STATUS OF

# Wisconsin Agriculture 2011

- **Status of the Wisconsin Farm Economy**
- **Current Outlook: Farm Products, Farm Inputs and the General Economy**
- **A Closer Look at Wisconsin Dairy Farms**

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# Status of Wisconsin Agriculture, 2011

*An annual report by the Department of Agricultural and Applied Economics, UW-Madison and Cooperative Extension, UW-Extension*

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## Preface

***Status of Wisconsin Agriculture*** is an annual agricultural situation and outlook report authored (except where noted) by faculty and staff in the Department of Agricultural and Applied Economics, University of Wisconsin-Madison. The report contains three parts. Part I provides a brief overview of the financial environment in the Wisconsin farming sector. In Part II, market analysts review current conditions in major Wisconsin commodity sub-sectors and offer their forecasts for 2011. Part III contains special articles that summarize and expand on the results of a recent survey of Wisconsin dairy farmers.

Status of Wisconsin Agriculture may be downloaded from the Internet in Adobe Acrobat format at http://www.aae.wisc.edu/www/pub/. If you do not have internet access, contact Ms. Linda Davis, Department of Agricultural and Applied Economics, UW-Madison, 427 Lorch Street, Madison, WI 53706, to obtain a printed copy of the report.

The faculty and staff of the Department of Agricultural and Applied Economics welcomes your comments and questions on material in this report. We also encourage your suggestions regarding rural Wisconsin issues that we might address in subsequent editions.

### Acknowledgements

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## A Silver Anniversary

A quarter-century ago, a group of UW-Madison agricultural economists assembled what they assumed would be a one-time report on how Wisconsin's agricultural sector was faring. The impetus was a hearing held in the spring of 1985 by the agriculture committees of the Wisconsin Assembly and Senate to document how a nationwide farm financial crisis was affecting Wisconsin farmers. The UW specialists were invited to offer their insights, and afterwards they packaged their testimony into a departmental staff paper titled *Status of Wisconsin Farming*. At the end of that year, they published a broader and more in-depth analysis of the enormous devaluation of farmland values and related financial stress that Wisconsin farmers were experiencing at that time. That report was called *Financial Status of Wisconsin Farming, 1986.*

### From one-time to once-a-year

The first report earned high marks from policymakers and people in the state's farm sector. This positive response motivated the authors to carry on the project as an annual agricultural outlook and situation report. The series was re-titled *Status of Wisconsin Farming* in 1987 and changed to *Status of Wisconsin Agriculture* in 1996. It has been published continuously except for a three-year hiatus during 1998-2000 due to faculty retirements and re-assignments.

In 2008, for the first time, a Wisconsin agricultural outlook forum was held in conjunction with the mid-January release of that year's Status of Wisconsin Agriculture report. That event, sponsored by the UW-Madison College of Agricultural and Life Sciences and Cooperative Extension, provided a venue where the authors could talk about the year gone by and the months ahead in a spirited give-and-take with representatives from the state's diverse farm and agribusiness sector.

### A look at timely issues

Status of Wisconsin Agricultural is more than a report card and crystal ball for the state's farm sector. Over the years it has also offered analyses of challenges and opportunities relating to Wisconsin agriculture and rural communities. The topics covered reflect the key rural policy issues that Wisconsin has faced over the last 25 years:

***State policies and programs:*** Working lands, use value assessment, smart growth, cooperative laws, farmer health insurance

***New products and markets:*** biofuels, bioenergy development, organic farming, value-added agriculture, genetically modified crops

***Rural development:*** Farming and the rural economy, economic impact of agriculture

***Dairy issues:*** Dairy trade, milk marketing orders and dairy policy, cheese pricing, dairy expansion and modernization, use of hired labor

***Industry trends:*** Green industry, forestry, farm woodlots, cranberries, livestock

### A chronicle of change

A look through past issues of Status of Wisconsin Agriculture points out some profound changes in Wisconsin's farming landscape over the last 25 years.

**Farm structure has shifted.** Wisconsin had only 4,000 fewer farms in 2009 than it had in 1986, and farm numbers have increased since 2006. But the nature of Wisconsin farms has changed dramatically. Far fewer farm households depend on farming for their livelihood. Data from the 2007 census of agriculture show that more than half of Wisconsin farms generated less than $10,000 in gross sales and together these farms accounted for less than 1 percent of total market value of agricultural products sold in 2007. At the other end of the spectrum, the 1,500 Wisconsin farms that sold more than $1 million worth of products accounted for 42.5 percent of all products sold. About 60 percent of the operators of family farms in Wisconsin in 2009 were retired or claimed something other than farming as their occupation.

**Land has left farming.** As farming has evolved from being a full-time occupation to a lifestyle for many, farm size has declined by 20 acres per farm between 1986 and 2009. The total agricultural land base has shrunk by 13.5 percent, a sobering loss.

**Cows are fewer but more productive.** Milk production is now roughly the same as it was 25 years ago, but it comes from 1/3 fewer cows. In 1993, Wisconsin dairy herds with fewer than 100 cows produced ¾ of the state's milk; in 2007 that had fallen to less than 40 percent. In the meantime, production from herds with more than 200 cows went from less than 6 percent of total production to 44 percent. Cheese output is up 44 percent and takes most of the state's milk supply.

**Meat animals play a smaller role.** Hogs are disappearing from the state and cattle are less important than they were 25 years ago. While U.S. hog numbers rose 27 percent between 1986 and 2009, Wisconsin numbers declined 73 percent.

**The Corn Belt has moved north.** Wisconsin corn production is up 22 percent and soybeans more than five-fold. But oats, once a mainstay of dairy rations on smaller farms, is disappearing.

**New types of enterprises have taken root.** There has been considerable growth in such enterprises as organic farming, sheep dairying, specialty crop and animal farming, farmstead value-added operations, and green industry/local produce production. This trend parallels an increasing divergence between big-scale commercial farms, largely geared to commodity production, and smaller-scale enterprises seeking to improve profit margins by providing differentiated products.

## Putting Wisconsin agriculture in context

Over the past quarter-century of change, one thing has remained constant: Agriculture plays a key part in Wisconsin's economy. The recent recession focused attention on the shrinking of the manufacturing sector and related job losses. Wisconsin farmers have expanded their output of raw products that feed into the state's manufacturing sector, creating non-farm jobs and supporting the economies of Wisconsin rural communities. Grave concerns have been expressed about the large and growing U.S. international trade deficit. Wisconsin farmers have expanded their foreign markets, helping to build a $30 billion U.S. trade surplus in agricultural products.

Over the next quarter-century many more changes will come, and the state's agricultural sector will undoubtedly look quite different in 2036 than it does today. The nature of change and the resulting appearance is unpredictable. But one thing is certain: Wisconsin agriculture will continue to play its lead role in sustaining and growing Wisconsin's economy.

# Status of Wisconsin Agriculture, 2011

## Executive Summary

Wisconsin farmers' bottom line improved in 2010 from a year earlier, but that's not saying much, because 2009 yielded the lowest Wisconsin net farm income since 2000. We estimate that Wisconsin net farm income last year was about $1.5 billion. While this is $700 million more than 2009, it is $500 million less than 2008 and $1.1 billion under the record set in 2007.

The improvement in net farm income came mainly from higher commodity prices for livestock products, principally milk. Gross revenue from milk sales was more than $900 million higher than the depressed level of 2009. Sales of meat animals gained about $100 million. Crop sales were also higher, by $60 million for corn and $30 million for soybeans and vegetables. But government payments dropped sharply because Milk Income Loss Contract (MILC) payments—very large in 2009—were not paid in 2010 due to higher milk prices.

Overall, farm production costs in 2010 were about the same as in 2009. Among farm-origin inputs, animal feeds and seeds cost less but feeder livestock, poults and replacement dairy cows and heifers cost more. Among manufactured inputs, fertilizer expenses were down 10 percent from 2009 and pesticide purchases were down 3.5 percent, but these were more than offset by 22 percent higher fuel costs. The cost of other inputs and services went up about 4.5 percent.

In the aggregate, Wisconsin's farmers' net worth going into 2010 was about where it was going into 2009. But breaking out the balance sheet by commodity sector shows a much different picture. Crop farmers added significantly to their net worth in 2009, while dairy farmers saw their asset value fall by more than $1 billion and their debt increase by more than $500 million. Cattle producers also lost net worth because of a huge loss in the value of their assets (mainly livestock), but managed to reduce their debt a bit. The debt-to-asset ratio across all Wisconsin farms deteriorated slightly in 2009, rising from 0.11 to 0.12. For dairy farmers, the ratio increased from 0.15 to 0.18.

### A Recap of 2010

After falling to zero in 2008 and going negative in 2009, real GDP growth recovered to about 2.5 percent in 2010. But persistent unemployment near 10 percent and the negative wealth effect of reduced real estate values have dampened consumer spending. For food, a major effect has been less money spent in medium- and up-scale restaurants. But while U.S. consumers are pinching pennies, foreign buyers of U.S. agricultural products have picked up the slack. U.S. agricultural exports in 2010 were the second highest on record and the U.S. agricultural trade surplus was about $30 billion.

Some farm input costs were lower in 2010; some higher. Farmer's fertilizer bills were down significantly from 2009 and interest rates also fell. But higher crude oil prices bumped up fuel costs and cash rents went up slightly due to generally higher crop prices.

Wisconsin dairy farmers saw their 2010 milk checks go up by about $3 per hundredweight from 2009 and, they sold 3 percent more milk at these higher prices. Feed bills were down from 2009, which further helped dairy farmers' net income. But the added net income wasn't nearly enough to rebuild net worth losses from 2009. Better milk prices came from stronger commodity prices, especially for butter and whey (up 40 percent). While domestic usage showed only a small gain measured on a fat basis milk equivalent (and a loss measured by skim solids), dairy exports were up sharply, absorbing much of the added milk production in 2010.

Other livestock producers also fared much better in 2010. On the strength of moderate increases in supply and increased exports, choice cattle, broilers and turkeys set new price records. Hog prices were up 30 percent from their very low level in 2009 and just missed setting a new record. But while feed costs were down from 2009, they were much higher compared to 2000-2006, so that 2010's record prices fell far short of yielding record margins to livestock and poultry producers.

For Wisconsin corn and soybean growers, 2010 was a fabulous year in nearly every respect—early planting, timely and abundant rains, warm temperatures, and early harvest with little or no drying required. Best of all, they had lots to sell at

good prices. The Wisconsin harvests of both corn and soybeans were record large and prices strengthened as harvest approached.

The rain and heat that was a boon to field crop growers was a bane to some fruit and vegetable growers. Cranberry yields were cut from early estimates by weather-induced fruit rot near harvest time. Heavy rains in the Central Sands and elsewhere caused disease problems and delayed harvest of potatoes. Wet, warm weather caused similar problems in fields of snap beans, green peas and sweet corn for processing. Apple and tart cherry growers were hit by frost during blossom set, reducing crop size from 2009 by 20 and 46 percent, respectively.

### What to Expect in 2011

The U.S economy has settled into what some economists call a *quasi-new normal* characterized by slower GDP growth, higher unemployment and reduced consumer spending. This phenomenon, which could last for 2-3 years, will constrain domestic food expenditures. But due to a weak dollar and buoyant Asian economies, agricultural exports are expected to be very strong, tempering weaker domestic demand.

With the exception of credit, which will remain cheap for eligible borrowers, the cost of farming inputs in 2011 will be higher. Cash rents will go up with higher crop prices. Feed and fertilizer will cost more for the same reason. Fuel prices will rise, perhaps substantially, with higher crude oil prices.

The state's dairy farmers will likely face some tough going in the first half of 2011, but things should get better later on. Milk prices at the start of the year will be below those experienced a year ago. That's mainly because a late-2010 surge in milk production yielded too much cheese to clear markets at favorable prices. And feed prices will be higher—perhaps as high as they were in 2008 when milk prices were close to record highs. Anticipated dairy farm liquidations and trimming of milk yields per cow will reduce milk production and strengthen milk prices later in 2011. For the year, the Wisconsin All Milk price is expected to average about $16.30 per hundredweight, about the same as in 2010.

Higher feed prices in 2011 will also hit the pocketbooks of other livestock producers, but higher livestock prices will alleviate the pain. Lower slaughter should put fed cattle prices above 2010. With stable pork output and expected larger exports, hog prices will match or exceed those seen in 2010. Likewise, barring unforeseen large expansion in supplies, broiler and turkey producers should be able to hold their price gains from 2010.

Wisconsin corn and soybean growers cannot hope to see a repeat of 2010's perfect growing season. Even so, they should fare very well price-wise. The lowest stocks-to-use ratio in 15 years and extension of the ethanol blender's credit and ethanol import tariff will likely yield record-high corn prices for the 2010/11 season—$1 per bushel above the previous record according to current USDA forecasts. Strong exports, mostly to China, will keep soybean prices high as well. USDA is forecasting a record U.S. average soybean price of $11.45 per bushel for 2010/11, $1.35 higher than the previous record.

This year's special articles are based on the results of a recent survey of Wisconsin dairy farmers conducted by the Wisconsin office of USDA's National Agricultural Statistics Service. The UW Program on Agricultural Technology Studies combined these results with previous findings to look at issues related to dairy farm structural change and to learn about farmers' response to the dairy financial crisis of 2009, their opinions on certain farm policies, and their level of health insurance coverage.

# I. Status of the Wisconsin Farm Economy

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## Wisconsin Farm Income

Wisconsin farm income rebounded in 2010, largely because milk prices rose from the severely depressed levels of 2009 We estimate Wisconsin net farm income at $1.53 billion. This is a $700-million improvement over 2009, when Wisconsin farmers netted $850 million, their lowest take since 2000. But while they are doing much better than a year ago, Wisconsin farmers earned $1.1 billion less in 2010 than in 2007 and $500 million less than in 2008.

Wisconsin milk sales in 2010 are estimated at $4.2 billion, almost $1 billion higher than 2009 but $350 million below those of 2008. Sales of meat animals (primarily cattle and hogs) were up more than $100 million. Cash receipts from the sale of poultry and eggs and other livestock products combined were up about $40 million.

Ignoring the large inventory adjustment in 2009, receipts from 2010 sales of Wisconsin crops were up about $135 million. Corn and other feed grain sales were $60 million higher and soybean sales were up $30 million. Sales of fruits were flat, but vegetable receipts were up an estimated $30 million.

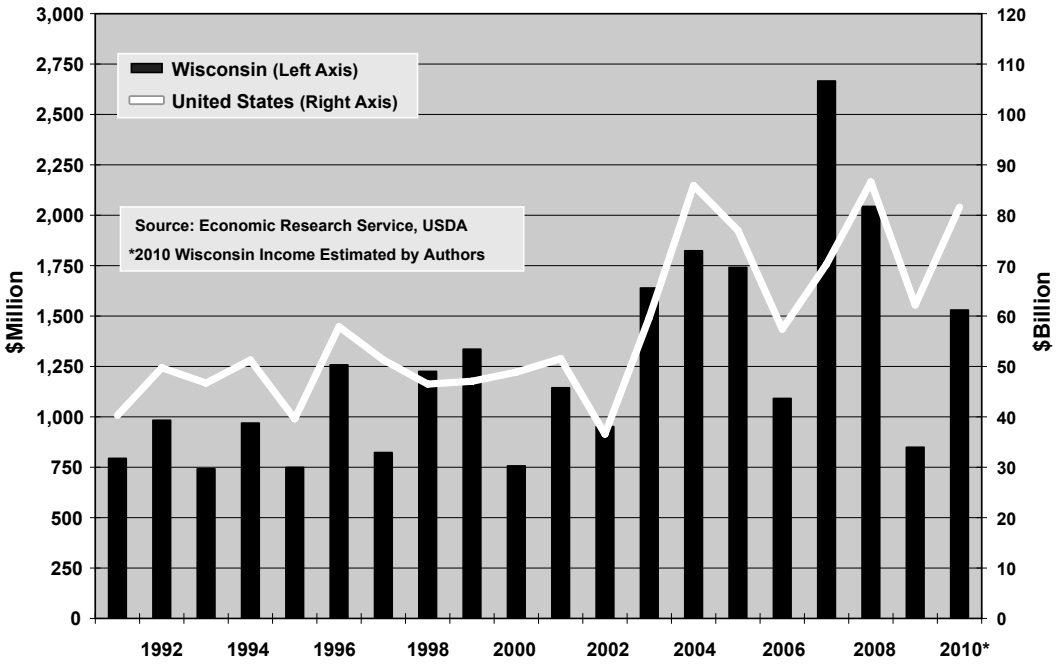
Total expenses of Wisconsin farmers were up only about $80 million from the previous year. Feed costs were lower. Fuel costs were higher but were offset by lower fertilizer costs.

Over the last several years, Wisconsin net farm income has been considerably more volatile than that of the nation as a whole. Between 2006 and 2007, Wisconsin income jumped 144 percent while the national figure gained only 22 percent. Wisconsin net farm income plunged by 58 percent between 2008 and 2009, while the nation showed only a 28 percent drop. In 2010, it rose 80 percent, while U.S. income was up only 31 percent. The wider fluctuations in Wisconsin's net farm earnings reflect the dominance of milk in our commodity mix and the increased volatility of milk prices in recent years.

## Wisconsin Farm Balance Sheet

USDA's Economic Research Service estimated that Wisconsin farmers held assets of $64.5 billion at the end of 2009. They held debts of $7.7 billion, putting their net worth at an estimated $56.8 billion. Overall,

**Net Farm Income: U.S. and Wisconsin**



## Derivation of Wisconsin Net Farm Income ($1000)

| | | *2008* | *2009* | *2010 (Est.)* |
|---|---|---|---|---|
| | **Value of crop production**: | | | |
| | Food grains | 156,026 | 101,870 | 105,000 |
| | Feed crops | 1,325,769 | 1,098,740 | 1,160,000 |
| | Oil crops | 482,247 | 530,823 | 560,000 |
| | Fruits and tree nuts | 287,091 | 240,084 | 240,000 |
| | Vegetables | 573,464 | 525,809 | 555,000 |
| | All other crops | 330,875 | 333,431 | 350,000 |
| | Home consumption | 3,714 | 4,115 | 5,000 |
| | Inventory adjustment | -67,525 | 190,717 | 0 |
| | Total Crops | 3,091,661 | 3,025,589 | 2,975,000 |
| plus: | **Value of livestock production**: | | | |
| | Meat animals | 938,366 | 825,435 | 940,000 |
| | Dairy products | 4,571,532 | 3,270,677 | 4,215,000 |
| | Poultry and eggs | 467,125 | 347,914 | 380,000 |
| | Miscellaneous livestock | 355,176 | 334,841 | 340,000 |
| | Home consumption | 18,373 | 22,091 | 22,000 |
| | Value of inventory adjustment | -6,316 | 58,558 | 0 |
| | Total Livestock | 6,345,173 | 4,856,336 | 5,895,000 |
| plus: | **Revenues from services and forestry:** | | | |
| | Machine hire and custom work | 84,925 | 120,121 | 125,000 |
| | Forest products sold | 20,750 | 20,760 | 20,000 |
| | Other farm income | 374,937 | 352,687 | 330,000 |
| | Gross imputed rental value of farm dwellings | 908,732 | 899,411 | 925,000 |
| | Total | 1,389,344 | 1,392,979 | 1,400,000 |
| equals | **Value of agricultural sector production** | 10,826,178 | 9,274,904 | 10,270,000 |
| less: | **Purchased inputs:** | | | |
| | Farm origin | 1,991,441 | 1,908,138 | 1,890,000 |
| | Manufactured inputs | 1,569,704 | 1,444,873 | 1,450,000 |
| | Other purchased inputs and Services | 2,143,551 | 2,109,261 | 2,200,000 |
| | Total | 5,704,696 | 5,462,272 | 5,540,000 |
| plus: | **Government transactions:** | | | |
| + | Direct Government payments | 229,991 | 406,445 | 200,000 |
| - | Motor vehicle registration and licensing fees | 13,882 | 15,077 | 15,000 |
| - | Property taxes | 360,000 | 380,000 | 385,000 |
| | Total | -143,891 | 11,368 | -200,000 |
| equals | **Gross value added** | 4,977,591 | 3,824,000 | 4,530,000 |
| less: | **Depreciation** | 1,327,722 | 1,391,145 | 1,400,000 |
| equals | **Net value added** | 3,649,869 | 2,432,855 | 3,130,000 |
| less: | **Payments to stakeholders** | | | |
| | Employee compensation (total hired labor) | 924,113 | 890,716 | 915,000 |
| | Net rent received by non-operator landlords | 163,238 | 183,048 | 185,000 |
| | Real estate and non-real estate interest | 518,660 | 509,737 | 500,000 |
| | Total | 1,606,011 | 1,583,501 | 1,600,000 |
| Equals | **Net Farm Income** | **2,043,858** | **849,354** | **1,530,000** |

Source: 2008 and 2009 – Economic Research Service, USDA; 2010 – Authors' estimate based primarily on year-to-year changes in U.S. commodity prices and production costs as Reported by USDA on November 29, 2010.

