	5,000	5,025	3,820	4,810	4,781
Delaware	550	300	375	510	430	433
Aurora	3,620	2,225	1,600	3,300	2,480	2,645
de Chaunac	320	160	130	110	180	180
Baco Noir	1220	375	400	350	430	555
Seyval Blanc	480	425	430	650	430	483
Cayuga White	650	625	500	1,020	1,090	777
Rougeon	530	175	440	320	270	347
Vitis Vin.(all)	4,550	4,550	3,500	5,200	5,770	4,714
Other varieties	2,180	2,175	2,600	3,500	3,180	2,727
Total, all varieties	149,000	140,000	175,000	150,000	176,000	158,000

Source: New York Agricultural Statistics, 2008

Recent trends suggest that demand for grapes in NYS is driven by the continued presence of small wineries across the state. Growers selling to such wineries are likely to be in a stronger position relative to growers focusing on grapes for the juice market. The challenge for NYS grape growers is to identify

appropriate product portfolios to seize market opportunities in the appropriate market channels. That is, growers focusing on grape juice should focus on strategies to be lowest-cost suppliers while growers selling to small winemakers should focus their production efforts on quality. Although the market for NYS table grapes has been traditionally small, increased consumer awareness of, and interest in, food that is locally grown is an interesting alternative for grape growers.

Outlook

New York grapes are employed mostly in either wine of juice production, while a very small percentage is allocated to table grapes. According to USDA forecasts, the supply of U.S. grapes for winemakers will go up in 2008-2009. Wine grape production has increased primarily in California and Washington and this is likely to reduce grape farm prices. With a total of 7.84 billion pounds (3.92 million tons), the quantity of grapes utilized for wine production in 2007-2008 increased 5%, compared to the 2006-2007 season. Consequently, the average prices received by farmers were nearly 3% lower in 2008-2007 in comparison to 2006-2007.

Considering the grape fruit market, New York, Michigan and Washington produce over 85% of grapes employed by the juice industry. Forecasts for this year suggest that lower juice grape production in all three producing states will result in less juice for the processing sector in 2008-2009. Lower production, in turn, is likely to drive prices of varieties destined for juice production up. According to the Agricultural Marketing Service (USDA), the inverse relationship between prices and production typically holds for the grape juice sector. Beginning in 2002-2003, prices have been in the decline for four consecutive cropping seasons. As a result, juice grape prices achieved their lowest levels of $148 per ton in the 2005-2006 season, largely driven by a record-high grape production. Subsequently, prices went up to $192 per ton, as domestic production decreased and grape juice imports reached a record high. Official estimates of prices for the 2007/08 season do not exist; what is known is that U.S. grape production utilized by juice processors increased 39% from the previous year and imports increased dramatically to new record high.

Fresh-market grapes are expected to be in short supply for 2008-2009 and, consequently, their prices are likely to prices remain strong. This represents an opportunity for those growers that are able to develop marketing strategies for locally grown supply chains.

Table 10-11 shows forecasts for the period 2009- 2011 from the National Food and Agricultural Policy Project (NFAPP), prepared in 2007. According to NFAPP, total grape output will grow steadily driven primarily by increased acreage. The additional output is likely to be for wine and table grapes, as indicated by moderate increases in per capita consumption of these two items. The juice grape projections present a pretty stable outlook, perhaps due to the fact that the projections do not take into account the cycles that exist in the processing sector, as explained earlier.

TABLE 10-11. ECONOMIC OUTLOOK FOR GRAPES

	U.S. (unless noted otherwise)		
	2009	2010	2011
Total			
Acres (1,000)	981	1,000	1,014
Yield (tons per acre)	7.5	7.6	7.6
Total U.S. Production (1,000 tons)	7,381	7,563	7,722
Total Production Outside California (1,000 tons)	144	148	153
Table Grapes			
Production (million pounds)	3,784	3.901	4,004
Farm Price (dollars per ton)	675	705	730
Retail Price (dollars per pound)	2.18	2.28	2.35
Exports (million pounds)	847	868	833
Imports (million pounds)	1,703	1,766	1,825
Per capita consumption (pounds)	9.6	9.8	10.0
Wine			
Production (million gallons)	826	840	855
Farm Price (dollars per ton)	609	629	653
Retail Price (dollars per gallon)	30.01	30.68	31.49
Exports (million gallons)	86	85	85
Imports (million gallons)	221	225	230
Per capita consumption (gallons)	2.4	2.4	2.5
Raisins			
Production (million pounds)	658	667	675
Farm Price (dollars per ton)	279	281	284
Retail Price (dollars per pound)	0.92	0.92	0.92
Exports (million pounds)	291	296	303
Imports (million pounds)	56	59	62
Per capita consumption (pounds)	4.5	4.5	4.5
Grape Juice			
Production (million gallons)	166	170	173
Farm Price (dollars per ton)	319	323	327
Retail Price (dollars per gallon)	4.5	4.5	4.6
Exports (million gallons)	28	29	30
Imports (million gallons)	166	170	173
Per capita consumption (gallons)	0.5	0.5	0.5

Sources: National Food and Agricultural Policy Project, 2007.