**Wisconsin Farm Balance Sheet by Production Specialty**

| | *General Cash Grains* | *Other Field Crops* | *Cattle* | *Dairy* | *All Other Farms* | *All Farms* |
|---|---|---|---|---|---|---|
| ***Assets ($Bil):*** | | | | | | |
| 2008 | 3.66 | 8.79 | 10.00 | 21.01 | 20.20 | 63.67 |
| 2009 | 4.42 | 9.73 | 8.56 | 19.95 | 21.84 | 64.50 |
| 2008-09 Change: | | | | | | |
| $Bil. | 0.76 | 0.93 | -1.44 | -1.06 | 1.64 | 0.83 |
| Percent | 20.71% | 10.60% | -14.37% | -5.05% | 8.10% | 1.30% |
| ***Liabilities ($Bil):*** | | | | | | |
| 2008 | 0.36 | 0.56 | 0.93 | 3.17 | 1.80 | 6.83 |
| 2009 | 0.51 | 0.51 | 0.83 | 3.68 | 2.15 | 7.68 |
| 2008-09 Change: | | | | | | |
| $Bil. | 0.15 | -0.05 | -0.10 | 0.51 | 0.35 | 0.85 |
| Percent | 41.11% | -9.33% | -11.02% | 15.93% | 19.48% | 12.42% |
| ***Net Worth ($Bil):*** | | | | | | |
| 2008 | 3.30 | 8.23 | 9.07 | 17.84 | 18.40 | 56.84 |
| 2009 | 3.91 | 9.21 | 7.73 | 16.27 | 19.69 | 56.82 |
| 2008-09 Change: | | | | | | |
| $Bil. | 0.61 | 0.99 | -1.33 | -1.57 | 1.29 | -0.02 |
| Percent | 18.50% | 11.97% | -14.71% | -8.78% | 6.98% | -0.03% |

Source: USDA, ERS Agricultural Resource Management System Data Base

assets were up over 2008 by almost the same amount as debt, leaving Wisconsin farmers' equity unchanged. However, the debt-to-asset ratio rose from 0.107 in 2008 to 0.119 in 2009.

But while there wasn't much change in the statewide balance sheet, net worth improved considerably for some farms and worsened for others, and the direction of the change depended heavily on what the farm produced. As a whole, those who were marketing crops improved their balance sheets. General cash grain farms increased their net worth by 18.5 percent and farms marketing other field crops gained 12 percent. But cattle and dairy farms took a major financial hit—assets fell and debts increased—thanks to very low market prices coupled with very high feed costs in 2009. The combined loss in equity for cattle and dairy farms was estimated at nearly $3 billion.

The value of assets held by Wisconsin farmers has increased significantly over the past decade. Total Wisconsin farm asset holdings rose from $36 billion in 2000 to $64.5 billion in 2009, a 79 percent climb. Most of that increase occurred between 2000 and 2006.

That large increase in farm asset values mostly reflects appreciation in real estate. Farmland values grew at rates of 10 percent or more per year in the first half of the decade and have risen at more modest rates since then. The slowdown in the appreciation of Wisconsin farm real estate values coincides with the downturn in the U.S. housing market. But while there is less demand for farmland for recreational use or investment, strong crop prices have increased demand from farmers. This has prevented the farmland market from taking the kind for freefall that has plagued the residential home market. This stability of farm real estate value has helped keep Wisconsin farmers' balance sheets strong.

With the exception of 2009, debts of Wisconsin farmers have risen very slightly over the last decade. This limited growth in borrowing signals that farmers have not been going on debt-financed farmland-buying binges. If that were the case, debts would have risen along with assets.

Further evidence of Wisconsin farmers' fiscal discipline lies in their low debt-to-asset position. Since the mid-1980s, debts relative to assets have been steadily declining. In the last couple of years the debt-to-asset ratio has ticked up a bit, but it is still quite low. The fact that debts are less than 12 percent of the value of assets means that the Wisconsin farm sector is highly solvent and well positioned to make good on its loan obligations.

**Wisconsin Farms by Farm Type, 2009**

| Farm Type | Farm Households | Total Operator Household Income, 2009 | | | Total as % of U.S. avg Household Income |
|---|---|---|---|---|---|
| | | From Farming Activities | From Off-farm Sources | Total | |
| | No. | Average $ per Farm | | | Percent |
| ***Small Family Farms (less than $250,000 in annual sales)*** | | | | | |
| Retirement | 14,318 | -1,853 | 49,327 | 47,474 | 69.8 |
| Residential/lifestyle | 30,589 | -9,671 | 82,156 | 72,486 | 106.6 |
| Farming occupation, sales < $100K | 13,815 | -504 | 39,448 | 39,952 | 58.0 |
| Farming occupation, sales $100-$250K | 8,181 | 16,808 | 28,788 | 45,596 | 67.1 |
| ***Commercial Family Farms ($250,000 or more in annual sales)*** | | | | | |
| Large (sales $250,000-499,999) | 5,321 | 51,777 | 24,311 | 76,088 | 111.9 |
| Very large (sales more than $500,000) | 3,379 | 97,128 | 65,196 | 162,324 | 239.0 |
| ***All Farms Total/Average*** | 75,603 | 5,448 | 57,623 | 63,071 | 92.8 |

Source: Economic Research Service, USDA: http://www.ers.usda.gov/Data/ARMS/app/default.aspx?survey=FINANCE

## Variation in Wisconsin Farm Income by Type of Farm[1]

USDA's Economic Research Service's (ERS) "farm typology" system assigns family farms to one of six categories, depending on the farm's gross sales of agricultural products and the primary occupation claimed by its principal operator.[2] Those categories are subdivided as follows:

**Small family farms** (annual gross sales of less than $250,000):

- Retirement farms–operator lists occupation as "retired"
- Residential/lifestyle farms–occupation listed as "other than farming"
- Low sales farms — occupation is "farming," annual gross sales under $100,000
- High-sales farms—occupation is "farming," annual gross sales of $100,000–$249,999

**Commercial farms** (annual sales above $250,000):

- Large family farms (annual sales of $250,000–$499,999)
- Very large family farms (sales over $500,000).

The number of Wisconsin farm households and the amount and source of household income for these farm types in 2009 are shown in the table above. Overall, Wisconsin farm operators in 2009 had household income of about $63,000, which was 93 percent U.S. average household income. Of that total, income from farming averaged $5,400 and off-farm income averaged $58,000. Stated differently, Wisconsin farmers in 2009, on average, earned 11 times more income from off-farm sources than they did from farming.[3]

Of the 75,603 family farms in Wisconsin in 2009, about 67,000 (88.5 percent) had sales less than $250,000. Of these, 45 percent were residential/lifestyle farms whose operators reported losses from farming activities averaging $9,700 in 2009. At the same time, these farms reported total 2009 household income above the average U.S. average. Intentionally or not, these operators—40 percent of all Wisconsin farmers—are using substantial non-farm income to subsidize their farming operations.

[1] Data used in this section are from the *Agricultural Resource Management Survey* (ARMS) conducted jointly by the Economic Research Service and the National Agricultural Statistics Service. For definitions of farm households and farm household income, see: http://www.ers.usda.gov/Briefing/WellBeing/glossary.htm#farmoperatorhousehold.

[2] ERS also includes non-family farms in its typology. These are a combination of institutional (e.g., prison farms and UW-Madison research stations) and non-family corporation farms. Since non-family farms do not have a designated household operator, they are not consistent with the family farm households included in this disaggregation of household income. For 2009, ARMS counted 2,397 non-family farms accounting for about 8 percent of gross sales of all Wisconsin farms.

[3] This ratio is abnormally high due to the very low net income earned by Wisconsin farmers in 2009. In 2008, net farm income per farm was about double what it was in 2009. Total operator income averaged 106 percent of average U.S. household income in 2008, and off-farm income was 5.5 times farm income.

Household incomes of the 22,000 small Wisconsin family farms whose operators claimed farming as their primary occupation were well under the national average. Those farms with less than $100,000 in 2009 farm sales earned only 58 percent of the U.S. average household income and had farming losses of about $500. These farmers are undoubtedly struggling financially. Their farms are not profitable yet are too large to allow significant off-farm employment.

Wisconsin commercial family farms were relatively few in number (11.5 percent of all farms) but had relatively high household income. Moreover, farm income was by far the largest contributor to total household income.

Data from the 2007 Census of Agriculture provide further insights into the structure of Wisconsin farming.[4]

The table below focuses on the largest of Wisconsin farms, those accounting for half of total farm sales in 2007. There were 2,317 farms in that group, 3 percent of all Wisconsin farms. Gross sales from these farms averaged $1.9 million compared to the state average of $114,000, and average farm size was about 1,300 acres compared to the state average of 200 acres. While these largest farms accounted for half of Wisconsin's 2007 farm product sales, they accounted for only 23 percent of Wisconsin land and building value and 22 percent of the total value of machinery and equipment. This disparity indicates that productivity, as measured by sales per unit of production resources, is much higher for the largest farms.

The figure on page 6 further disaggregates Wisconsin farm numbers and sales by economic class and dramatizes the skewed distribution of sales toward larger farms. Farms with 2007 sales of less than $100,000 represented 78.5 percent of all farms and accounted for 8.7 percent of total farm product sales. Farms with sales of more than $1 million represented less than 2 percent of farms and accounted for 42.3 percent of total sales.

The concentration in farm sales among larger farms differs by commodity, as illustrated in the table below. Poultry and egg farms show the highest sales concentration, with 79 percent of 2007 sales from million-dollar-plus farms, followed by vegetable farms at 72 percent. Sales of farms producing corn, wheat and soybeans and farms raising cattle were the least concentrated, with million-dollar farms accounting for 30 percent or less of total sales. The percent of milk sales from million-dollar farms was about the same as all farm commodity sales, but fewer than 0.5 percent of dairy farms reported annual milk sales of less than $5,000, representing less than 0.01 percent of total sales.

In summary, Wisconsin farming has become a mixture of a three distinctly different farm types:

***1. A small number of commercial family farms*** that depend almost exclusively on farming for family income and generate farm sales of more than $250,000. These farms account for most of Wisconsin farm sales and have household income well above the national average.

***2. A larger number of smaller family farms*** that also depend heavily on farming for family income, but that are caught in the middle. These farms are too large to allow operators time to earn significant off-farm income and too small to provide adequate family income from farming alone. Consequently, household income for these farms falls below the national average.

***3. A very large number of retirement and residential/lifestyle farms*** that subsidize farming losses with income from other sources. Even after covering farming losses, most of these families end up with household income higher than the national average. These farms account for a small percentage of Wisconsin farm sales, but they are very important to maintaining the viability of rural communities.

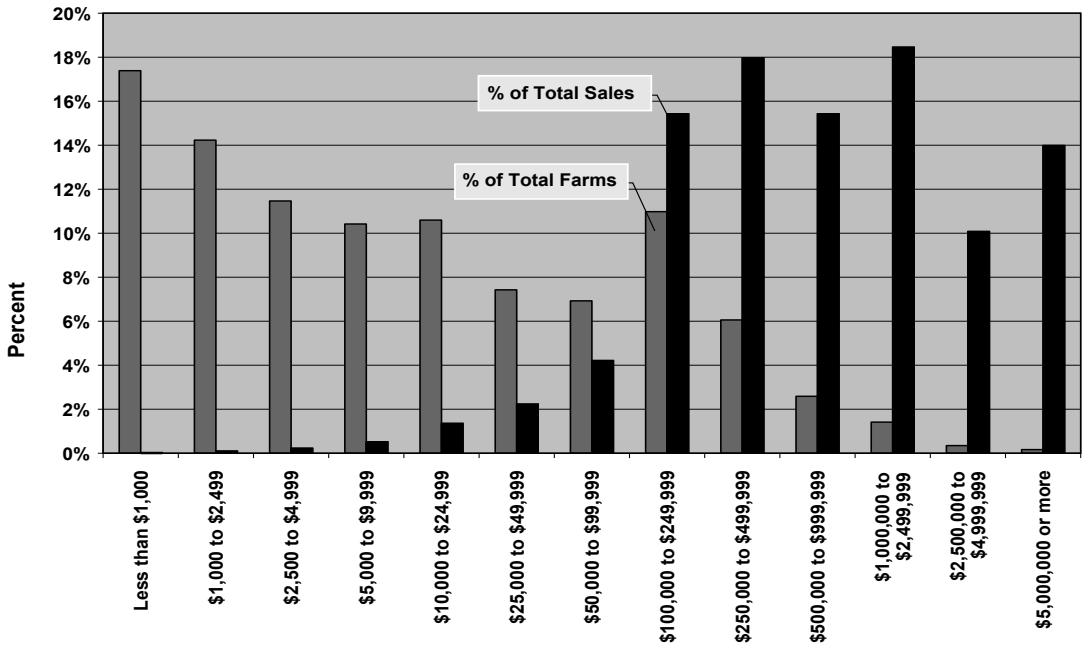
[4]Farm definitions differ slightly between the Census of Agriculture and the ERS ARMS survey, resulting in a larger farm count for the census.

**Concentration in Wisconsin Farming**

| | | *Fewest Number of Farms Accounting for 50% of Sales* | |
|---|---|---|---|
| ***Measure*** | ***Total*** | ***Unit Value*** | ***Percent of Total*** |
| Number of Farms | 78,463 | 2,317 | 3.0% |
| Market value of agricultural products sold ($Mil.) | 8,967 | 4,484 | 50.0% |
| Average per farm ($) | $114,288 | $1,935,157 | NA |
| Land in farms (mil. acres) | 15,190 | 2,991 | 19.7% |
| Average size of farm (acres) | 194 | 1,291 | NA |
| Est. market value of land and bldgs ($Mil.) | 48,994 | 11,278 | 23.0% |
| Average per farm ($) | 624,428 | 4,867,650 | NA |
| Average per acre ($) | 3,225 | 3,771 | NA |
| Est. market value of mach. & equipment ($Mil.) | 7,554 | 1,636 | 21.7% |

Source: Census of Agriculture, 2007. Wisconsin edition, table #40.

## Distribution of Agricultural Product Sales by Size Class, Wisconsin, 2007




## Distribution of Sales Between Smallest and Largest Wisconsin Farms, 2007

| | | | *% of Farms:* | | *% of Sales from Farms:* | |
|---|---|---|---|---|---|---|
| | ***Total Farms Reporting Sales*** | ***Total Reported Sales ($ Million)*** | ***With sales less than $5,000*** | ***With sales more than $1 mil.*** | ***With sales less than $5,000*** | ***With sales more than $1 mil.*** |
| All Farm sales | 78,463 | $8,967 | 46.2% | 1.9% | 0.4% | 42.3% |
| Corn | 24,112 | 1,137 | 8.3% | 3.7% | 0.3% | 25.5% |
| Wheat | 5,377 | 97 | 2.5% | 7.8% | 0.3% | 30.3% |
| Soybeans | 13,821 | 391 | 4.0% | 4.1% | 0.3% | 16.7% |
| Vegetables* | 3,320 | 423 | 17.0% | 5.1% | 0.2% | 72.2% |
| Fruits, nuts & berries | 1,719 | 218 | 18.7% | 3.8% | 0.3% | 55.4% |
| Nursery products** | 1,635 | 244 | 15.3% | 2.7% | 0.2% | 48.2% |
| Cattle and calves | 30,193 | 1,015 | 14.2% | 3.6% | 0.9% | 27.4% |
| Milk (cow) | 14,270 | 4,573 | 0.3% | 6.7% | *** | 45.3% |
| Hogs and pigs | 3,516 | 100 | 32.6% | 2.6% | 1.0% | 38.4% |
| Poultry and eggs | 7,058 | 375 | 48.0% | 1.7% | 0.5% | 79.1% |

*Includes potatoes and melons.
**Includes greenhouse, floriculture and sod.
***Less than 0.01 percent
Source: Census of Agriculture, 2007. Wisconsin edition, table #59

# II. Current Outlook: Wisconsin Agricultural Commodities, Production Inputs and the General Economy

*In this section, analysts offer their insights on economic conditions for Wisconsin agriculture. Forecasts are provided for major Wisconsin farm commodities, farming inputs and the general economy. Interested readers are invited to contact authors for more current or more detailed information regarding their analyses.*

## The General Economy and Agricultural Trade

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### Synopsis

According to the National Bureau of Economic Research, the Great Recession began in December 2007 and ended in June 2009. But this doesn't mean that the U.S. economy is back to normal. To the contrary, it appears to be settling into a *quasi-new normal* that will persist for up to three years, a period that will feature slower-than-average real GDP growth of 2.25–2.75 percent per year, subdued consumer spending, consumer de-leveraging, a struggling housing market and stubbornly high unemployment. These all reflect both cyclical changes associated with a modest recovery and structural changes in the U.S. economy. Here is some of what is behind this complex quasi-new normal:

- Consumer spending will remain lower than prior to the Great Recession.
- Unlike the situation in many previous post-recession periods, there will be no robust recovery of the U.S. housing market to spur economic growth and employment.
- Major new tax and spending initiatives to stimulate the economy will be difficult to sell to Congress.
- Quantitative easing, the Federal Reserve's main available monetary tool, will likely do little to spur economic growth.
- Business expansion will be limited by economic and political uncertainty and lingering credit constraints.
- All of the above will weigh heavily on U.S. unemployment rates, which will remain stubbornly high for at least the next three years. And some cyclical unemployment will morph into structural unemployment that will persist after the business cycle turns more strongly upward.

There are some bright spots. Certain segments of the U.S. economy—especially commodity-based sectors and those with strong exports—have partially decoupled from the overall economy and are faring better than others. The U.S. farm sector will perform markedly better than the overall economy, at least in 2011. U.S. net farm income in 2011 should be modestly higher, powered by record agricultural exports. Profits of large firms that export to rapidly growing economies in Asia and Latin America should remain reasonably strong.

### The Quasi-New Normal

In the past few years, the term "new normal" has been popularized by

**Macroeconomic Statistics for the U.S. Economy**

| *Year or Quarter* | *Real GDP Growth* | *Unemployment Rate* | *Inflation Rate (CPI)* | *Housting Starts* | *Federal Surplus or Deficit* |
|---|---|---|---|---|---|
| | *%* | *%* | *%* | *(Mil. Units)* | *$ Billion (FY)* |
| **2000** | 3.7 | 4.0 | 3.4 | 1.573 | 236.1 |
| **2001** | 0.8 | 4.7 | 2.8 | 1.601 | 126.9 |
| **2002** | 1.8 | 5.8 | 1.6 | 1.710 | -160.3 |
| **2003** | 2.5 | 6.0 | 2.3 | 1.854 | -377.1 |
| **2004** | 3.6 | 5.5 | 2.7 | 1.950 | -412.8 |
| **2005** | 3.1 | 5.1 | 3.4 | 2.073 | -318.7 |
| **2006** | 2.7 | 4.6 | 3.2 | 1.812 | -248.2 |
| **2007** | 1.9 | 4.6 | 2.9 | 1.342 | -161.5 |
| **2008** | 0.0 | 5.8 | 3.8 | 0.900 | -454.8 |
| **2009** | -2.6 | 9.3 | -0.3 | 0.554 | -1,415.7 |
| **2010 Q1** | 3.7 | 9.7 | 1.5 | 0.617 | -328.9 |
| **Q2** | 1.7 | 9.7 | -0.7 | 0.602 | -287.0 |
| **Q3** | 2.5 | 9.6 | 1.5 | 0.589 | -290.1 |

*Source: Global Insight, U.S. Executive Summary, various issues, 2010.
Quarterly housing start figures for 2010 represent estimates of annual figures for the series.

certain financial gurus. Many versions of the new normal envision economic growth that is too slow to bring down unemployment and calls for forceful government intervention to help the struggling private sector. This article uses the term *quasi-new normal* to reflect the complexity of the scenario and the constraints on the federal government's ability to deal with slow growth.

The quasi-new normal manifests itself in macroeconomic statistics. Real U.S. GDP growth slowed in the 2nd and 3rd quarters after effects of federal stimulus legislation began to wear off and the rebuilding of business inventory slackened. While this probably does not signal that the U.S. economy is in danger of slipping back into recession, it is still a very big problem. The predicted real growth for the next three years is about one-quarter below the 3.4 percent average recorded over the past 37 years. Such anemic growth foreshadows a long, labored recovery.

The widely-publicized high unemployment rates for 2009 and 2010 averaged 4.5 percentage points higher than in 2000-2008. The inflation figures are tame. But higher inflation rates may emerge in certain sectors. USDA expects food prices to increase 2–3 percent in 2011.

U.S. housing starts in the first three quarters of 2010 averaged only about 29 percent of the peak in 2005. This reflects one facet of the U.S. housing industry that continues to face major difficulties.

Preliminary estimates for the 2010 fiscal year show a federal budget deficit of $1.29 trillion, down about $130 billion from 2009. The decline in the deficit from fiscal 2009 is good news, but the longer-term outlook for federal deficit and debt remains troubling.

## Forces Producing a Long, Labored Economic Recovery

### *Consumer Spending*

Consumer spending is a major growth engine, accounting for about 70 percent of U.S. real GDP, but it is currently sputtering. Consumers have begun to de-leverage and increase savings. The de-leveraging will continue since consumer debt was still about 118 percent of after-tax income in mid-2010, which is above the 100 percent figure that many economists regard as sustainable. Consumer saving is expected to increase from about 2 percent of incomes, the 2005–2007 average, to 4 to 5 percent of income during 2011–2014. More savings will improve household balance sheets but will curtail consumer spending.

Gone are times when consumers could borrow readily against the appreciating value of their houses. Lenders are scrutinizing consumer loan applications for proof of repayment ability, meaning that consumers will need to support more spending from current incomes. U.S. real disposable consumer incomes are projected to grow at a weak 1.4 percent rate in 2011, which will not support robust spending.

Spending will also be dampened by the reverse wealth effect — the fact that consumers spend less when they feel poorer. The bursting of the housing bubble and the stock market collapse erased about $13 trillion of U.S. household wealth. Goldman Sachs estimates that a $1 loss of wealth reduces consumer spending by a nickel. Going by this, a $13 trillion loss of wealth would bring a $650 billion spending cutback. Stock prices have partially recovered from March 2009 recession lows, but housing values remain sharply depressed, so reverse wealth effects will continue to unfold.

Tighter consumer budgets have had predictable impacts on food processors and food stores. Penny-pinching consumers have reduced purchases of major brands and bought more private-label foods.

### *The U.S. Housing Market*

Big parts of the U.S. housing market remain in a financial mess. The Home Affordable Modification Program and other federal efforts to provide relief to troubled mortgage markets have had limited success. Many borrowers with problem mortgages could not qualify under these programs. Others who restructured their mortgages under these programs couldn't make the reduced payments and ultimately defaulted. Federal tax credits to home buyers provided a temporary upsurge in home sales in late 2009 and early 2010. But, as with the "cash for clunkers" auto stimulus program, the home purchase tax credits cannibalized future home sales. U.S. home sales declined after the tax credits expired on April 30, 2010.

In the fall of 2010, Federal Reserve chairman Ben Bernanke reported that more than 20 percent of U.S. borrowers were "under water," meaning they owed more on their mortgages than their houses were worth, and an additional 33 percent had equity cushions of 10 percent or less. More than 25 percent of the home mortgages in Nevada, Arizona, Florida, California and Michigan were under water in late 2010. Underwater mortgages often lead to strategic defaults, in which homeowners who can afford to make payments opt not to do so. Strategic defaults accounted for an estimated 25 percent of U.S. mortgage loan defaults in 2009.

In mid-2010, "green shoots" had begun to appear in a number of metropolitan housing markets and U.S. average home prices appeared to be

bottoming out or increasing slightly. The ratio of home prices to rents also indicated that housing prices were near fair value.

But the price recovery was short-circuited by continuing defaults, problematic foreclosure procedures and an overstock of unsold houses. Prices have been driven down by the large discounts needed to sell foreclosed properties or complete short sales and the increased inventory due to strategic defaults. These pressures probably will delay a strong recovery of home prices and return of a healthier housing market until late 2011 or 2012.

The housing difficulties have led to larger problems. Many no longer view home ownership as a way to build long-term equity, which has contributed to a decline in demand. In addition, hard-to-sell houses have become a ball-and-chain for workers who wish to move to areas with better job prospects. The International Monetary fund believes that this factor accounts for 0.50–1.25 percentage points of the U.S. unemployment rate and has compromised the famously flexible U.S. labor market. The decline in housing demand and the ball-and-chain effect likely signal long-term structural changes in the U.S. economy.

### *Deficits and Debts*

Voters in the 2010 elections were troubled by the trajectory of U.S. federal deficits and debts. Many candidates capitalized on this by promising to reduce deficits to sustainable levels. Voters also were reminded that the $787 billion federal stimulus package was sold on the promise that it would keep unemployment from rising above 8 percent. The Obama administration and some Congressional leaders argued that this and other stimulus programs, along with Federal Reserve actions, prevented the economy from sinking into a depression. If so, it was hard to demonstrate the link between these programs and the economic recovery. Importantly for many voters, the programs failed to put a big dent in unemployment.

A number of Keynesian economists say that it will take more stimulus spending to boost the economy out of a slow and labored recovery. The real problems, they argue, are long-run deficits and debt linked to Social Security, Medicare and Medicaid, rather than temporary increases in government spending aimed at putting the economy on a sound footing. They favor additional stimulus spending now coupled with later efforts to cut deficits and debt. But any new stimulus will be a difficult sell to the new U.S. Congress.

President Obama's Deficit and Debt Commission proposed steps to reduce U.S. deficits and debt over the long-term. In concept, such steps will garner widespread support. But cutting will become problematic when it comes to specific programs with large constituencies (e.g., USDA farm programs and entitlement programs). The power of the self-interest of these constituencies should not be underestimated. Thus, a big uncertainty facing the economy in the next several years is whether federal deficits can be put on a sound, sustainable trajectory. A failure of this effort will almost certainly be followed by nasty effects akin to those imposed by the bond markets on Greece and Ireland—but on a grander scale.

### *Quantitative Easing*

On November 3, 2010, Federal Reserve chairman Bernanke announced a new round of "quantitative easing" (QE2), under which the Fed would purchase about $75 billion of Treasury securities each month for the next eight months. QE2 follows QE, in effect during December 2008 to March 2010, in which the Fed bought about $1.7 trillion of treasury securities and mortgage-backed securities.

QE2 was undertaken partly by default. The Fed sees little chance that Congress and the Obama administration will agree on fiscal measures that might be combined with monetary policies to boost U.S. economic growth. Therefore, the Fed is using quantitative easing, the only major weapon it still has available, to stimulate the economy.

Quantitative easing is a less ominous name for monetizing the debt, or "printing money." In prosperous times, a QE2-type action would be avoided like Superman shuns kryptonite since it would produce inflation. But with relatively high unemployment and abundant excess capacity in the economy, the Fed believes there is little danger of pushing inflation up to undesired levels. Indeed, the Fed apparently favors measures to lift inflation to about 2 percent partly to reduce the threat of Japanese-style deflation.

Under QE2, the Fed plans to purchase Treasury securities concentrated in maturities averaging 5–6 years. Interest rates on Treasury securities vary inversely with yields: When security prices are driven up, yields fall. By purchasing relatively long-term securities, the Fed hopes to drive down interest rates on these Treasury securities and on non-government securities that are linked by arbitrage to interest rates on longer-term Treasuries. The Fed focused on depressing longer-term interest rates under QE2 since the agency already had pushed down short-term interest by keeping the federal funds rate at near zero for more than two years.

The Fed believes that QE2 will encourage investors to buy stocks and corporate bonds, raising the value of those riskier assets. QE2 is also expected to weaken the dollar and stimulate U.S. exports. Other exporting countries have criticized

the U.S. for taking steps that can reduce the value of the dollar, which might allow the U.S. to capture additional export market share.

Will QE2 stimulate the economy? Any effect on employment and real GDP growth will likely be modest. Macroeconomic Advisers LLC estimated that even if the Fed purchased $1.5 trillion of Treasury securities, it would reduce the jobless rate by only 0.3 percentage points in 2011 and 2012. Economists at Global Insight forecast that QE2 will boost U.S. real GDP growth by 0.1–0.2 percentage points in 2011.

The risks are numerous. Former Fed chairman Paul Volcker, who tamed rampant U.S. inflation in the early 1980s, worries that QE2 will do little to spur economic growth and could produce higher than expected inflation. He also thinks it could trigger competitive devaluations and protectionism by export competitors. But, perhaps most important, QE2 is not likely to elevate U.S. economic growth much from the trajectory associated with the quasi-new normal.

### *Economic and Political Uncertainty*

Large U.S. companies—especially those dealing with commodities and exporting, fared reasonably well in 2010. U.S. corporate profits grew by about 29 percent from 2009 to 2010. But many smaller companies can't be sure that demand for their products and services will grow enough to warrant new hires. And businesses of all sizes face uncertainty because of new federal regulations—some yet unwritten—stemming from the new financial regulatory law and the new health care legislation.

In this uncertain environment, investments by smaller firms, in particular, will be subdued. In addition, many large firms are sitting on cash reserves, waiting to see if the business environment will give them strong incentives to invest and resume robust hiring. Banks—especially the many smaller banks that still have weak balance sheets—and other lenders will limit lending to the financially-strongest firms.

### *Stubbornly High Unemployment*

U.S. unemployment rates were stuck at unusually high rates for much of 2010, and the 9.6 percent unemployment rate for the 3rd quarter does not tell the complete story. If statistics for unemployment, underemployment and those who have quit looking for work are summed, the total figure rises to about 17 percent.

There is some good news on the job front. Productivity gains in the U.S. economy slowed in the fall of 2010, meaning that employers won't be able to squeeze much more output out of the existing workforce. This should result in expanded hiring.

There were encouraging increases in private employment at times during 2010. But employment needs to climb by about 100,000 workers per month just to absorb increases in the work force resulting from population growth. Monthly job gains during much of 2010 failed to reach that, notably in November when net new jobs totaled only 39,000. This pushed the preliminary unemployment figure up to 9.8 percent for November 2010.

Unemployment varies by state, of course. The states with the highest unemployment in November —all above 22 percent—were Nevada, Michigan, California, Florida and Rhode Island. The five with the lowest unemployment that month—all below 6 percent—were North Dakota, South Dakota, Nebraska, New Hampshire and Vermont. Wisconsin's unemployment rate was 7.6 percent in November, 2.2 percentage points below the U.S. figure. For January–November, Wisconsin's jobless rate averaged 1.5 percentage points below the national rate.

In the U.S., the long-term unemployed (out 52 weeks or more) accounted for nearly a third of all unemployed workers in August 2010. This was particularly troubling for those aged 25–64 (prime earning years) who would typically be saving to educate their children and for retirement.

Many of the long-term unemployed will see their job skills deteriorate or become less relevant for the evolving job market. In particular, workers who have suffered long-term job losses in construction and manufacturing will find it difficult to find work in growth areas such as health care and information technology. Some who became unemployed during the cyclical downturn will morph into the structurally unemployed and will find it difficult to find jobs in the new economy.

The long-term unemployed suffer declining health and deteriorating job skills that makes it difficult for them to compete for good jobs. In addition, the nation will have elevated costs for unemployment compensation and will lose the productivity of these workers. Even deficit hawks in the new U.S. Congress might conclude that this situation calls for expanded government programs to retrain the long-term unemployed.

How long will it take for U.S. unemployment to decline to pre-recession levels? Okun's Law states that unemployment will fall by about one percentage point for every two points of economic growth above the long-term trend. Many economists now peg the long-term trend at about 2.5 percent of real GDP annually. So Okun's Law yields the dismal conclusion that U.S. unemployment will not fall

appreciably for at least the next 3 years, and perhaps a lot longer.

Stubbornly high unemployment creates a variety of effects elsewhere in the economy. Businesses will not resume robust hiring until they see increased demand for goods and services. Unemployed workers and those worried about losing their job will not be a source of strong consumer demand. Hence, the weak labor market is a major contributor to the quasi-new normal.

**U.S. Unemployment Statistics, August 2010**

| *Duration of Unemployment* | *Percentage of Unemployed by Age Group* | | | | |
|---|---|---|---|---|---|
| | *Under 24* | *25-44* | *45-64* | *65+* | *Total* |
| 26 weeks or less | 73% | 54% | 50% | 56% | 57% |
| 27-51 weeks | 9 | 13 | 15 | 9 | 13 |
| 52 weeks or more | 18 | 33 | 36 | 35 | 30 |

Source: Pew Fiscal Analysis of Current Population Survey data, August 2010.

## How Agriculture Will Fare

Prospects for the agriculture-agribusiness sector are mixed. The USDA forecasts that U.S. net farm income for 2010 will be about $81.6 billion, up almost a third from 2009 and 26 percent above the average for 2000-2009. In 2011, U.S. net farm income is expected to rise even further, mainly on the back of record agricultural exports.

After 2011, U.S. farming will be strongly affected by supply and demand for individual commodities. This will keep farming partially decoupled from the overall U.S. economy. Over the longer-run, strong exports and demand for crop-based biofuels should strengthen U.S. net farm income.

2010's higher net farm income reflected a near-17-percent increase in livestock revenue. Higher crop revenues in 2010 and 2011 are powered by global demand, low grain stocks relative to use, and higher prices for corn, soybeans, wheat, sugar and cotton. Strong export demand for U.S. livestock and crop products, particularly from the growing Asian market, should generate relatively high net farm incomes at least through 2011.

High net farm incomes were good news for machinery and input suppliers. Deere and Company reported $26 billion in revenue for fiscal 2010, up 12.6 percent from 2009. One industry group says that in September 2010, U.S. tractor sales were up 21 percent and combine sales were up 12 percent from a year earlier. Suppliers of crop inputs also expect improved revenues as farmers gear up for 2011 plantings. Cargill says that strong sales by a fertilizer subsidiary helped boost its profits by 68 percent in one quarter in 2010.

Earnings for many food firms and supermarkets will remain under pressure for at least a couple of years. Grocers are wary of passing along higher prices to penny-pinching consumers, so they will narrow their profit margins and expect their suppliers to do the same.

In addition, household-name products have lost market share to private labels and they may not get it back. The recession spurred many buyers to shift to these cheaper goods, and they may have found the two to be largely indistinguishable.

## The International Outlook

World Trade Organization economists forecast that 2010 merchandise exports from developed countries would be 11.5 percent higher than in 2009. Exports from the rest of the world were forecast to grow even faster, climbing 16.5 percent. The boost in exports followed a 12 percent decline from 2008 to 2009. The WTO says that export growth in 2010 will be the largest-ever year-over-year increase in records dating back to 1950.

Economists at Global Insight forecast that U.S. exports will grow by 8 to 9 percent in 2011, fueled by demand from Asia and Latin America and a weaker U.S. dollar. But it is unclear how much the dollar will weaken, especially against the Euro and currencies in some developing countries. The Euro weakens against the dollar each time a troubled EU nation (e.g., Ireland, Greece, Portugal, Spain) has a banking or debt crisis. When this happens, the dollar becomes a safe-haven. China and other Asian countries also have kept their currencies from appreciating strongly against the U.S. dollar.

China is a wild card. China has become a huge market for U.S. agricultural and non-agricultural products. Consequently, whenever Chinese officials signal that they might raise interest rates to slow growth, limit inflation or cap domestic prices, it sends shivers through U.S. commodity and financial markets. U.S. exporters of everything from copper to dairy products will find it advisable to develop sophisticated intelligence on China's financial and commodity markets if they want to avoid unpleasant surprises in future years.

The USDA forecasts U.S. agricultural exports of about $109 billion in FY 2010, second only to 2008's

record of $114.9 billion. U.S. agriculture will record a positive trade balance of about $29.7 billion, up from $23 billion in FY 2009. For FY 2011, the USDA forecasts record U.S. agricultural exports of $126.5 billion, with growth for most major product categories. Soybeans will see one of the largest increases. Dairy exports, however, are forecast to be $3.2 billion, down about 5 percent from $3.37 billion in FY 2010.

U.S. trade policy initiatives were limited in 2010, partly because politicians found trade to be a toxic issue in the elections. President Obama's Export Promotion Cabinet did develop plans for doubling U.S. exports over five years. The plans call for increasing advocacy and trade promotion, boosting export financing, removing trade barriers, enforcing U.S. trade rules, and promoting strong, sustainable and balanced growth in the world economy.

Economists at Global Insight forecast a more modest 40 percent increase from 2010 to 2015. That is probably more realistic, given that some of the Export Promotion Cabinet's ideas have been tried before without much success.

President Obama plans to ask Congress to ratify previously negotiated trade agreements with South Korea, Panama and Colombia after securing certain modifications of those pacts. The President's efforts to reach final agreement on the South Korea pact, which could substantially increase U.S. exports, succeeded in December 2010 after provisions on autos, beef, pork and other items were worked out. It is unclear when the three trade agreements will come before Congress.

The Doha Round of WTO negotiations, which began in 2001, remain stalled. U.S. agriculture could gain additional access to foreign markets under a Doha Round agreement, but there is no sign that this will happen any time soon. This is not good news for the efficient, trade-dependent U.S. agricultural sector.

A pair of thorny developments involving Mexico and China continue to fester. Mexico imposed tariffs on a number of U.S. imports in March 2009—an action okayed by a NAFTA court—because the U.S. failed to honor commitments to let Mexican trucks deliver products here. In 2007, a U.S. pilot program showed that Mexican trucks could operate safely here, but Congress killed the program in 2009 at the urging of the Teamsters Union. No progress was made on the issue in 2010, so in August Mexico revised the list of U.S. items subject to tariffs. As part of this, Mexico imposed 20-25 percent tariffs on four types of cheeses that used to enter Mexico duty free.

China levied tariffs on U.S. chicken parts in 2010, claiming that the U.S. sold chicken below cost there. There is little evidence to support this. Some analysts see this as retaliation for higher tariffs levied by the U.S. on Chinese tires in 2009 to signal its dissatisfaction with China's artificially low exchange rate. This spat probably doesn't mark the beginnings of a trade war, but it represents a troubling exchange between important trading partners.

## The Bottom Line

Barring major surprises, the U.S. economy will continue to grow at subdued rates in 2011 and for at least a couple of years beyond. The biggest risk probably resides with the giant housing market. Any sharp decline in housing prices could tip the economy back into recession. Some large state budget shortfalls and financial difficulties in commercial real estate could weigh on the recovery but seem unlikely to push the U.S. economy into recession.

Over the longer-run, the U.S. economy faces serious problems with long-term unemployment and unsustainable federal deficits and debt. The Administration and Congress can't put off dealing with the latter problem indefinitely, since bond markets will force fiscal policy changes at some point.

Unfortunately, the downside risks appear greater than the upside possibilities. Sectors such as farming, which will remain partially decoupled from the overall U.S. economy, will fare better than the overall economy for at least the next year. U.S. agricultural and non-agricultural exports could be even larger than expected, depending on exchange rates and a host of difficult-to-predict events. Stronger exports and a smaller current account deficit would be an exceedingly healthy development. Among other things, it would reduce the U.S. economy's dependence on consumer spending as a growth engine.

## Farm Production Inputs and Services

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### Credit

There should be plenty of money available to lend to farmers in 2011, so those who meet lenders' basic credit standards should be able to borrow the money they need. The U.S. banking system is generally flush with reserves, easily enough to meet the credit demands of farmers as well as other borrowers. This is largely due to the Federal Reserve's efforts to increase the supply of money in the economy. Since late 2008, the Fed has added about $1 trillion to the U.S. monetary base, which means that much more money available to support lending.

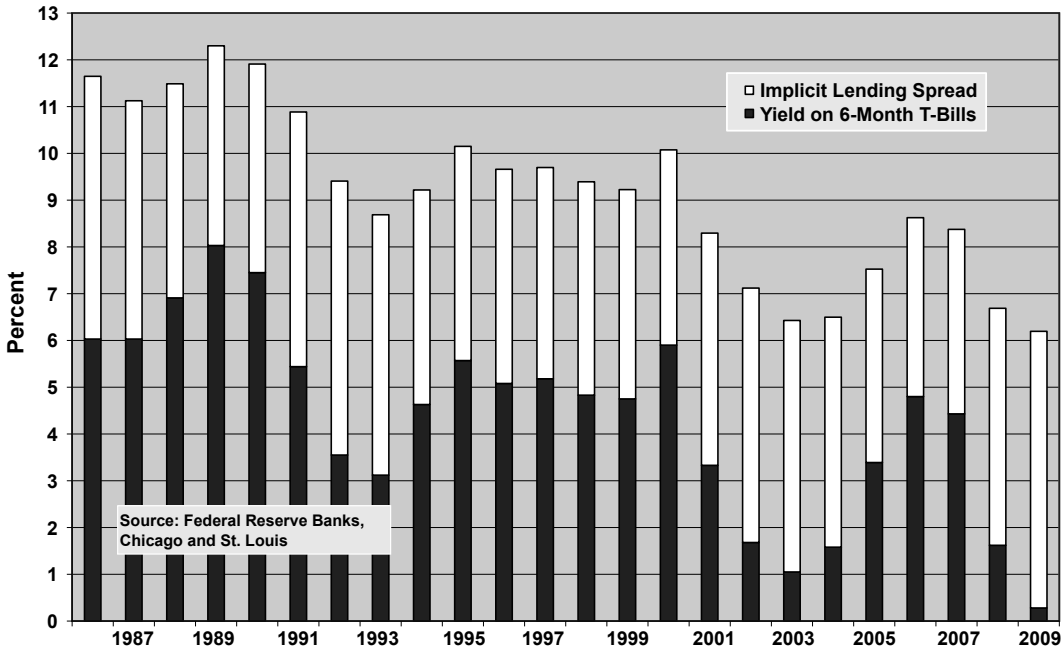
With no shortage of loanable funds, the only reason that agricultural credit would be tight in 2011 would be if lenders determined that a borrower was a poor credit risk. But most farmers should be able to meet heightened repayment and collateral standards of in the coming year, so credit refusals are not likely to be higher in 2011 than in other years.