10.4 Ornamentals

In 2007, the commercial sales value of New York floriculture production totaled $199 million, a 2% decrease from the year before, ranking New York 6th in the nation (Table 10-12). The number of commercial growers of floriculture products decreased to 698 in 2007 (Table 10-13). The open ground area used to produce floriculture crops in the state was 838 acres, down 11% from 2006, and greenhouse space decreased slightly to 24.2 million square feet in 2007. Nursery cash receipts increased by 15% from 2005 to 2006, but estimates for 2007 are not available. The total value of floriculture/nursery crops in New York increased by 7% during the period 2006-2007.

TABLE 10-12. GROWER CASH RECEIPTS OF FLORICULTURE AND NURSERY CROPS, NEW YORK, 2002-2007

	2002	2003	2004	2005	2006	2007
			--- Million dollars ---			
Floriculture[a, b]	186.9	194.9	183.0	200.6	203.5	199.0
Nursery[c]	153.7	159.6	172.4	181.3	205.5	NA
Floriculture and nursery crops	340.6	354.5	355.4	381.9	409.0	NA

[a] Includes growers with $10,000 or more in floriculture sales.

[b] Includes ornamental plants without woody stems, grouped into bedding/garden plants, cut cultivated greens, cut flowers, potted flowering plants, indoor foliage plants, and propagative floriculture material.

[c] Includes ornamental plants and trees with woody stems, including broadleaf evergreens, coniferous evergreens, deciduous shade trees, deciduous flowering trees, deciduous shrubs and other ornamentals, fruit and nut plants for home use, cut and to-be-cut Christmas trees, and propagation material or lining-out stock. Also includes other ornamental crops not classified as floriculture.

NA Not available

Source: Floriculture and Nursery Crops Situation and Outlook Yearbook, Economic Research Service, USDA, various years.

TABLE 10-13. GROWING AREA FOR FLORICULTURE CROPS IN NEW YORK[a], 2002-2007

Year	Total greenhouse cover	Shade and temporary cover	Total covered area	Covered area per grower	Open ground	Total covered & open ground
		-- 1,000 square feet --			*--- acres ---*	
2003	24,154	696	24,850	76	1,058	1,629
2004	24,457	708	26,165	80	934	1,536
2005	24,743	573	25,320	80	800	1,382
2006	25,121	507	25,628	84	942	1,531
2007	24,231	613	24,848	85	838	1,409

[a] Includes operations with $10,000+ in annual floriculture sales. Crops include cut flowers, cut cultivated greens, potted flowering plants, potted foliage plants, bedding and garden plants, and propagative materials. Total may not add due to rounding.

[p] Preliminary.

Source: Floriculture Crops, NASS, USDA, various years.

An important distinction in floricultural production is the size of operation. The U.S. value of floriculture production was $4.1 billion in 2007, a 1.5% increase compared to 2006 (Table 10-14). The value of production for large growers increased by 2% whereas the value of production from small growers decreased by 4.3%. These statistics indicate that the industry continues in a process of concentration, with fewer operations in the market producing a large amount of products. At the national level, all floriculture crop groups experienced lower sales except cut flowers, herbaceous perennials, and cut cultivated greens, which together accounted for 27% of total grower sales in 2007. The value of production from small growers is larger in New York in comparison to the national market. Small growers' share of production in New York is 10.9%, which is high compared to the 3.7% in the U.S. In New York, the value of production from small growers remained unchanged, while the value of production from large farms decreased slightly.

When reading the published U.S. floriculture and nursery crop statistics, it should be noted that only 15 states were surveyed by the USDA in 2006 and thereafter, compared to 36 states prior to 2006. Consequently, the 2002-2005 data in Table 10-15 were adjusted to include only the 15 states surveyed in 2006 and 2007 for comparison. The 15 states selected in the USDA survey accounted for about 75 percent of cash receipts received by greenhouse and nursery crop farmers in 2007. In 2007, bedding and garden plants continued to top the list of floriculture commodity categories in New York, and sales by operations with $100,000 or more annual sales increased 2.4% to $110.2 million from the year before (Table 10-15). Potted flowering plants were second with sales valued at $41.1 million, a reduction of 15.3% in comparison to 2006. The value of New York cut flower products in 2007 was up from 2006 but in line with the average value of production experienced between 2002 and 2006 (valued at $4.2 million). The wholesale value of foliage plants in New York was $3.3 million in 2006, a decrease of 35.3% from 2006. The value of production from operations with annual sales between $10,000 and $99,999 increased slightly. Overall, the total value of production in 2007 was 2% higher than the five-year average.