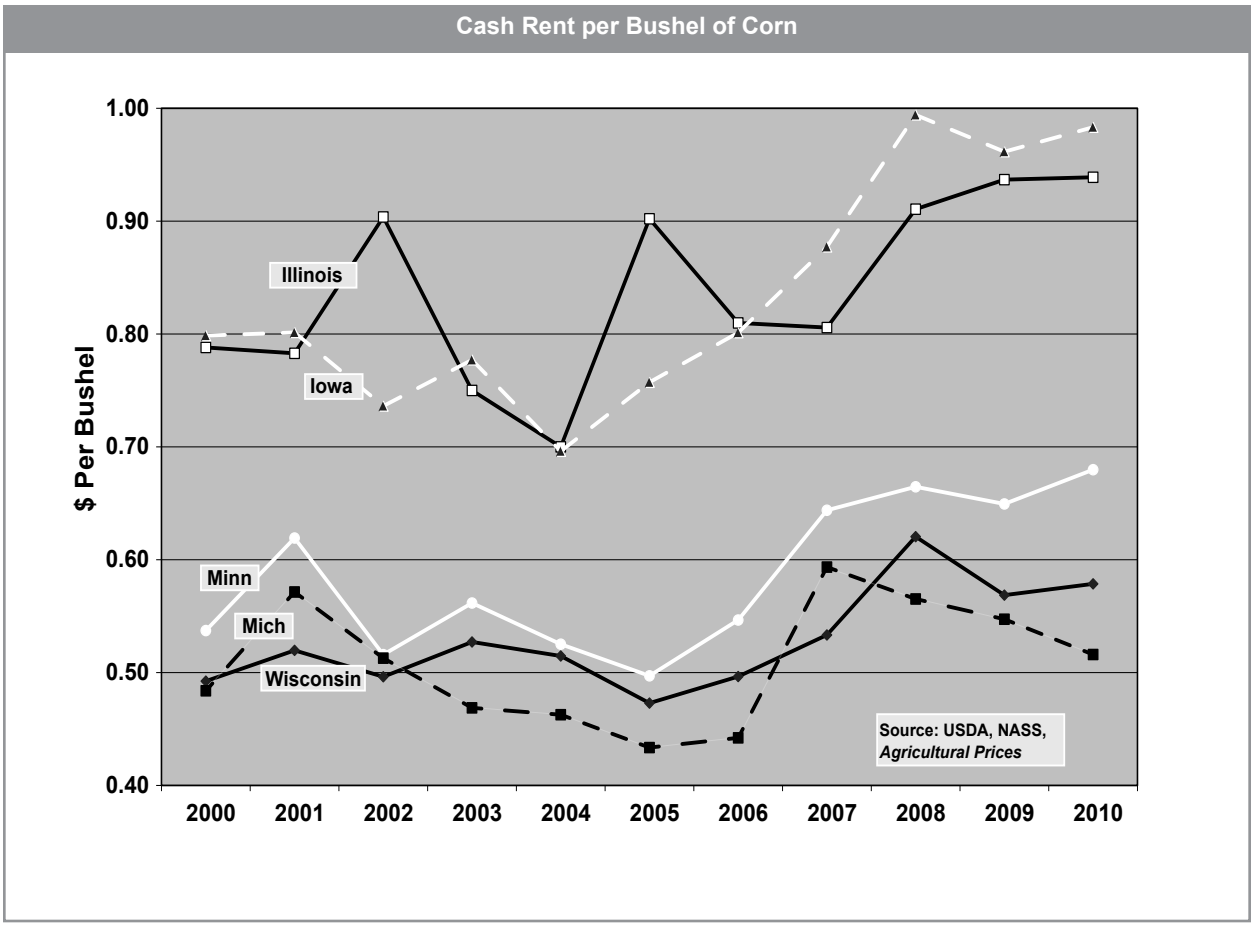
And those loans should be affordable. Since the mid 1980s, interest rates on farm operating loans have declined at a fairly steady rate. As of 2009, they were down to around 6 percent, about half of where they were 20 years ago. This mirrors a decline in interest rates in general. Interest rates on 6-month Treasury Bills fell from almost 5 percent in 2006 to near zero in 2009. If low T-Bill yields continue, interest rates on farm loans will not decline in 2011, but any increases should be modest.

The structure of agricultural lending markets has changed over the last decade. Commercial banks' share of the agricultural credit market has remained steady at 40 to 44 percent, but there has been a major shuffle in the positions of the other major agricultural lenders. The Farm Credit System has substantially increased its lending in both non real estate and real estate markets over the past decade. This was matched by a corresponding decrease in farm lending by insurance companies and other sources of credit. FCS's share increased by about 15 percentage points while that of other non-bank lenders fell by 14 percentage points.

The Farm Services Agency (FSA), the USDA's farm lending arm, has also seen its share of the farm lending market decline, but more modestly. FSA lending fell from about 4 percent of the total farm credit market in 1999 to about 2 percent in 2009. This doesn't mean the FSA is pulling out of agricultural lending. While it is cutting back on direct lending, it continues to provide guarantees on loans farmers receive from commercial banks or the Farm Credit System. FSA's loan guarantees help higher-risk farmer borrowers get the credit they would otherwise be unable to get from conventional lenders.

**Farm Operating Loan Interest Rates**






## Cash Rents

Cash rents for farm land in Wisconsin and neighboring states have been trending upward over the past decade. The year-to-year increases were relatively modest from 2000 to 2006 but they have stepped up in response to the dramatic increase in corn prices.

Between 2007 and 2010, average Wisconsin cash rents increased $20 per acre, from $72 to $92. Comparable increases in the four states contiguous to Wisconsin ranged from $7.50 in Michigan to $28 in Illinois. In 2010, Iowa reported the highest cash rent at $176 per acre followed by Illinois ($169), Minnesota ($121), Wisconsin ($92) and Michigan ($80.50).

Measuring cash rents as cents per bushel of corn yield per shows how higher corn prices have elevated the cost of land. By this measure, Wisconsin and all of its neighbors except Michigan (not a major corn producer) show significant increases in land cost. Rents in Illinois and Iowa are 30–40 cents per bushel higher than those paid in Wisconsin, Minnesota and Michigan. This means Illinois and Iowa tenants are bidding away greater portions of the returns they earn from growing corn. These higher rents for Illinois and Iowa may reflect greater competition between cash grain farmers who are trying to gain control of more acreage.

## Fertilizer and Fuel

Since 2002, fertilizer prices have risen and become more volatile. Nitrogen and phosphorous prices more than tripled between 2002 and 2008 before easing in 2009 and dropping even further in 2010. Potash prices in 2009 were five times what they were in 2002, but plummeted in 2010.

Fertilizer price increases were initially triggered by a run-up in corn and soybean prices, which spurred farmers in the United States and other countries to expand acreage and use more fertilizer. While U.S. demand for fertilizer has increased only marginally in the last few years, stepped-up crop and livestock production in China, has boosted international competition for crop inputs, including plant food.

Another cause of high fertilizer prices is a lack of competition among the world's few suppliers. Potash and phosphorous markets in particular are dominated by a few large firms, which are located in Canada, Russia and Australia and therefore not subject to U.S. antitrust laws. Price fixing has likely

**Average Annual Farm Prices of Major Fertilizers**

| Year | Nitrogen (Anhydrous Ammonia) | Phosphate (Superphosphate 44-46% $P_2O_5$) | Potash (Muriate of Potash 60-62% K) |
|---|---|---|---|
| | ——————Dollars per Ton—————— | | |
| 2002 | 250 | 221 | 164 |
| 2003 | 373 | 243 | 165 |
| 2004 | 379 | 266 | 181 |
| 2005 | 416 | 299 | 245 |
| 2006 | 521 | 324 | 273 |
| 2007 | 523 | 418 | 280 |
| 2008 | 755 | 800 | 561 |
| 2009 | 680 | 639 | 853 |
| 2010 | 499 | 507 | 511 |

Source: USDA, NASS, *Agricultural Prices*.

**Crude Oil and Fuel Prices**

| Year | Composite Crude Oil Refiner Acquisition Costs | Retail Motor Gasoline and On-Highway Diesel Fuel Prices | |
|---|---|---|---|
| | | Unleaded | Diesel |
| | $ per Barrel | $ per Gallon | |
| 1997 | 19.04 | 1.23 | 1.20 |
| 1998 | 12.52 | 1.06 | 1.04 |
| 1999 | 17.51 | 1.17 | 1.12 |
| 2000 | 28.26 | 1.51 | 1.49 |
| 2001 | 22.95 | 1.46 | 1.40 |
| 2002 | 24.10 | 1.36 | 1.32 |
| 2003 | 28.53 | 1.59 | 1.51 |
| 2004 | 36.98 | 1.88 | 1.81 |
| 2005 | 50.24 | 2.30 | 2.40 |
| 2006 | 60.24 | 2.59 | 2.71 |
| 2007 | 67.94 | 2.80 | 2.89 |
| 2008 | 94.74 | 3.27 | 3.80 |
| 2009 | 59.27 | 2.35 | 2.47 |
| 2010 | 76.53 | 2.76 | 2.97 |
| 2011* | 84.18 | 2.97 | 3.19 |

*2011 is forecast.
Source: Monthly Energy Review (MER): **http://www.eia.doe.gov/emeu/mer/petro.htm**

driven fertilizer prices higher than they would have been under competitive conditions. Fertilizer suppliers are able to control both price and supply. The price that this limited pool of suppliers sets is highly correlated with grain and oilseed prices. They can raise fertilizer prices when crop prices go up because farmers can afford to pay the higher rates. Given that corn and soybeans prices are well above what they were a year ago, it is almost certain that fertilizer prices will be up in 2011.

The exception may be potash, which will likely be priced near 2010 levels. This is a spillover from a price war that occurred in 2009, as major suppliers cut prices in order to move excess stocks. Suppliers miscalculated the demand for potash at the prices they had set for 2009.

Oil prices increased substantially between 2000 and 2008. The price of crude oil was in the mid-$20-per-barrel range in 2000 and 2001, but by 2008 the average annual price per barrel had climbed to near $95. This drove both gas and diesel fuel prices well above $3 per gallon across the nation.

The boom ended in 2009 with the global recession, which trimmed $35 per barrel off crude oil prices. But this decline was short-lived. Crude oil prices are expected to average around $75 per barrel for 2010 and could go up another $10 to $15 per barrel in 2011. This would yield prices for gasoline and diesel of around $3.10 and $3.35 per gallon, respectively.

## Longer-term Trends in Farm Input Costs[1]

Measured relative to a 1990-92 base, USDA's overall index of prices paid for commodities and services, interest, taxes, and wage

[1] The source for all farm cost indices used in this section is USDA, NASS, *Agricultural Prices.*

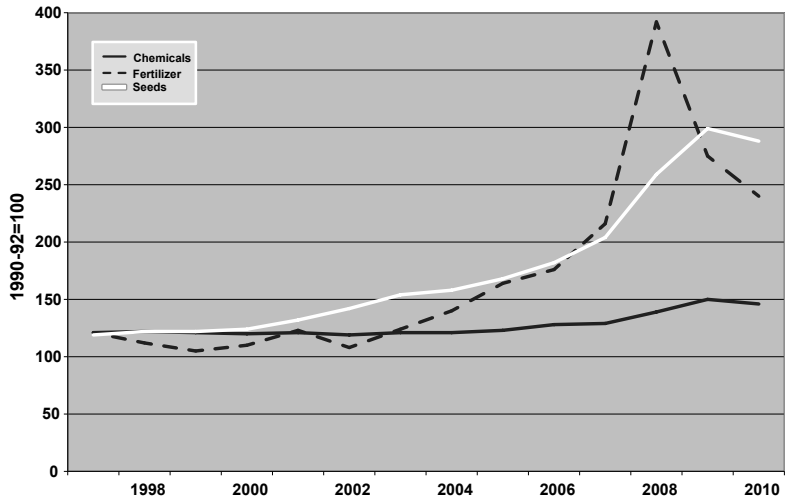
rates, or PPITW, increased from 118 to 183 between 1997 and 2010. This 55 percent increase in the gross index masks significant differences in changes in costs for major subgroups that make up the overall PPITW.

Among major cropping inputs, the index of fertilizer costs reached nearly 400 in 2008 before falling back to under 250 in 2010. Seed costs also rose rapidly in the latter part of the decade due to both stronger demand and the increased share of expensive GMO varieties in the mix of purchased seeds. However, the cost of herbicides, insecticides and fungicides showed little change. The index of chemical costs in 2010 was 37 points below the overall PPITW.

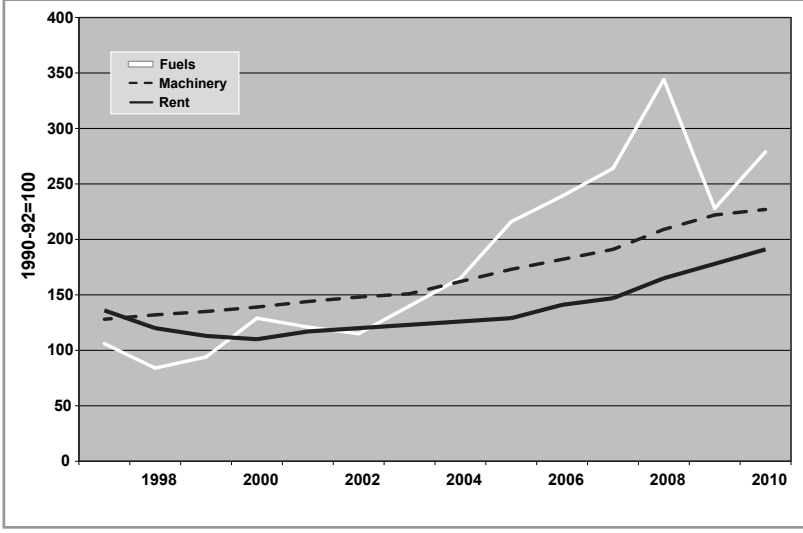
The index of prices paid for farm fuels rose steadily from 2003 to 2008, peaking at nearly 350 points before falling back sharply in 2009. The increase in machinery costs was much more gradual, with the index ending up in 2010 at 44 points higher than the PPITW. As noted earlier, land rents began climbing in tandem with crop prices, but the index for rent was only 9 points higher than the PPITW in 2010.

Price indices for interest, services and wages showed relatively little change between 1997 and 2010. Wage rates showed almost a constant year-to-year change, and the 2010 wage index was only 5 points higher than the PPITW. The index values for farm services and interest were below the PPITW in 2010. The interest index fell by 20 points between 2008 and 2010.

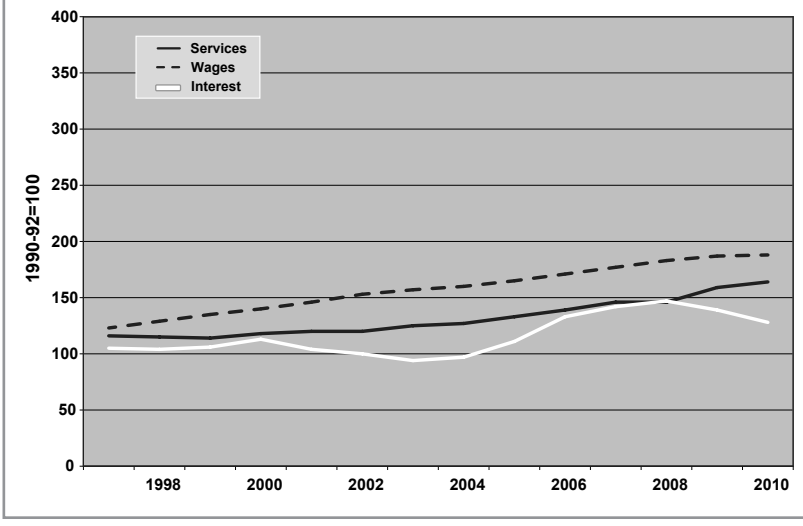
**Index of Prices Paid: Chemicals Fertilizer and Seeds**




**Index of Prices Paid: Fuels Machinery & Rent**




**Index of Prices Paid: Interest, Services and Wages**



# Dairy

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## 2010 Dairy Situation

In 2010, dairy farmers received some much-needed relief from the devastating milk prices of 2009. At its low in 2009, the U.S. all milk price hit $11.30 per hundredweight and averaged $12.83 for the year. For 2010, the U.S. all milk price averaged $16.30, a $3.47 improvement over the previous year. The Wisconsin all milk price averaged $16.18, up $3.10 from 2009. The Wisconsin price saw a smaller gain because the Class IV milk price was higher than Class III during most of 2010. This provided a relative price premium to regions with high Class IV and fluid milk utilization—most of Wisconsin's milk is used for Class III (cheese) products.

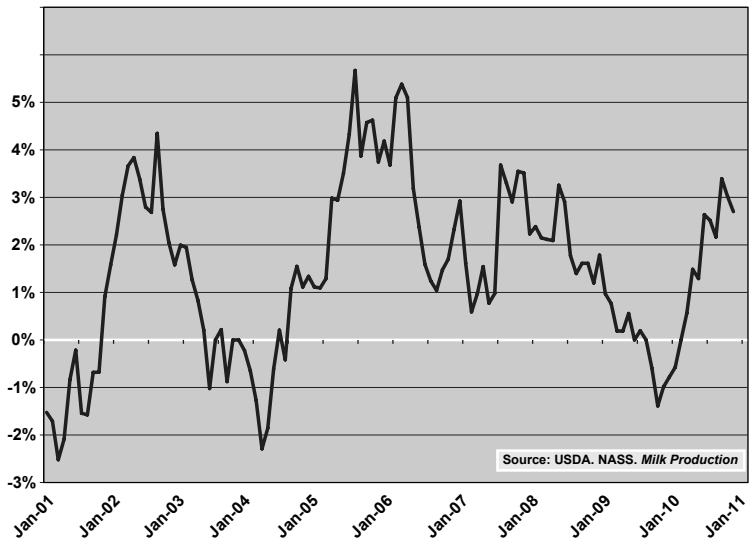
### *Milk Supply*

Dairy producers responded to the extraordinary high milk prices of 2007-08 by adding cows. The resulting increased milk production was a logical market response to those high prices, but unfortunately, the added milk hit the market just as the world slid into economic recession. The milk price collapse in 2009 was the result of high domestic milk production coupled with a decline in domestic and export demand for dairy products. It was the first year since 1991 that we have seen a decline in commercial disappearance of dairy products.

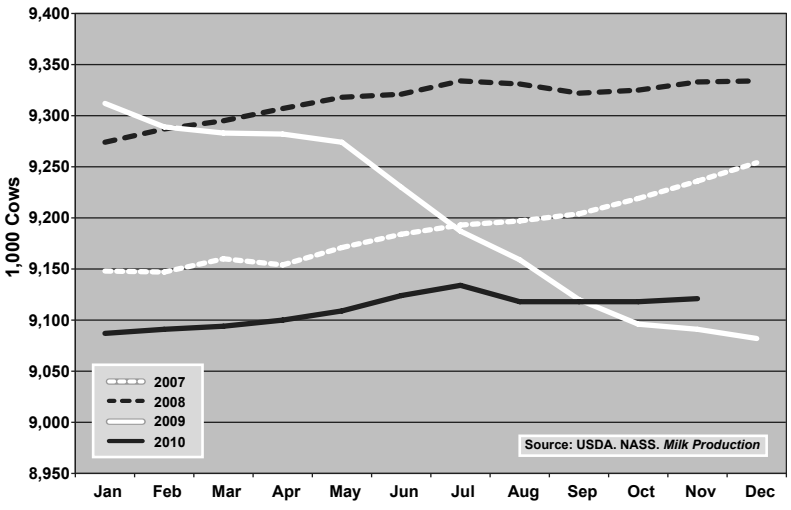
The milk price was so low during 2009 that for many producers, the variable costs of production were higher than the milk price. In fact, many producers who buy all of their feed found that in several months, their milk price did not cover their feed costs. If a dairy farm were a factory, under these circumstances the only rational response to such market signals would be to shut down until prices recover. With milk cows, it's not so easy.

Some producers did go out of business. But many more producers took a hard look at each cow in their herds to see if she was covering her individual costs. As a result, a large number of cows were culled, most of them from herds in western states, where purchased feeds comprise a much higher share of variable costs. Moderating milk prices in 2010 stopped this downsizing and actually caused cow numbers to increase somewhat. The average annual dairy cow herd in 2010 is estimated at 9.1 million head, 1 percent smaller than in 2009.

**Year-Over-Year Change in U.S. Milk Production**



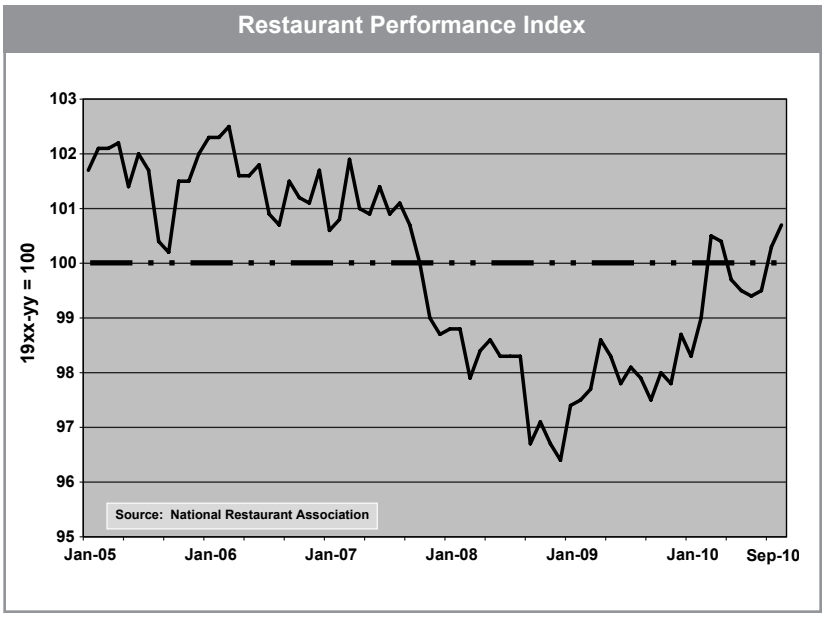

**Number of Dairy Cows, U.S.**



The other factor determining the volume of milk produced is production per cow, which is heavily influenced by feed costs. Feed prices began to increase in 2007, following a rise in corn prices tied to expanded demand from ethanol plants. Feed prices hit a peak in 2008 and, although they moderated, they seemed to find a new, higher plateau. Milk per cow showed only modest gains from 2007 through 2009. However, genetic gains continued to accrue over that period, and when milk prices increased in 2010, and returns over feed costs improved, so did milk per cow. U.S average milk per cow will average near 21,150 pounds, up 2.8 percent from the 20,576 pounds in 2009.

Higher cow numbers coupled with increased milk per cow has reversed the loss in milk production that occurred in 2009, when production fell to 189.32 billion pounds, 0.3 percent below 2008 levels. Production for 2010 is estimated at 192.7 billion pounds, an increase of 1.8 percent. Western states led the increase in cow numbers, milk per cow and total milk production in 2010 as their producers saw improved returns over feed costs. States like Arizona, California, Idaho and Washington had fewer cows, less milk per cow and less milk production in 2009. This all reversed in 2010, as cow numbers stabilized in California and increased in Arizona, Idaho and Washington. Higher milk yields further pushed up milk production. For example, November 2010 production was up over November 2009 by 8.7 percent for Arizona, 4.5 percent for California, 7.2 percent for Idaho and 6 percent for Washington.

While November production for Wisconsin was up just 0.5 percent, production for the year will show a stronger increase. For 2010, Wisconsin average dairy cow numbers averaged about 1.262 million head (up 0.4 percent) average milk per cow was about 20,630 pounds (up 2.7 percent) and total milk production was more than 26 billion pounds (up 3.2 percent). This continues a mid-decade turnaround in production and cow numbers. The downward trend in Wisconsin's milk production starting in 1989 reversed in 2005 and the decline in cow numbers reversed in 2006. Since 2004 production has increased almost 4 billion pounds, or 18 percent. Cow numbers have increased 26,000 head, or 2 percent, since 2005.




### *Dairy Product Demand*

The Great Recession, which began in the United States in December 2007, was global in nature and had a major impact on the U.S. dairy industry. As U.S. unemployment rose, the number of meals eaten away from home diminished significantly, and as a result, sales of manufactured dairy products used heavily in restaurants fell off. There were a few bright spots. Fluid milk consumption increased in 2009, which analysts attribute to families rediscovering their dining room table—they were eating at home more, so they stuck an extra gallon of milk in their shopping carts. But low fluid milk prices also helped. In 2010, higher prices seem to have reduced fluid consumption back to pre-2009 levels. Total fluid milk sales from January through September were down 1.5 percent.

The Restaurant Performance Index (RPI) tells us something about dairy product consumption and may also be a leading indicator of the health of the general economy. The RPI is based on reports from several thousand restaurants ranging from fine dining to fast food. An index value above 100 indicates expansion of the restaurant industry, while a number less than 100 suggests contraction. The RPI began to slide in 2007, long before the general population was aware of a looming recession. People were eating out less as incomes were becoming stretched. Currently, the RPI has been increasing and has had a few months above the 100 level, indicating some expansion. This is good news for cheese and butter sales, as the restaurant trade is a major outlet for these products. Butter sales were up more than 5 percent in 2010. While American cheese sales were up less than 1 percent other cheeses, mainly Italian varieties were up 4.6 percent. USDA estimates that 2010 domestic sales of milk and dairy products to be up just 0.6 percent on a fat equiv-

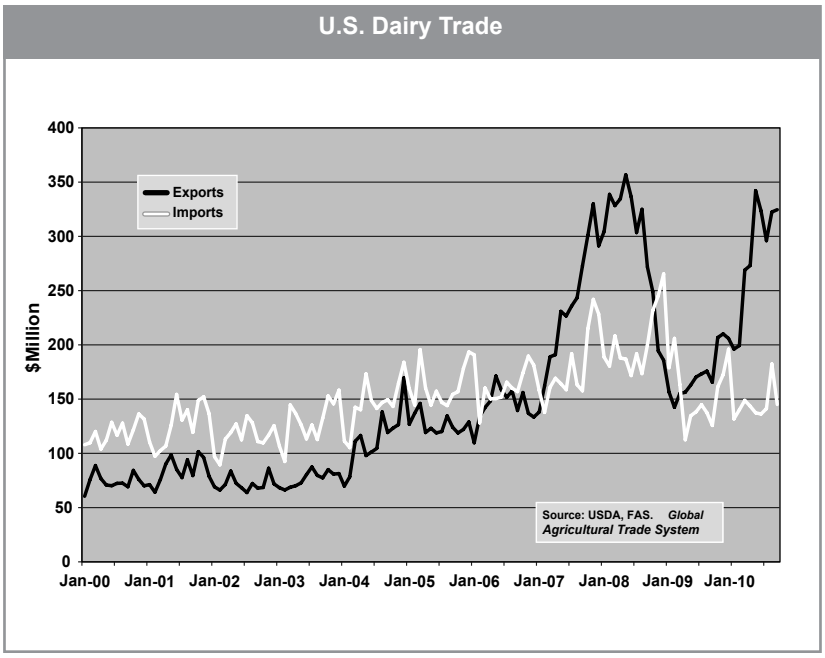
alent basis and 0.9 percent lower on a skim-solids equivalent basis.

While domestic markets account for about 90 percent of dairy product sales, the industry is looking more to exports as a source of revenue. The potential for domestic sales growth is likely limited by modest increases in per capita consumption and slow population growth. Consequently, exports are a portal for more significant growth in sales. For many years, export sales accounted for 3-4 percent of our total milk supply—and less in value than our imports of dairy products. In 2007 and 2008, for several reasons, our exports surged to more than 10 percent of our milk production and the value of U.S. dairy exports was substantially greater than imports.

Exports collapsed in 2009. The soft economies in other countries would not allow them the luxury of importing as much dairy product and tight credit made banks hesitant to issue letters of credit to importers. But, exports remained high by historical standards at nearly 9 percent of milk production. The economies of many of our foreign customers have rebounded more rapidly than our own, and in 2010, exports were comparable to the high levels of 2008. Compared to a year earlier, 2010 January–October exports were up 67 percent for nonfat dry milk/skim milk powder, 26 percent for whey proteins, 63 percent for cheese, 27 percent for lactose and 112 percent for butterfat. For the year, USDA estimates dairy exports will be up 82 percent on a fat equivalent basis and up 40 percent on a skim-solids equivalent basis.

***Dairy Stocks***

Commercial stocks of butter in 2010 dipped to some of the lowest levels since 2001, while natural cheese stocks were among the highest levels since the mid-1980s. October 31 butter stocks were down 43 percent from 2009 levels, while American cheese stocks were up 10 percent and total cheese stocks were up 7 percent. Several factors account for this big difference in inventory changes for butter and cheese.




Butterfat production was depressed in this country and across the globe. Feed quality was probably a factor, but so was unusually high global temperatures. January through September, 2010 was tied with the same period in 1988 as the warmest on record. September also marked the first time in modern history that the Northwest Passage and the Northern Sea Route were ice free. In the United States, several summer months that were the hottest on record for states east of the Continental Divide. Excessive heat in eastern Europe and Russia caused widespread drought and crop failure, and milk production in those regions suffered as well. Russia imported a significant amount of butter—much of it from the United States—to make up for a shortfall in their production. The combination of less butterfat being produced and greater export demand increased the price of butter dramatically.

As for cheese, heading into 2010, milk production levels were strong but domestic and export demand was down from previous years. Much of the extra milk production found its way into cheese vats, causing the largest expansion in cheese production since 2006. As the year progressed, a significant amount of cheese was exported, but not enough to keep stocks at a comfortable level. But in spite of record stocks, cheese prices remained strong for much of 2010. They peaked early in October but fell off sharply in November with further declines through the end of the year.

## 2011 Dairy Outlook

Feed prices are the dominant factor in 2011 dairy forecasts. Corn prices, in particular, are expected to be much higher than last year. USDA's current forecast is for a season-average farm-level corn price of $5.20 per bushel in 2010/11, up almost 50 percent from 2009/10. Soybean prices are forecast to be up 19 percent, which will elevate soybean meal prices proportionately. Hay prices will likely move in lockstep with corn and soybean prices.

Current forecasts indicate that the standard 16 percent protein NASS dairy ration will cost more in 2011,

matching its previous 2008 peak and staying there for a longer period. Anticipated lower milk prices for at least the first half of 2011 will make returns over feed costs much less favorable—though not as bad as in 2009—especially for producers who purchase most of their feed. The response in Western states will likely be similar to what it was in 2009, causing cow numbers to increase at a slower rate in many states and decline in others. Milk per cow will follow a similar pattern. The net impact will be either reduced milk production or much smaller increases for some states.

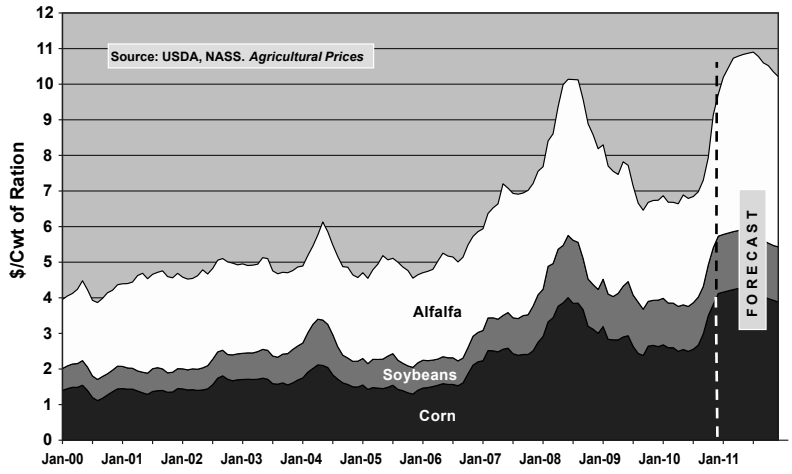
Wisconsin producers will be affected less by costlier feed. Most of them grow at least part of what they feed, and those who don't are closer to feed sources than their Western counterparts and therefore have lower freight costs. Wisconsin will likely continue its upward trend in cow numbers and milk production in 2011.

2011 could be a difficult year for operators who drew on credit reserves and saw their equity positions greatly diminished in 2009. Banks and input suppliers will look very carefully at the borrowing capacity and some producers will find that their credit capacity is inadequate to support operating loans or supplier credit standards. If enough of these farms are forced to liquidate, the additional cows and facilities on the market will lower the value of those assets across the country, putting additional stress on balance sheets. If so, this will be much less of an issue in Wisconsin than in the West.

The U.S. dairy herd may shrink slightly in 2011, but Wisconsin cow numbers are expected to grow somewhat. There are plenty of replacement heifers available in the U.S., more than 45 for every 100 milk cows, enough to offset the culling of lower producing animals. The increase in milk per cow is likely to be more than 1 percent. This would put 2011 milk production near 194.4 billion pounds, up just 0.7 percent. USDA forecasts a slightly larger increase, with production climbing to 195.5 billion pounds, a 1.4 percent increase.

The domestic economy is projected to grow modestly in 2011. Domestic milk and dairy product sales will also show growth, led by improved cheese sales. USDA projects domestic sales of milk and dairy products to be up 2 percent on a fat equivalent basis and 3 percent on a skim-solids basis.

**NASS Dairy Ration Value**




Exports are projected to be a bit lower in 2011. USDA projects a 23 percent decline on a fat equivalent basis, mainly due to lower butter exports, but down just 4 percent on a skim solids basis due to continued favorable nonfat dry milk and whey protein exports. Global economic recovery is expected to continue in 2011, which will help keep demand for dairy products strong. Growth in exports to Southeast Asia and China should be especially robust. But exports to Mexico, the largest foreign market for U.S. dairy products, might continue to be hampered by a NAFTA dispute over trucking.

The U.S. dollar has weakened against most major currencies, which increases U.S. export opportunities and makes the United States a less attractive market for other dairy exporting nations. Imports of dairy products in 2010 were down significantly from previous years. If the U.S. fully implements the $600 billion of quantitative easing that it has begun (see macroeconomics section), the value of the dollar will likely decline even further against other currencies. But the larger U.S. milk supply will leave more available for exports. Production in Oceania, the leading dairy exporter is forecast to rise. Those increases may not be as big as originally projected. Wet weather may hamper production in Australia, and drought conditions in New Zealand mean less than ideal pastures. Nevertheless, Oceania exports will likely increase in 2011.

USDA's expects 2011 commercial use, including both domestic sales and exports, to be up 2 percent on a fat equivalent basis and 3 percent on a skim solids basis. This will help to strengthen milk prices during the second half of 2011.

The opportunities for skim milk powder exports could be reduced

**Projected 2011 Milk and Dairy Product Prices**

| *Price and Units* | *Quarter* | | | |
|---|---|---|---|---|
| | *Jan-Mar* | *Apr-Jun* | *Jul-Sep* | *Oct-Dec* |
| Federal Order Class III ($/Cwt) | $13.85±0.15 | $14.15±0.15 | $14.95±0.35 | $15.15±0.15 |
| Federal Order Class IV ($/Cwt) | $14.75±0.25 | $14.55±0.10 | $14.65±0.15 | $15.10±0.15 |
| Wisconsin All Milk ($/Cwt) | $15.85±0.10 | $15.85±0.10 | $16.50±0.10 | $16.70±0.15 |
| CME Block Cheddar ($/Lb) | $1.42±0.02 | $1.50±0.02 | $1.60±0.02 | $1.62±0.02 |
| CME Butter ($/Lb) | $1.64±0.01 | $1.64±0.01 | $1.66±0.01 | $1.66±0.01 |
| Western Nonfat Dry Milk ($/Lb) | $1.16±0.01 | $1.17±0.01 | $1.17±0.01 | $1.17±0.01 |
| Central Dry Whey ($/Lb) | $0.39±0.01 | $0.39±0.01 | $0.38±0.01 | $0.38±0.01 |

Source: Author's estimates.

because the European Union is holding large stocks of milk powder, which it began purchasing in 2009 in response to low milk prices in Europe. The EU has started to ease this product into world markets, but it has 200,000 million tons of powder to move. Assuming the product is still in good condition, much of it could be sold into markets that the U.S. would otherwise supply.

For 2011, we forecast that the Class III price will average $14.60 per hundredweight, up from $14.41 in 2010. We expect the Wisconsin all milk price to average $16.32, the same as 2010. We expect lower prices in the first half of the year with a significant rebound in the latter half. There is more upside potential than downside potential in the last two quarters. We think that current milk futures markets may be undervaluing milk prices for that period and so advise caution in locking in second-half prices until market conditions become more clear. We expect that better opportunities to lock in prices or set a floor with options will emerge.

Under the price forecasts given above, the Class I milk price in Boston would not go lower than $16.94 in 2011, the unadjusted trigger price for Milk Income Loss Contract (MILC) payments to producers.

**U.S. Milk Supply and Utilization 2008-2011, Fat Equivalent Basis**

| | *2008* | *2009*[a] | *2010*[b] | *2011*[c] |
|---|---|---|---|---|
| ***Supply**** | | | | |
| Cows Numbers (thousand) | 9,315 | 9,201 | 9,110 | 9,082 |
| Production/cow (lbs) | 20,396 | 20,576 | 21,150 | 21,405 |
| Production | 190.0 | 189.3 | 192.7 | 194.4 |
| Farm Use | 1.0 | 1.0 | 1.0 | 1.0 |
| Marketings | 189.0 | 188.4 | 191.7 | 193.4 |
| Beginning Commercial Stocks | 10.4 | 10.1 | 11.3 | 10.0 |
| Imports | 3.3 | 5.6 | 4.1 | 4.0 |
| **Total Supply** | **202.7** | **204.1** | **207.1** | **207.4** |
| ***Utilization**** | | | | |
| Commercial Disappearance | 192.6 | 192.1 | 197.4 | 197.2 |
| Ending Commercial Stocks | 10.1 | 11.3 | 10.0 | 10.2 |
| DEIP | 0.0 | 0.0 | 0.0 | 0.0 |
| Net Removals (excluding DEIP) | 0.0 | 0.7 | 0.2 | 0.0 |
| **Total Use** | **202.7** | **204.1** | **207.1** | **207.4** |

* All values in billion pounds, except as noted.
[a] Revised
[b] Based on preliminary USDA data and author's estimates..
[c] Author's estimates
Source: USDA, *Dairy Situation and Outlook, Milk Production, and Dairy Market News.*
Totals may not add due to rounding.

However, the projected high feed prices would adjust that trigger to levels that would yield MILC payments in every month of 2011. The average MILC payment is projected to be about 60 cents per hundredweight, reaching peak payments in July. MILC payments per farm are capped at 2.985 million pounds of milk marketed October 1st through September 30th.

## Livestock and Poultry

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### 2010 In Review

Markets offered good news to livestock producers in 2010. The year brought a very small increase in production (less than 1 percent), higher prices for most livestock and poultry after low prices in 2009, continued good export demand and only a small decline in U.S. per capita meat consumption.

But producers continued to face relatively high and volatile feed costs, making production decisions—particularly whether to increase herds and flocks—more difficult. The volatility probably favors the poultry sector, where production can be altered more quickly in response to changing market conditions.

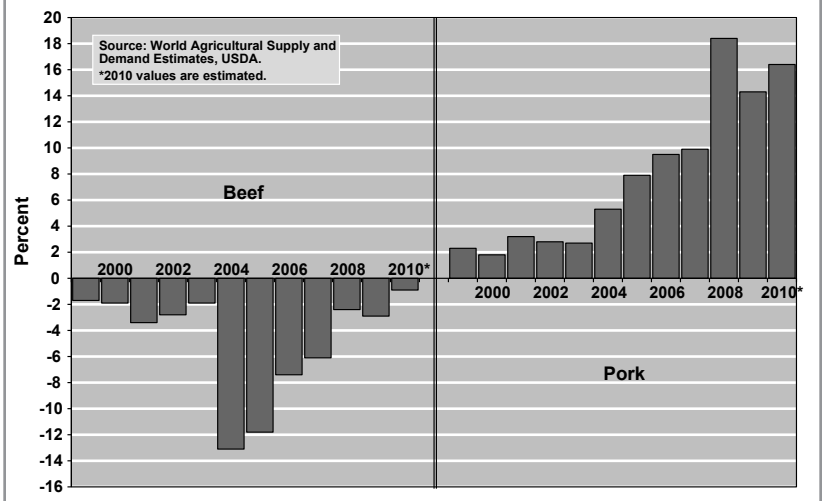
Total meat output was up a little in 2010. It was the 25th annual increase in the last 28 years.

Meat exports remained strong in 2010, up by about 4 percent despite lackluster economies in much of the world. The combination of a 19 percent increase in beef exports and a 4 percent rise of both pork and turkey exports was more than enough to offset a 6 percent drop in broiler exports. Following a large decline in beef exports in 2004—in the wake of a BSE incident in late 2003—total meat exports of beef, pork and poultry have nearly doubled in the last six years. The strong export market in meat and in the feed inputs has been helped by the decade-long decline in the value of the dollar.