TABLE 10-14. WHOLESALE VALUES OF FLORICULTURE PRODUCTION, BY GROWER SIZE[a], NEW YORK AND UNITED STATES, 2005-2007[b]

	New York			U.S.		
	2005	2006	2007	2005	2006	2007
			------ Million dollars ------			
Small growers	22.5	21.7	21.8	94.9	160.7	153.5
Large growers	178.1	181.8	177.4	4,052.7	3,866.5	3,941.8
All growers	200.6	203.5	199.2	4,147.6	4,027.2	4,095.6

[a] Small growers have between $10,000 and $100,000 in annual floriculture sales; large growers have at least $100,000.

[b] Wholesale value of sales of growers with at least $10,000 in annual floriculture sales. Growers are located in the 36 surveyed states.

[p] Preliminary.

Source: Floriculture Crop, National Agricultural Statistic Service (NASS), USDA, 2008.

TABLE 10-15. VALUE OF FLORICULTURE PRODUCTION BY PLANT CATEGORY, NEW YORK, 2002-2007

	2002	2003	2004	2005	2006	2007	5-yr. avg. 2002-2007	2007 vs. 5-yr. avg.	2007 vs. 2006
				--- *Million dollars* ---				%	%
Bedding/garden plants[a]	99.3	107.5	101.1	110.0	107.6	110.2	106.0	-4	-1.5
Potted flowering plants[a]	47.9	43.1	40.2	49.9	48.9	41.1	45.2	-9	-15.9
Cut flowers[a]	5.6	5.0	4.7	2.7	2.9	4.2	4.2	0	44.9
Foliage Plants[a]	3.9	4.1	3.5	3.1	5.1	3.3	3.8	-13	-35.2
Propagative materials[a]	5.4	9.0	8.2	12.3	17.4	18.3	11.8	58	5.2
Grower sales $10,000-$99,999 (Unspecified crops)	25.0	26.3	25.3	22.6	21.6	22.1	23.8	-7	2.3
Total[b]	**186.9**	**194.9**	**183.0**	**200.6**	**203.5**	**199.2**	**194.7**	**2**	**-2.1**

[a] Sales by operations with annual sales of $100,000 or more.

[b] Total reported crops includes categories not listed – cut cultivated greens and propagative materials.

[p] Preliminary.

Source: Floriculture and Nursery Crops, Situation and Outlook Yearbook, Economic Research Service, USDA, various years.

Outlook

According to industry executives, higher freight costs (largely by air), higher energy and fertilizer costs, plus the depreciation of the U.S. dollar resulted in higher import prices. That helped U.S. growers to be more competitive in the global market. However, the ornamental industry growth could be hampered by higher energy costs and housing market slowdowns in 2009. According to Professor Nina Bassuk, various municipalities have plans in place to plant more street trees as a strategy to reduce energy use, decrease storm water runoff and store carbon. Nonetheless, with the uncertainties about the economy these plans may have to be revised. While well-managed firms will weather tighter profits, smaller firms could face exit or consolidation. Service-oriented firms, like landscapers and retail centers, however, may be better positioned for strong sales growth in 2009.

Over the past few years, homeowners have developed different attitudes about gardening activities. Much of this is related to shifting demographic dynamics, such as the aging baby boomer generation and a younger homeowner who has different ideas about how to spend discretionary income. The Baby Boomers have been the driving force behind the huge growth in gardening activities over past decades. Now, as the leading edge of this generation approaches 60, these former do-it-yourself gardeners have become more service-focused. Dollars that used to be spent at the local garden center have been reallocated to the lawn and garden service segment such as lawn and landscaping companies. Homeowners in the 25-40 age brackets seem more interested in using available discretionary dollars for activities other than gardening, such as travel or other leisure-related activities.

In the near future, households are likely to commit less discretionary expenditure at local garden centers. Business models need to be re-examined in order to remain competitive in a changing industry environment. First, the industry should find ways to expand services that appeal to a service-oriented

generation. Second, retailers must target new groups of consumers, such as first-time homebuyers, condominium dwellers or the ethnic consumer. Third, retailers must recognize they can no longer expect the same kind of robust growth they experienced in the past.

OTHER A.E.M. EXTENSION BULLETINS

EB No	Title	Fee (if applicable)	Author(s)
2008-24	Directions for Using the Crop Insurance Decision Making Tool		Gloy, B. and A.E. Staehr
2008-23	Dairy Farm Business Summary, New York Dairy Farm Renters, 2007	($16.00)	Knoblauch, W. and L. Putnam
2008-22	Dairy Farm Business Summary, Intensive Grazing Farms, New York, 2007	($16.00)	Conneman, G., Karszes, J., Murray, D., Grace, J., Degni, J., Staehr, A., Benson, A., Murray, P., Glazier, N. and L. Putnam
2008-21	2008 Federal Reference Manual for Regional Schools, Income Tax Management and Reporting for Small Businesses and Farms	($25.00)	Bouchard, G. and J. Bennett
2008-20	2008 New York State Reference Manual for Regional Schools, Income Tax Management and Reporting for Small Businesses and Farms	($25.00)	Bennett, J. and K. Bennett
2008-19	Fruit Farm Business Summary: Lake Ontario Region New York 2007		White, G., DeMarree, A., and J. Neyhard
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