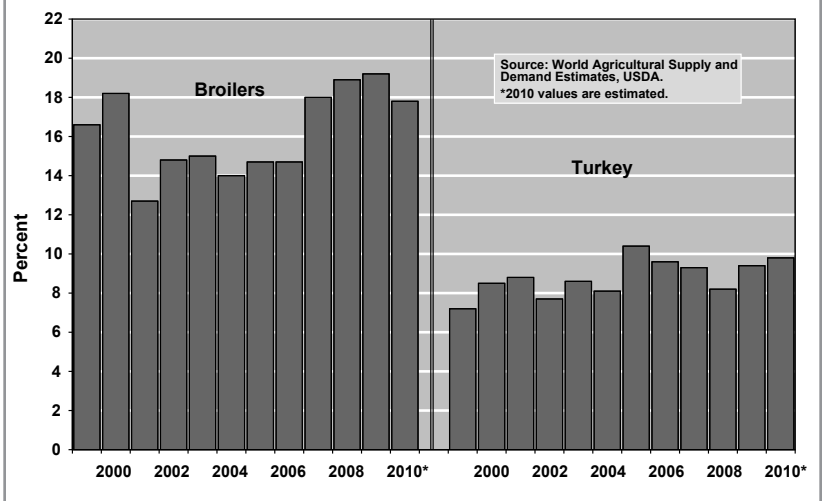
For the fifth consecutive year, livestock and poultry producers continued to face relatively high and somewhat volatile feed prices in 2010. From 1999 through 2005, corn prices averaged $2.06 per bushel, but from 2006 through 2010 they averaged $4.15 per bushel with monthly averages ranging from $3.03 per bushel to $6.56 per bushel. Soybean meal prices have shown a similar pattern. The average annual price during 1999-2005 was $182 per ton. From 2006 through 2010, it averaged $280 per ton, with monthly prices ranging from $168 to $418 per ton.

The rapid rise in feed prices during the last five years has slowed the upward momentum of meat production, which had increased 30 percent from 1990 to 2008.

**U.S. Foreign Trade Balance (Exports minus Imports) as a Percent of Production: Beef and Pork**




**U.S. Foreign Trade Balance (Exports minus Imports) as a Percent of Production: Broilers and Turkey**



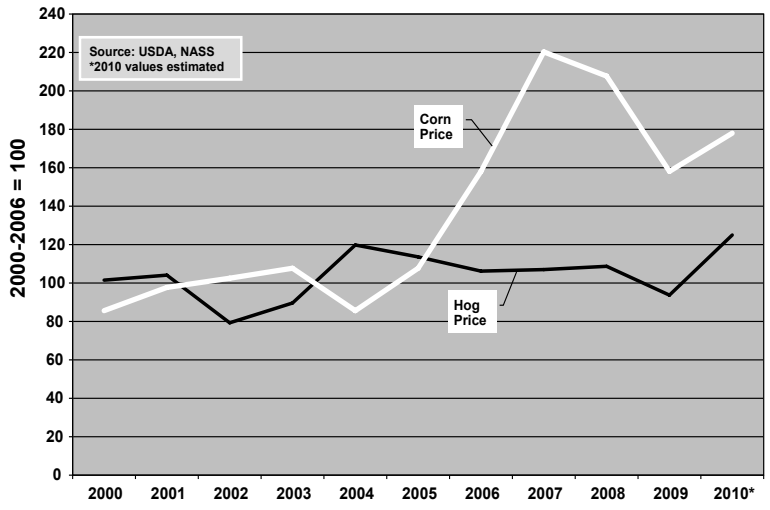

*Brenda Boetel is an associate professor and Extension livestock marketing specialist, Department of Agricultural Economics, University of Wisconsin-River Falls and UW-Extension.

With meat production flat in 2010, exports up about 4 percent and U.S. population rising nearly 1 percent, consumption fell about 1 percent to about 207.7 pounds per person. Consumption has declined about 6.3 percent in three years from the all-time record of 221.6 pounds reached in 2007. It now at its lowest point since 1978.

Livestock and poultry prices fared reasonably well in 2010 and were much improved over the weak prices of 2009. Average choice cattle prices in 2010 were up more than 12 percent from 2009, exceeding the record-high averages reached in 2007 and 2008. Average hog prices rose more than 30 percent from 2009, just missing the record attained in 1982. Average broiler prices were up nearly 10 percent and set a new annual record. Average turkey prices were also up about 10 percent and slightly exceeded the record high set in 2008.

Several factors help fuel the significant price recovery in 2010. Frozen stocks of beef, pork and turkey were well below those of 2009 most of the year. Also, the wet 2009 corn crop was below normal in quality, resulting in slower gains of some livestock and poultry. Weather also played a part. The winter of 2009-2010 was colder and wetter than normal in the cattle-feeding area in the Southern Plains, slowing weight gains and helping the surge in cattle prices from an average of $83.08 per hundredweight in December 2009 to $98.41 in April 2010. And summer was hotter and more humid than normal in the Midwest, slowing weight gains of hogs. Hog slaughter per weekday was down 9 percent in August and 6 percent in September, holding hog prices near record highs. But as autumn brought cooler weather and higher quality new crop corn, hog slaughter per weekday in November was up 1 percent. Hog prices fell from $60.64 in September to $47.00 in November.

**U.S.Hog and Corn Price Indices**




Cow slaughter rose about 4 percent in 2010, up more than a third from its recent low five years ago. Dairy cow slaughter was down about 3 percent and slaughter of beef and other cows was up about 10 percent. Total cow slaughter in 2010 was the largest in 13 years.

Total slaughter of all cattle, including cows, was up about 2 percent from 2009. It has held in a sidewise trend between 31.8 and 33.8 million head for the last seven years. Cattle slaughter in 2010 was down more than 14 percent from the record high recorded in 1976. However, with increased productivity gains, total beef production in 2010 was slightly larger than in 1976. Still, beef output in 2010 was down 4 percent from the record in 2002.

The cattle numbers cycle, which has ranged from 10 to 14 years in length since the mid-1800s, appears to be muted recently as numbers have not increased much since the low in 2005.

Hog slaughter in 2010 was down about 3 percent from 2009 but was still the third largest on record. Pork production has doubled since 1975, while hog slaughter has increased only 68 percent during that time, again reflecting productivity gains.

Broiler output returned to the plus side in 2010 following a 3 percent decline in 2009 (after increasing every year from 1975 through 2008). Broiler production increased more than 3 percent in 2010 to about 36.3 billion pounds, more than triple the 10.4 billion pounds produced 35 years ago. Turkey output fell 1 percent in 2010 and was 10 percent smaller than the record high set two years ago.

Rising feed costs represent a significant part of total meat production expenses. Shipping and distribution costs also increased in 2010. Livestock and poultry producers leveled off their production in an attempt to get higher prices from a domestic population that is growing slowly and has been hit by a severe economic downturn. Expanding export markets and continued productivity gains have helped producers cope in this difficult environment. The combination of lower production levels and high exports will continue to benefit producers in 2011.

## 2011 Forecast

### *Little Change in Meat Output In 2010; Little Expected in 2011*

Total meat output has trended sidewise between 90.5 and 91.5 billion pounds from 2007 to 2010 and should stay in that range in 2011. Good export markets and continued productivity gains favor expansion, but some producers will remain hesitant in the face of debt issues and concern about feed costs and the strength of domestic demand.

### *Fed Cattle Prices Will Rise, Beef Production Will Drop*

Dairy cow slaughter for 2010 was down about 3 percent from 2009. However, after September, slaughter levels rose above the 2009 levels. In 2009, the CWT herd retirement program accounted for 8 percent of the annual dairy cow slaughter, whereas in 2010, it accounted for only 1 percent. This decrease in herd retirements may explain some of the decrease in dairy cow slaughter. The higher dairy cow slaughter numbers later in 2010 likely reflect higher feed costs and higher cow prices at slaughter. If these factors continue into 2011, expect annual dairy cow slaughter numbers to attain the same level as in 2010.

Beef cow slaughter through June 2010 was up 13 percent from the same period of 2009, but it was up only 5 percent in the latter half of 2010. These numbers indicate that the rate of beef cow slaughter is decreasing and will likely drop below last year in 2011.

If the cow slaughter slows as expected, prices for slaughter cows will likely hit their seasonal high in late spring, and could be 5 percent above 2010 levels for the first several months in 2011. This increase in price would reflect fewer cattle coming to slaughter and an expected increase in demand for domestic lean beef.

Although production costs were higher, cattle feeders enjoyed positive margins for much of 2010 thanks to high cattle prices. Increased profitability would encourage holding cows for breeding and a resulting reduction in cow slaughter. If the recent trend continues, herd expansion could begin in late 2011.

Higher feed prices usually have a negative impact on feeder cattle prices. But, surprisingly, feeder cattle prices in 2010 were up from 2009 despite costlier feed. Feeder cattle prices will likely remain stable in early 2011 but show some weakness in the latter part of the year. Cattle feeding margins narrowed at the end of 2010, as there was little ability to continue to bid up feeder cattle prices.

The fed cattle supply is decreasing. Cattle feeders have had to bid more aggressively in order to keep their lots full. U.S. feedlots had an excess capacity of 6 million head at the end of 2010. The industry will likely see some decline in feeding capacity in 2011. Nevertheless, cattle supplies will remain tight. Cattle slaughter will decrease, although weights may increase slightly. Overall beef production will be down for 2011. If herd expansion does begin, the retention of heifers will cause further tightening of overall cattle supplies. Due to decreased supply of beef, fed cattle prices will be higher in 2011, potentially as much as $5/cwt. above 2010 levels.

### *Hog Prices Up a Little; Pork Supply Stable In 2011*

Following disastrous financial results in 2009, pork producers had a much better year in 2010, particularly those who raise much or all of their corn. But producers haven't forgotten 2009, and the financial damage has not been totally repaired. The price surge in 2010 was partially fueled by the poor quality of the 2009 corn crop and the fact that the industry ran out of freezer stocks of several important pork items, which helped fuel a late-summer rally.

The pork supply in 2011 should be little changed. The industry, which sells 20 percent of its products outside of the United States, may see a rise in price, but probably not a large one.

### *Broiler Output and Prices Could Show Some Gains*

Broiler producers had improved financial results in 2010, particularly in the last half of the year. Average annual prices improved about 6 percent over 2009. Production should grow again in 2011. If this gain is modest, producers could see a slight rise in the average annual price.

### *Turkey Producers Should Hold Their 2010 Gains*

Turkey producers over-expanded in 2007 and 2008, increasing output 5 percent each year. Some of the added volume could not be sold and found its way into freezer storage. That frozen volume overhung the market in 2009, causing average annual prices to plunge 9 percent. Turkey output fell a bit in 2010 and prices recovered to new highs. Both output and the average annual price should be a little higher in 2011.

### *Lamb Production Will Fall Again in 2011*

Lamb output fell each year of the last decade, declining 29 percent over that span. More of the same is expected in 2011. Imported lamb meat has offset the domestic decline. Still, lamb consumption per capita has dropped a little bit. Domestic lamb prices paid to producers rose in eight of the 10 years, climbing 42 percent in the decade to new record highs. Lamb prices could increase a little more in 2011, but any increase should be modest.

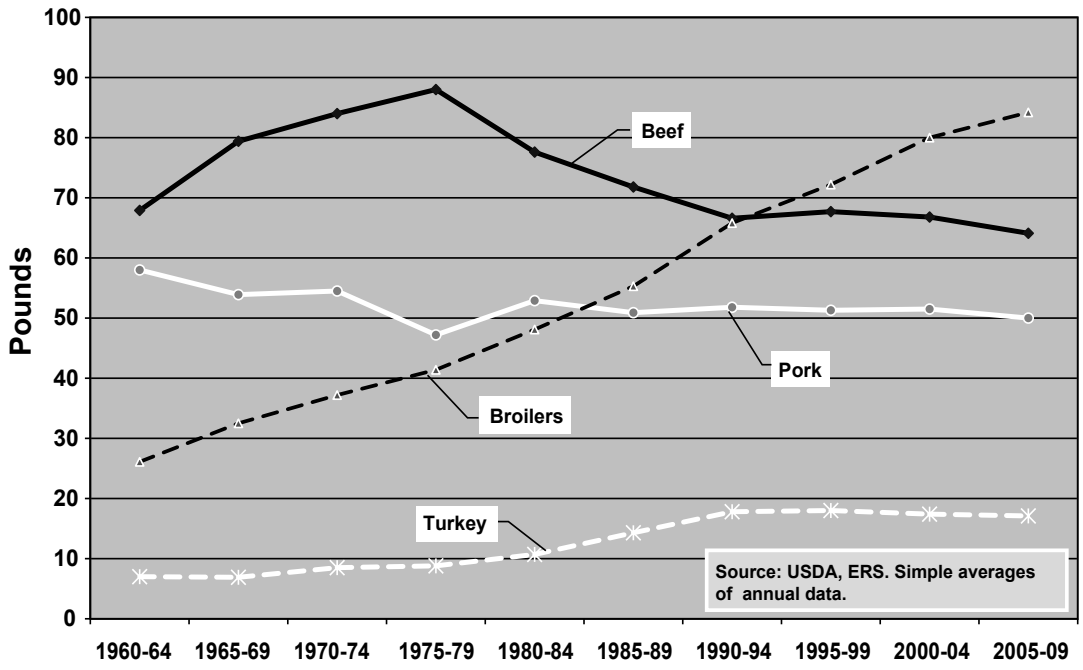
### *Egg Production Steady in 2011*

After rising early in the decade to new highs in 2006, egg output has fallen in each of the last four years, dropping 4 percent over that time. Surprisingly, annual average prices, which have fluctuated wildly in many recent years, were about the same in 2010 as in 2009. Those prices were down nearly 20 percent from the record high in 1998, but they were 57 percent higher than in 2005. Little change in production is expected in 2011, with odds favoring some increase in prices.

### *Meat Consumption Per Capita May Continue Its Slow Decline*

Meat consumption per capita trended upward for many years, but it peaked in the 2004-2007 period with a record 221.6 pounds per person consumed in 2007. It has since declined more than 6 percent in the last three years. A small decline is expected again in 2011.

**U.S. per Capita Meat Consumption**



## Corn and Soybeans

David Moll (608) 262-8196 and
Randy Fortenbery (608) 262-4908

### Synopsis

A lot of things went right for corn and soybean growers in 2010: An early planting season, timely rains, large crops and strong demand. U.S. harvests were among the earliest on record. In Wisconsin, corn and soybean crops set records for both yield per acre and total production. A mid-summer price rally carried higher grain prices into harvest as production shortages emerged in Russia and China, resulting in an export embargo for Russian wheat. The corn ending stocks-to-use ratio is anticipated to be the lowest since the 1995/1996 marketing year. With tight ending stocks, grain prices are expected to be higher in the 2010/2011 marketing year and will continue to exhibit a high level of volatility in daily price movements and larger price swings.

### Corn

USDA's December World Agricultural Supply and Demand Estimates pegged the 2010 U.S. corn yield at 154.3 bushels per acre. This represents a 10.4-bushel reduction from last year's yield, but it is still just barely below the 30-year trend line. Initially, the August 2010 report forecast the U.S. corn yield at about 165 bushels per acre. This would have set a new record, but little late summer rainfall coupled with high nighttime temperatures in the eastern Corn Belt led to a less robust yield forecast. The northern tier states (North Dakota, Minnesota, Wisconsin, Michigan and New York) still had record-setting yields, thanks to consistent rains in the western Corn Belt and higher-than-normal temperatures. While the northern tier states benefited from higher growing degree days, yields further south were hurt by higher-than-normal night temperatures during pollination.

The USDA estimates U.S. producers planted 88.2 million acres of corn in 2010 and harvested 81.3 million acres. The 154.3-bushel average yield combined with the 81.3 million acres harvested created the third-largest corn crop on record at 12.5 billion bushels. This is the eighth year in a row with production in excess of 10 billion bushels.

**U.S. Corn Balance Sheet (Sep/Aug)**

| *Marketing Year* | *03/04* | *04/05* | *04/06* | *06/07* | *07/08* | *08/09* | *09/10** | *10/11*** |
|---|---|---|---|---|---|---|---|---|
| | Million Bushels *(Except as Noted)* | | | | | | | |
| Beg. Stocks | 1,087 | 958 | 2,114 | 1,967 | 1,304 | 1,624 | 1,674 | 1,708 |
| Imports | 14 | 11 | 9 | 12 | 20 | 14 | 10 | 15 |
| Acres Planted (Mil.) | 78.6 | 80.9 | 81.5 | 78.3 | 93.5 | 86.0 | 86.5 | 88.2 |
| Acres Hvst. (Mil.) | 70.9 | 73.6 | 75.1 | 70.6 | 86.5 | 78.6 | 79.6 | 81.3 |
| % Harvested | 90.2 | 91.0 | 92.1 | 90.2 | 92.5 | 91.4 | 92.0 | 92.1 |
| Yield (Bu./A.) | 142.2 | 160.4 | 148 | 149.1 | 150.7 | 153.9 | 164.7 | 154.3 |
| Production | 10,089 | 11,807 | 11,114 | 10,535 | 13,038 | 12,101 | 13,110 | 12,540 |
| Total Supply | 11,190 | 12,776 | 13,237 | 12,514 | 14,362 | 13,739 | 14,792 | 14,262 |
| Feed & Res. | 5,795 | 6,158 | 6,155 | 5,595 | 5,913 | 5,254 | 5,159 | 5,300 |
| Food/Seed/Ind. | 2,537 | 2,686 | 2,981 | 3,490 | 4,387 | 4,953 | 5,938 | 6,180 |
| Ethanol | 1,168 | 1,323 | 1,603 | 2,119 | 3,049 | 3,677 | 4,568 | 4,800 |
| Exports | 1,900 | 1,818 | 2,134 | 2,125 | 2,437 | 1,858 | 1,987 | 1,950 |
| Total Demand | 10,232 | 10,662 | 11,270 | 11,210 | 12,737 | 12,065 | 13,084 | 13,430 |
| Ending Stocks | 958 | 2,114 | 1,967 | 1,304 | 1,624 | 1,674 | 1,708 | 832 |
| Stocks to Use (%) | 9.36 | 19.83 | 17.45 | 11.63 | 12.75 | 13.87 | 12.95 | 6.19 |
| Average Farm Price ($/Bu.) | $2.42 | $2.06 | $2.00 | $3.04 | $4.20 | $4.06 | $3.55 | $5.20 |

*USDA Estimate as of December 2010
**USDA Forecast as of December 2010

In Wisconsin, corn yield is estimated at 162 bushels per acre, shattering last year's record yield by 9 bushels. Total state production also set a record at 477 million bushels, up 6 percent over last year. Wisconsin producers consistently rated about 80 percent of this year's crop in the good-to-excellent category throughout the growing season. This is nearly 20 percent higher than the previous five-year average crop condition ratings. Like most of the country, the Wisconsin corn crop was in the ground considerably ahead of normal. Almost 50 percent of it was planted by May 1st. This was followed by one of the earliest harvests on record, in dramatic contrast to the 2009 crop.

Due to record production levels, some pockets in the state had weaker than normal basis levels during the harvest season. In addition, flooding in Minnesota limited access to the river market, reducing competition with railroads and further pressuring basis. Significant basis appreciation should occur in spring 2011 as more corn is pulled from areas affected by the relative excess supply following harvest.

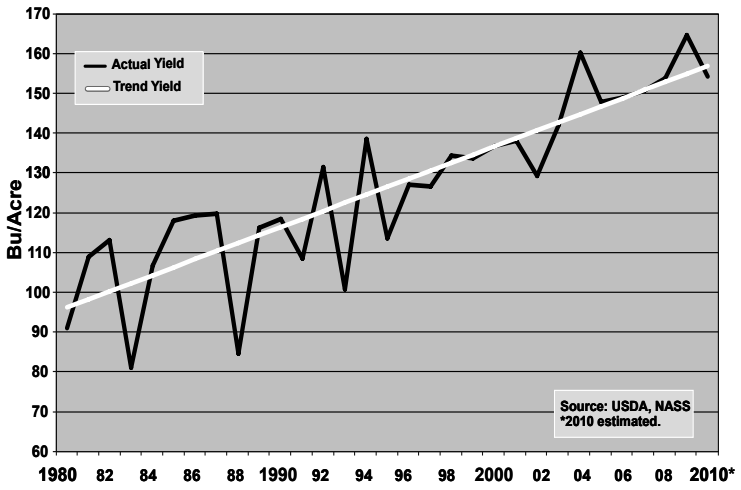
Even with the large production, prices have increased into harvest due to strong demand and the Russian wheat export embargo. Feed and residual use is projected to be stable in 2010/11 compared to the last couple of years, with only a minor reduction in feed usage compared to last year. This is due to lower anticipated beef and pork production and only a slight gain in poultry output in 2011. Limited expansion is expected to occur in the next year as producers are uncertain about their future with the sluggish economy and relatively high grain prices.

Ethanol demand continues to grow but at a much slower rate than the past three years as production approaches the 15-billion-gallon target set in the Renewable Fuels Standard. However, 2010 brought the largest volume of October ethanol production in U.S. history. Ethanol plants are expected to need 4.8 billion bushels of corn in 2010/11, up 250 million bushels over last year. Ethanol now accounts for 77 percent of the total industrial use.

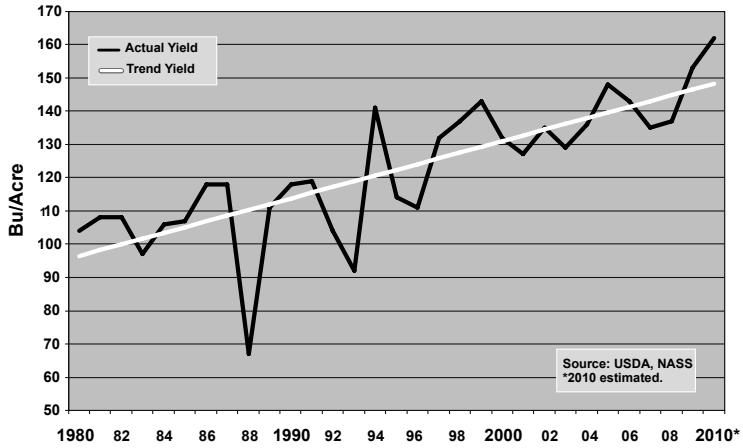
The ethanol blender's credit and ethanol import tariff, set to expire on December 31st, 2010, were extended by Congress. This will provide a partial demand floor for U.S. ethanol production. Corn exports are expected to be similar to last year but still below the 2005 to 2007 marketing years. With continued pressure on the U.S. dollar, exports are projected to be around 1.9 billion bushels.

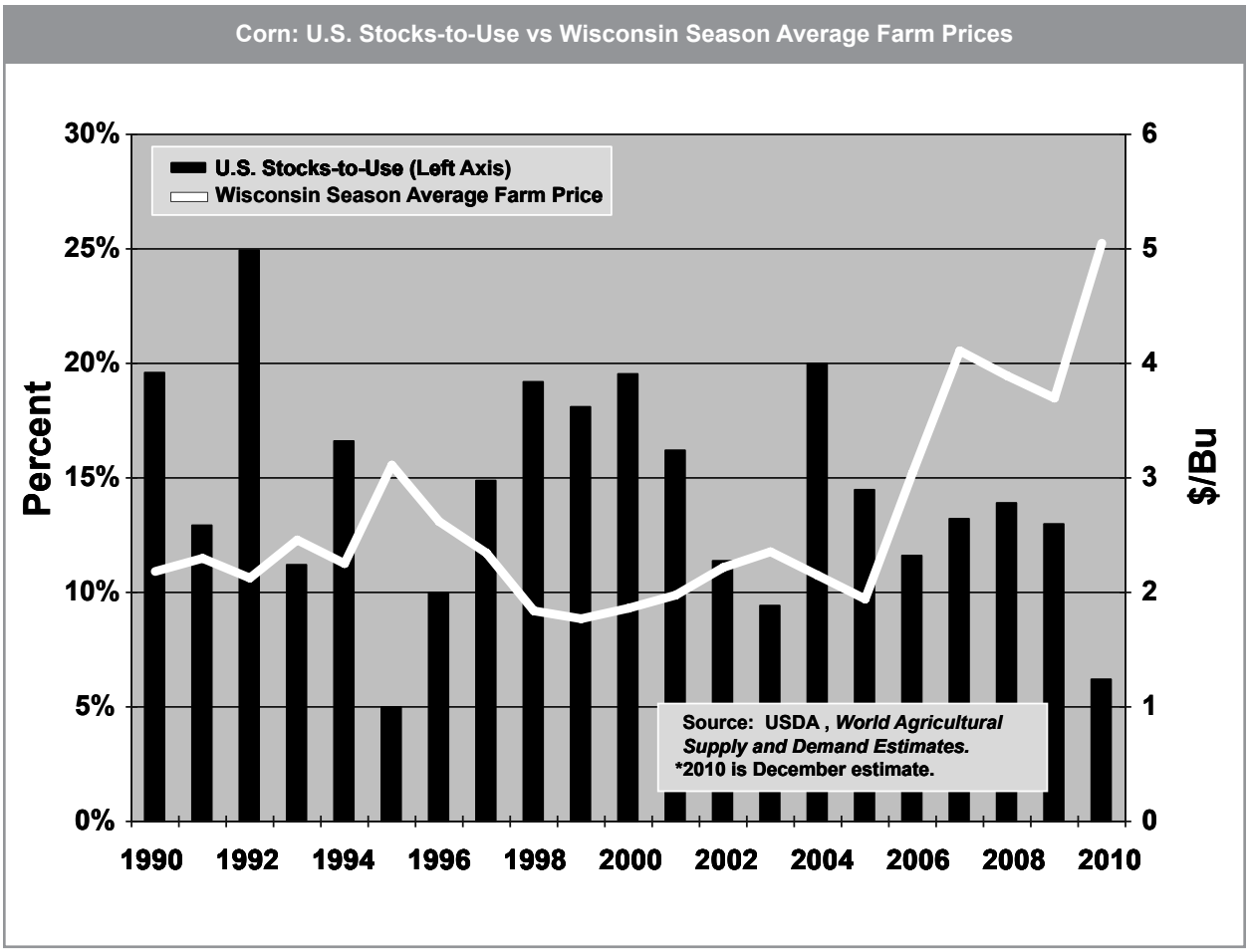
With growth in overall demand exceeding the growth in total supply, ending stocks for the current marketing year are expected to fall to 832 million bushels. This will result in a stocks-to-use ratio of 6.2 percent, the lowest since the

**U.S. Average Corn Yields**




**Wisconsin Corn Yields**






1995/96 marketing year. With tight ending stocks, relatively higher prices should carry into 2011, but high price volatility will continue. With the relatively high prices, demand rationing may start to occur.

USDA currently projects a 2010/11 marketing year national average corn price of $5.20 per bushel. This would be the highest average price on record, significantly exceeding the 2007 and 2008 prices of $4.20 and $4.06, respectively. The Wisconsin 2010/11 marketing year average farm price is expected to be about $5.05 per bushel.

The futures market is still signaling that it will pay a premium of 4–5 cents per month for storage into May. Coupled with likely basis appreciation, this suggests opportunities for on-farm storage. After May the inter-month spreads are less favorable.

For the 2011 corn crop, relatively higher prices could be partly offset by higher input costs. Further, any bearish changes in either the demand or supply estimates going forward could cause significant price deterioration. Consequently, marketing corn in 2011 will require discipline. It will be tempting to be overly bullish, since there will likely be information that supports that view. However, as production levels become clearer (for example through the January final production reports), risk will subside and prices could fall rapidly. Producers who are holding out for higher prices in 2011 should consider some type of downside price protection. At current price levels, traditional government programs do not provide any real risk protection.

## Soybeans

The nation's 2010 soybean production is expected to set a record at 3.37 billion bushels, marginally larger than last year's record. U.S. soybean yield is expected to be 43.9 bushels per acre, a slight drop from last year's record. However, national soybean acres rose by 200,000, totaling 77.7 million acres. The increase in acreage offset the slight yield reduction, which led to the record production.

The Wisconsin soybean yield for 2010 is estimated at a record 50 bushels per acre, up 10 bushels from last year, beating the previous record of 48 bushels set in 1998. State producers planted 10,000 more acres this year than last, but this is still below the 2003 record acreage.

Nevertheless, Wisconsin soybean production this year was a record 81.5 million bushels, a whopping 25 percent increase over last year.

Soybean demand is strong and supportive of higher prices even with the record large crop. Soybean crush and exports are expected to increase in 2010/11 relative to the previous year. Soybean exports have been setting new records for several years in a row, and this year will continue that streak. U.S. soybean exports are expected to total 1.59 billion bushels. Nearly 60 percent of those exports this year are expected to go to China. Sending such a large share to a single buyer poses considerable risk. But China was a reliable buyer last year and has already accepted delivery on 80 percent of the soybeans they contracted for in 2010. Sales for this year are ahead of last year's sales to date. China also faced some production shortfalls in 2010, and that will likely increase their soybean imports in 2011.

Soybeans for crush are expected to match last year's levels in the face of continuing strong demand for vegetable oils and soybean meal. Domestic soybean oil demand is expected to increase by 7 percent in the 2010/11 marketing year. The price of soybean oil is expected to average 47 cents per pound in 2010, compared to 32 cents in 2008 and 36 cents in 2009. Soybean oil exports are expected to be similar to those in the 2008/09 crop year, but lower than last year's. Biodiesel production is expected to increase in 2011. It will be nearly double 2009 production but will still be less than the 2007 record production. Soybean meal usage is expected to be similar to 2008 levels and slightly less than 2009 as higher prices limit domestic feed use. Soybean meal

**U.S. Soybean Balance Sheet (Sep/Aug)**

| *Marketing Year* | *03/04* | *04/05* | *05/06* | *06/07* | *07/08* | *08/09* | *09/10** | *10/11*** |
|---|---|---|---|---|---|---|---|---|
| | Million Bushels *(Except as Noted)* | | | | | | | |
| Beg Stocks | 178 | 112 | 256 | 449 | 574 | 205 | 138 | 151 |
| Imports | 6 | 6 | 3 | 9 | 10 | 13 | 15 | 10 |
| Acres Planted (Mil.) | 73.4 | 75.2 | 72.0 | 75.5 | 64.7 | 75.7 | 77.5 | 77.7 |
| Acres Hvst. (Mil.) | 72.5 | 74.0 | 71.3 | 74.6 | 64.1 | 74.7 | 76.4 | 76.8 |
| % Harvested | 98.8 | 98.4 | 99.0 | 98.5 | 99.0 | 98.7 | 98.5 | 98.8 |
| Yield (Bu./A.) | 33.9 | 42.2 | 43 | 42.7 | 41.7 | 39.7 | 44 | 43.9 |
| Production | 2,454 | 3,124 | 3,063 | 3,188 | 2,677 | 2,967 | 3,359 | 3,375 |
| Total Supply | 2,638 | 3,242 | 3,322 | 3,647 | 3,261 | 3,185 | 3,512 | 3,536 |
| Crush Sep/Aug | 1,530 | 1,696 | 1,739 | 1,808 | 1,803 | 1,662 | 1,752 | 1,665 |
| Exports | 887 | 1,097 | 940 | 1,116 | 1,159 | 1,283 | 1,501 | 1,590 |
| F/S/R | 109 | 192 | 194 | 149 | 93 | 101 | 108 | 117 |
| Total Demand | 2,526 | 2,986 | 2,873 | 3,073 | 3,056 | 3,047 | 3,361 | 3,371 |
| Ending Stocks | 112 | 256 | 449 | 574 | 205 | 138 | 151 | 165 |
| Stocks To Use (%) | 4.43 | 8.57 | 15.62 | 18.28 | 6.71 | 4.53 | 7.01 | 4.89 |
| Average Farm Price ($/Bu.) | $7.34 | $5.74 | $5.66 | $6.43 | $10.10 | $9.97 | $9.59 | $11.4 |

*USDA Estimate as of December 2010
**USDA Forecast as of December 2010

exports are projected to drop about 17 percent from last year, but they will still be the second-highest on record.

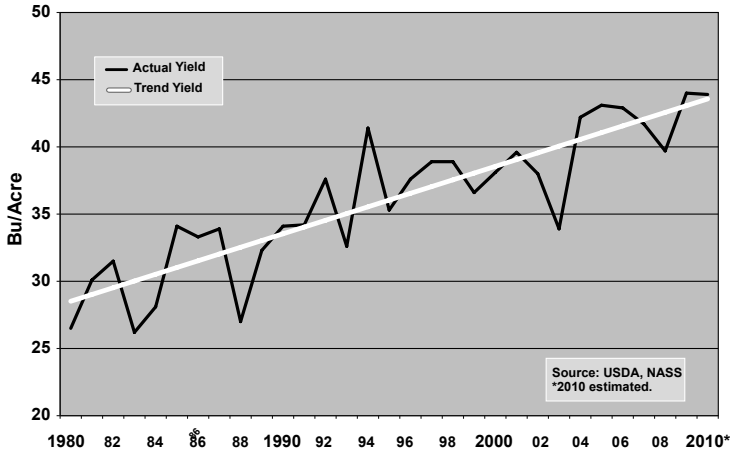
The futures market has not indicated that it will pay for soybean storage based on the inter-month spreads in the market. The big unknown going forward is the size of the South American soybean crop. Currently, it is expected to be similar to last year, with increased acres offsetting year-over-year yield losses. In 2010 both Brazil and Argentina had record yields, but this is not likely to happen again in 2011, with the La Nina affecting the southern hemisphere and pulling moisture from the crop. Any production shortfalls in Brazil and Argentina would support even higher soybean prices in the spring.

Based on strong export demand and a relatively stable demand from soybean crush, ending stocks for the 2010/11 crop are expected to be 165 million bushels. The U.S. season-average farm price is expected to be $11.45, while the Wisconsin average soybean price is expected to be $11.25.

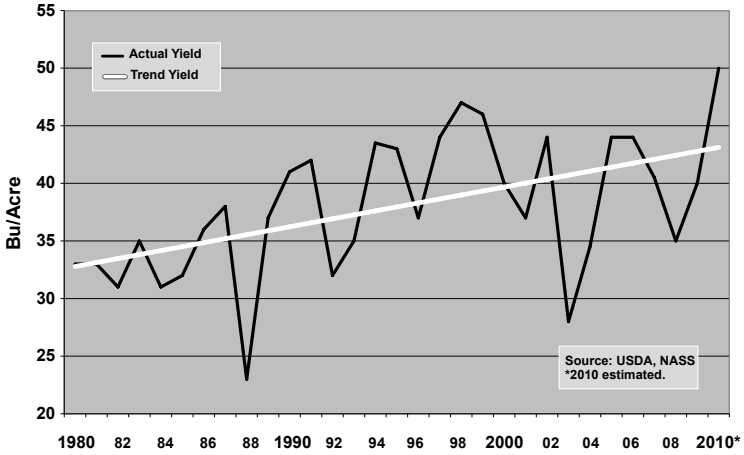
## Summary

The U.S. corn and soybean crops are large, but robust demand will reduce ending stocks for 2010/11. Producers who prefer to speculate on higher prices for their 2010 and 2011 production might still want to consider some price protection. Currently, we are in the upper range of prices from the previous four years. If demand rationing occurs or concerns about 2011 production begin to ease, prices could respond negatively. The challenge for producers will be to maintain a clear set of market objectives in the face of continual market hype. Those looking for reasons to delay marketing their crop will likely find plenty of rationale for additional price increases, but, like prior demand-driven markets, once the speculative interest wanes and concerns about 2011 production subside, prices can retreat in dramatically.

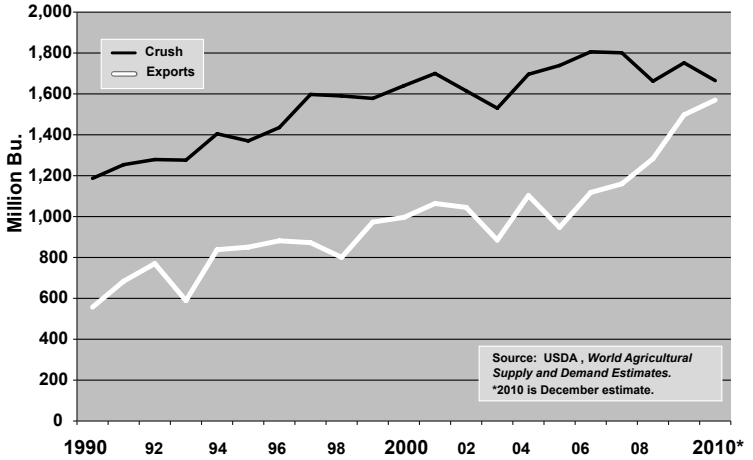
**U.S. Average Soybean Yields**




**Wisconsin Soybean Yields**




**U.S. Soybean Crush and Exports**



# Fruits and Vegetables

A.J. Bussan (608) 262-3519 and
Rebecca Harbut (608) 262-6459[1]

## Synopsis

Wisconsin cranberry production increased 10 percent in 2010 compared to 2009. Carryover of 4.6 million barrels from 2009 and a large 2010 crop has resulted in lower prices. Softening international demand has contributed to increased carryover and raises the prospect of even lower prices in 2011.

Planted acreage of potatoes in 2010 was down from 2009 and growers across the country faced challenges with smaller tuber size and lower yields. This has led to anticipated shortages of fresh, chip and processed potatoes. Growers are receiving strong prices for non-contracted potatoes. Consumer demand continues to decline, raising concerns about future fresh and processed potato markets.

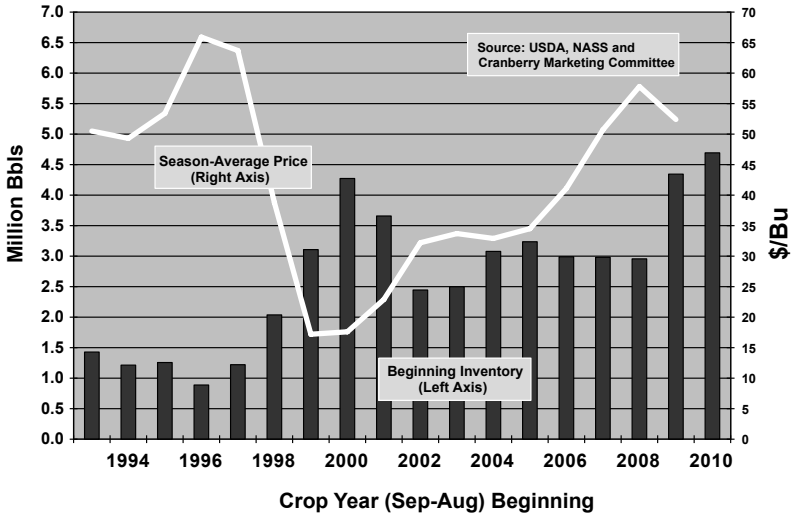
Contract prices for processed vegetables were down compared to recent years due to lower field corn prices and remaining stores of canned product from large crops in 2009. Wholesale prices have remained high for canned and frozen sweet corn, green peas, green beans, carrots and beets. Wisconsin, Minnesota, and Illinois remain the nation's largest concentrated production of canned and frozen vegetables. Wisconsin currently ranks 2nd nationally in production of vegetables for processing.

Recent studies indicate that specialty crop production in Wisconsin adds just over $1 billion in economic activity annually and 9,900 jobs. Processing of specialty crops contributes an additional $5 billion in economic activity to the state of Wisconsin and almost 25,000 jobs.[2]

[1]Bussan is an associate professor and extension vegetable specialist, and Harbut is an assistant professor and extension fruit specialist in the Department of Horticulture, UW-Madison.

[2]Mitchell, Paul D. and Ashleigh A. Keene, Economic Impact of Specialty Crop Production and Processing in Wisconsin, Special Report, Department of Agricultural and Applied Economics, University of Wisconsin-Madison. Downloadable at: http://www.aae.wisc.edu/mitchell/Crop_impacts.pdf

**U.S. Cranberries: Beginning Inventory and Season Average Price**




## Fruit Crops

This was a challenging year for all fruit crops in Wisconsin. Several frost and freeze events in the spring, poor conditions during bloom, high disease pressure due to warm, wet weather and hail damage resulted in reduced yield in all fruit crops. Despite the reduction in volume, the quality of apples and cherries was better than usual.

### *Cranberries*

The USDA crop forecast for Wisconsin cranberry production is 4.35 million barrels (1 barrel=100 lbs.), a 10 percent increase over 2009, and a national crop of 7.35 million barrels, up 6 percent. However, the national crop will likely total less than 7 million barrels. The scale-back from the August production estimate was primarily due to sunscald in Massachusetts and high fruit rot in Wisconsin due to abnormally warm, wet weather.

The Cranberry Marketing Committee has reported a 4.7-million-barrel inventory carryover going into the 2010/2011 marketing season. Along with the large U.S. crop and increased imports from Canada, the large carryover has driven down the price of cranberries in Wisconsin compared to the $50.80/barrel paid in 2009. The size of the price drop will not be known until USDA publishes its first price estimates in mid-January 2011.

Despite a challenging season, Wisconsin continues to be the leader in cranberry production, accounting for about 60 percent of U.S. production.

### *Tart Cherries*

The USDA Wisconsin tart cherry forecast for 2010 is 4.3 million lbs, down 60 percent from the 10.9 million lbs produced in 2009. This is consistent with national production, which was forecast to be down 46 percent (195.3 million lbs.) from 2009. The reduced crop was prima-

rily due to heavy frost and freeze events during blossom and wet, cool weather during pollination, resulting in poor fruit set. As with other fruit crops, the wet weather lead to exceptional growth but also substantial disease pressure. Quality and fruit size were better than usual due to the light crop load and good weather conditions during harvest.

### *Apples*

The apple harvest in Wisconsin started about two weeks earlier than usual due to the early and warm spring. As with other fruit crops, frost during bloom, high disease pressure and hail damage had significant impacts. The 2010 Wisconsin apple crop forecast is 34.9 million lbs., 20 percent lower than 2009. Quality of fruit that escaped damage from frost, disease and hail was better than most years.

## Vegetable Crops

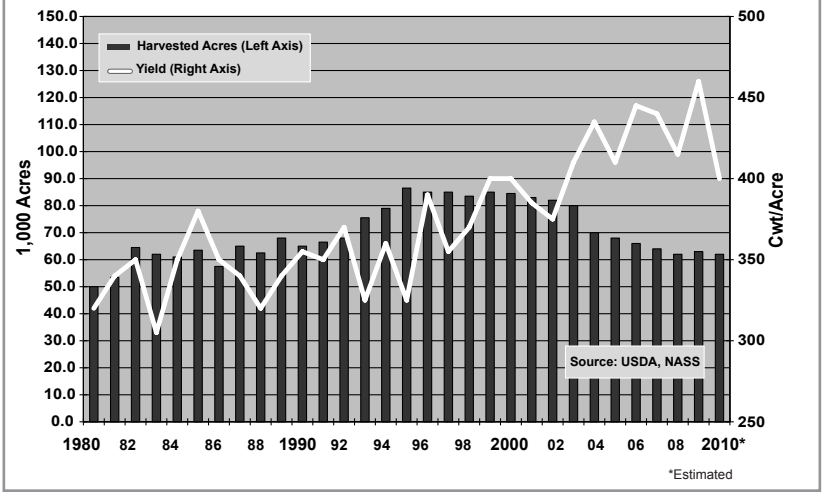
Central Wisconsin, the state's principal vegetable-producing region, received between 28 and 32 inches of rain from June 1 to October 15. That is close to the total normal annual precipitation for the state of Wisconsin. Heavy rains and excessive precipitation caused stresses in most vegetable crops, leading to decreased production and poorer quality across the board.

### *Potatoes*

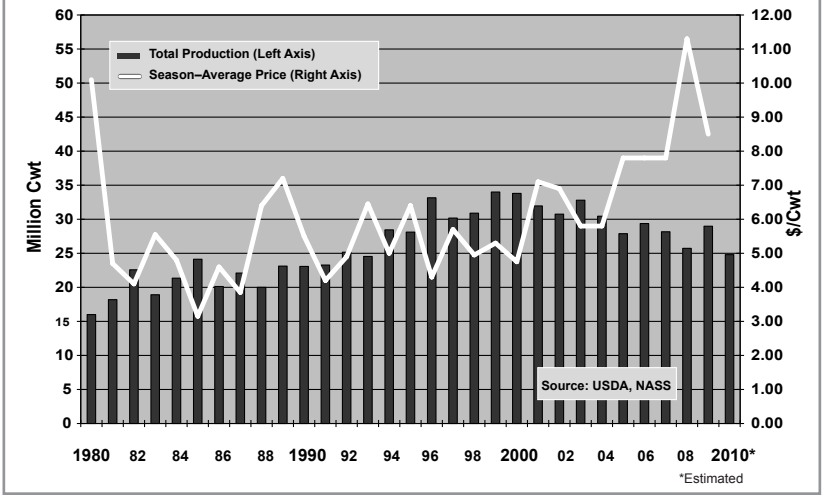
Wisconsin potato acreage has fallen off since the late 1990s, when the state's growers harvested 80,000–90,000 acres. Higher yields have offset part of the acreage decline, so that total production is down much less than the drop in acreage would imply. And strong prices over the last several years have more than offset lower production, yielding a strong upward trend in total crop value despite fewer potatoes sold. Since 1990, the farm value of Wisconsin potatoes has more than doubled.

At 24.8 million cwt., the 2010 Wisconsin potato crop was down about

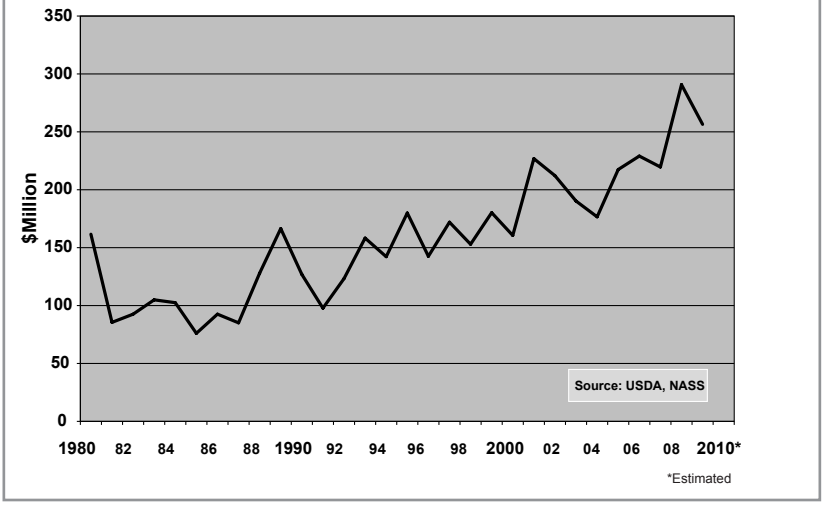
**Wisconsin Potatoes: Harvested Acres and Yield**




**Wisconsin Potatoes: Total Production and Season-Average Price**




**Wisconsin Potatoes:Total Crop Value**



4 million cwt. from 2009. Wisconsin farmers planted 62,500 acres of potatoes, down 1,000 acres from 2009, and harvested all but 500 acres of what they planted. Wisconsin potato yields in 2010 are projected to be 400 cwt. per acre, down 60 cwt. from the record yield in 2009. Yields were down due to wet and warm conditions that caused stress during early bulking and early vine senescence that reduced late bulking. Excessively wet soil led to infection of tubers by plant pathogens prior to harvest, which has increased losses in storage. Rainfalls in the 3–7 inch range delayed harvest throughout central and northern Wisconsin.

Warm, wet conditions led to poorer quality in chip and processed potatoes in the form of lower solids content and higher sugars. Wet soils caused open lenticels and blemishes in fresh potatoes. Late blight turned up in Wisconsin by the end of June, causing substantial management challenges for the state's growers.

Eight percent of the Wisconsin crop is used for seed potatoes, 19 percent for chip potatoes, 18 percent for frozen and dehydrated, and 55 percent for the fresh market.

Wisconsin had almost 20 percent fewer potatoes in storage on December 1, 2010, than on the same date in 2009. This was due both to lower yields and increased sales from September through November. This mirrors the trend at the national level, where storage was down l2 percent. Yields were lower nationally and potatoes were planted on 40,000 fewer acres than 2009.

The fresh market return to growers in December 2010 was more than $5 above year-ago levels. Sales of fresh potatoes have been brisk, and current storage will be tight in Wisconsin and nationally, leading to high prices for non-contracted potatoes.

### *Sweet Corn*

Wisconsin is a leading producer of processed sweet corn, with 76,700 acres harvested in 2010, an 8,000-acre decline from 2009. Total production was estimated at 585,220 tons. Yields were forecast to decrease by 12 percent in 2010 from 2009. Total production dropped over 10 percent due to reduced acres and poorer yields after excessive rains and heat stress during the growing season. Another 6,500 acres of sweet corn were planted for fresh market. Warm temperatures led to rapid crop maturation and completion of harvest by mid-September, about three weeks earlier than normal.

### *Snap Beans*

Wisconsin snap bean production was estimated at 326,900 tons for 2010, down 7 percent from 2009 and 9 percent from 2008. A reduction in planted acreage and average yields led to the drop in total production. Warm and wet summer conditions stressed snap bean growth and reduced yields due to poor root health.

### *Green Peas*

Wisconsin farmers planted 41,430 acres of green peas in 2010, continuing an upward trend seen over recent years. Average forecast yield was 2 tons per acre, leading to total production of just over 80,000 tons.

Warm growing conditions during late May, June and July led to rapid crop maturation and a compressed harvest. Heavy rains promoted some root rot, which limited yields.

### *Cucumbers*

Wisconsin growers planted 6,200 acres of pickling cucumbers in 2010, down only 100 acres from 2009. Harvest was advanced due to warm conditions. The discover of downy mildew in Wisconsin in late summer required growers to aggressively manage for disease prevention.

### *Cabbage*

Heavy rains promoted development of root rot in cabbage, causing substantial losses. Nearly 75 percent of the planted cabbage acres were left unharvested due to loss of stand and unacceptable quality. As a result, kraut processing was well below the scheduled plan of production.

### *Onions*

Wisconsin's 2010 onion production is expected to be 468,000 hundredweight. Growers harvested 1,800 acres, down 200 acres from last year. Yield is predicted to be 260 cwt. per acre, about half of the 2009 level. Some onion acreage was damaged by blowout from heavy winds after planting in April. More fields were destroyed by flooding due to heavy summer rains.

**Wisconsin Potatoes (All Uses) and Vegetables for Processing, 2010**

| *Crop* | *Production (1,000 Tons)* | | *Wisconsin as % of U.S.* |
|---|---|---|---|
| | *Wisconsin* | *United States* | |
| Fall Potatoes (All Uses) | 1,290 | 18,929.4 | 6.8 |
| Sweet Corn | 585.2 | 2,730 | 21.4 |
| Snap Beans | 326.9 | 736.7 | 44.4 |
| Carrots[a] | 77.3 | 404.7 | 6.2 |
| Green Peas[a] | 76.1 | 411.8 | 20.2 |
| Cucumbers[a] | 39.5 | 566.2 | 7.0 |
| Onions | 23.4 | 3,595 | 0.7 |

[a]Statistics from 2009
Source: USDA, NASS

# III. A Closer Look at Wisconsin's Dairy Farms: Reviewing and Expanding Findings from the 2010 Wisconsin Dairy Producer Survey

## Introduction

Bradford L. Barham and Jeremy D. Foltz[1]

In the following four articles, we examine the results from a recent statewide poll of Wisconsin dairy farmers. The 2010 Wisconsin Dairy Producer Survey was developed by the Wisconsin Field Office of USDA's National Agricultural Statistics Service (NASS-Wisconsin), in consultation with PATS staff and other colleagues in the Department of Agricultural and Applied Economics at the University of Wisconsin-Madison. The collaboration allowed questions to be constructed in ways that enabled comparisons with previous surveys undertaken both by NASS-Wisconsin and UW researchers. That allows us to trace important changes in management practices, farm performance, and farmers' perspectives on their situation across the past two decades. We are grateful to NASS-Wisconsin for inviting our collaboration in their survey, and especially to Audra Hubbell, Agricultural Statistician, who worked closely with PATS staff to develop the articles presented below.

The Dairy Producer Survey was sent to over 3,000 dairy farmers and was returned by over 900 (31 percent response rate). Responses provide a representative picture of the experiences, performance, and perspectives of Wisconsin dairy farmers at an important time, one year after a deep decline in dairy prices. They also enable us to place some issues into a longer-term perspective, so the data are timely in both an immediate and more historical sense.

The first article in the set uses the survey's questions on farm size, management practices, and herd productivity to underscore the diversity of dairy farms in Wisconsin. Of particular interest in this article are some of the technology adoption patterns that are identified, some of which are common across the full range of farm sizes and types, others of which are sized-biased either toward larger or smaller farms. The article emphasizes how diverse Wisconsin's dairy farm sector has become in the past two decades and how strong productivity growth has been despite the recent negative price shock, the marked decline in the use of rBST over the past several years, and the persistence of a substantial segment of grazing-oriented dairy farms. Productivity improvements are evident across the full range of farm size groups, though they are strongest among the largest dairy farms.

The second article exploits a set of survey questions on how farmers were affected by the very low milk prices in 2009 and what adjustments they made. It is clear that 2009 was very tough on the majority of the state's dairy farms—almost two-thirds reported having to make significant reductions in basic living expenses as a result of revenue declines. In addition, the debt exposure of dairy farms expanded significantly, especially among the largest farms where cash expenses tend to be a higher proportion of overall costs. Again, the diversity of experiences with low milk prices is an important theme of this article, and suggests that part of the state's resilience may lie in its diverse dairy farm structure.

The third article examines the perspectives of Wisconsin dairy farmers on a number of important state and federal policy issues, ranging from the use value tax reform measure of the 1990s to recent changes in federal dairy marketing and price policy. The results show that while Wisconsin dairy farmers are not generally uniform in their opinions on state and federal policies, there is consensus on some issues. In particular, the MILC program and use-value property tax assessment garnered approval across all types of dairy farmers, with most rating them as the more important of government programs noted in the survey. Farmers' support for other policies was much more varied, with that variation often linked to farm size.

The final article considers the status of health care access for Wisconsin dairy farmers, and is one of the issues covered by the survey where historical comparisons are especially important. Of particular interest is whether recent institutional innovations, especially an expansion of eligibility for BadgerCare Plus and creation of cooperative care models, have improved health care coverage. The percentage of dairy farmers with no coverage has dropped significantly since our previous survey in 2001, while the percentage with coverage for all family members has increased to just over 85 percent. Perhaps equally importantly, the quality of coverage also seems to have improved, with many more reporting that their insurance pays at least part of the cost of preventive services. Problems do remain, and some groups of dairy farmers are still underinsured at a higher rate compared to Wisconsin residents as a whole.

# Dairy Farming in Wisconsin: Recent Trends in Farm Structure, Technology Use, and Herd Productivity

Bradford L. Barham and Claire Kaufman

Since 1993, the Program on Agricultural Technology Studies (PATS) has reported on evolving trends in farm structure, technology adoption and the performance of Wisconsin dairy farms.[2] The 2010 Wisconsin Dairy Farmer Poll, conducted by the Wisconsin Field Office of the National Agricultural Statistics Service with input from researchers at PATS, provides a unique opportunity to compare current trends in farm structure and technology use with data collected and summarized by PATS over the past two decades.

Some remarkable changes have occurred over that time. They include a deepening of the diversity of Wisconsin dairy farm structure and technology, a significant decline in the use of rBST (Posilac) on Wisconsin dairy farms, and at the same time a substantial improvement in herd productivity over the past several years. This article provides a quick overview of trends in farm structure, technology use and performance. This description helps to set the stage for the following article on the effects of the 2009 farm crisis on Wisconsin dairy farms.

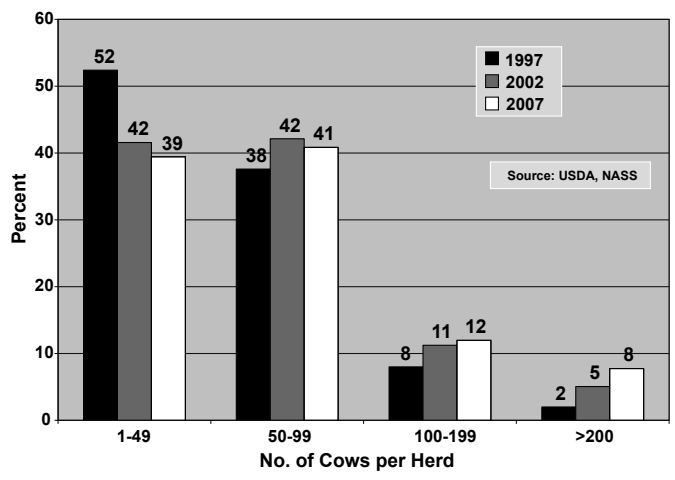
## Recent Trends in Dairy Farm Structure

In the past two decades, the structure of dairy farming in Wisconsin has become much more diverse. In terms of dairy farming systems, Wisconsin arguably has six distinctive types:

1. ***Large-scale confinement farms*** of more than 200 cows that with increasing frequency have more than 500 cows;
2. ***Medium-size farms*** of 100-199 cows that largely use confinement management practices and often involve either multiple families and/or substantial hired labor;
3. ***Conventional confinement farms*** of fewer than 100 cows that are mostly single family operations. These farms continue to play a significant role, but considerably smaller than 20 years ago when they accounted for more than 90 percent of the dairy operations;
4. ***Intensive grazing operations,*** mostly under 100 cows, that have emerged as a substantial group since the mid-1990s;
5. ***Organic farms,*** again mostly under 100 cows and typically using intensive grazing methods, that now account for 3-4 percent of the operations in the state; and,
6. ***Amish farms,*** most of them with fewer than 30 cows, which account for between 5-10 percent of the state dairy operations. Amish farms use some of the same management techniques used by management intensive grazing and organic farms, but often manage their farms in quite distinctive ways as well.

One way of demonstrating the increasing diversity in Wisconsin dairy farming is by examining changes in the size distribution of dairy farms. The figure below clearly shows the recent growth in the percent of farms in the larger herd size groups. Farms of over 100 cows now account for 20 percent of the dairy farms in the state and well over 60 percent of the cows. Farms with more than 200 cows account for 8 percent of the state's dairy operations and more than 40 percent of the cows. This is a major change from the moderate-sized family farm that dominated throughout most of the 20th century. Yet, it is fair to say that most of the farms in the 100-199 herd size range remain predominantly family-managed and family-labor operations. The major substitution of hired labor for family labor begins to occur on the farms in the 200+herd size category[3].

**Distribution of Wisconsin Dairy Farms by Herd Size**




The chart also documents the long-term decline in the percentage of Wisconsin dairy farms with fewer than 100 cows, from 90 percent of operations to 80 percent. The fairly small decline in this proportion is explained at

least in part by the increased diversity of the smaller farm sector. While moderate-sized confinement operations once dominated the Wisconsin dairy farm landscape, they are now only one part of a broader array of moderate-sized dairy farming systems that include grazing, organic and Amish along with conventional dairy farms. While these diverse farming systems account for far less than half of the cows and milk production, they are important to the overall economic and environmental performance of many parts of rural Wisconsin. This makes understanding their technology adoption patterns and their broader herd and economic performance important at a variety of levels.

## Recent Trends in Technology Use

The NASS survey asked farmers about the following dairy farm technology practices: use of free-stall housing and lined manure structures, use of sexed semen, use of rBST (Posilac), and use of intensive grazing practices. With the help of a USDA list of organic farms in Wisconsin, we were also able to identify organic dairy farm respondents in order to include them in the discussion. However, organic dairy farms are not incorporated in statistical comparisons because there were too few observations to allow herd size category distinctions.

The evolution of the use of these various technologies is shown by herd size category in the following table. Over the past decade, free-stall housing use has grown substantially across all herd size categories except farms over 200 cows, which had largely adopted free stalls by 2002. The largest absolute growth since 2002 has been in the 50 to 99 herd-size category, where use of free-stall housing grew from 13 percent to 30 percent of farms. To the extent that free-stall housing for this group is an important precursor to further herd expansion, this shift is promising for the continued growth of larger farms. A similar 'expansion potential' argument could be made for herds in the 100-199 range, where use of free-stall housing facilities increased from 65 percent in 1997 to 77 percent in 2002.

The question relating to use of modern manure structures in the 2010 NASS survey may not be directly comparable to questions in earlier PATS surveys that asked about the presence of lined manure storage facilities. In any case, responses show relatively little change in adoption between 1997 and 2010. There continues to be a very strong scale bias in the adoption of manure storage facilities. On the farms with over 200 cows, about 80 percent report having a lined storage unit, compared with only 8 percent of farms with less than 50 cows, 29 percent of farms with between 50-99 cows, and 44 percent of farms with 100-199 cows. The reported absence of a manure storage unit could mean that these farmers are spreading manure daily or otherwise handling manure in a manner contrary to existing or future environmental regulations. In turn, this emphasizes the importance of nutrient management planning and implementation that helps farmers to work around the expensive investment associated with lined storage facilities.

Sexed semen has been adopted on 23 percent of the dairy farms in the sample, and like most of the other management practices, adoption increases with the size of the farm. For example, 50 percent of the farms over 200 cows reported using sexed semen, as compared to only 11.5 percent of the farms under 50 cows. There are no earlier data to compare with his adoption pattern, but note that sexed semen adoption rates are at relatively high levels for a recently introduced technology. However, it is also worth adding that the percent of farmers planning to use sexed semen 5 years from now does not differ much from current use levels.

The use of rBST (Posilac) on Wisconsin dairy farms has declined in all farm size categories since 2002. This is driven by changes on the demand side of the dairy industry, with a growing number of retailers and proces-

**Change in Technology Adoption Among Wisconsin Dairy Farmers**

| | | *Herd Size (No. of Cows)* | | | | |
|---|---|---|---|---|---|---|
| ***Type of Technology*** | ***Year*** | ***<50*** | ***50-99*** | ***100-199*** | ***200+*** | ***Full Sample*** |
| | | *Percent* | | | | |
| House any cows free-stall | | | | | | |
| | 1997 | 4 | 16 | 50 | 83 | 16 |
| | 2002 | 6 | 13 | 65 | 100 | 23 |
| | 2010 | 11 | 30 | 77 | 97 | 35 |
| Use modern manure structures* | | | | | | |
| | 1997 | 13 | 28 | 42 | 67 | 24 |
| | 2002 | 11 | 27 | 51 | 81 | 27 |
| | 2010 | 8 | 29 | 44 | 81 | 27 |
| Currently using sexed semen | | | | | | |
| | 2010 | 12 | 24 | 36 | 50 | 23 |
| Using rBST (Posilac) | | | | | | |
| | 1997 | 3 | 14 | 30 | 48 | 12 |
| | 2002 | 7 | 19 | 36 | 70 | 20 |
| | 2010 | 2 | 9 | 25 | 50 | 12 |
| Intensive Grazing* | | | | | | |
| | 1997 | 17 | 10 | 7 | 1 | 14 |
| | 2002 | 37 | 18 | 7 | 2 | 25 |
| | 2010 | 35 | 18 | 8 | 4 | 22 |

* Wording of question differed among years.

sors nationwide requesting rBST-free milk products, especially for fluid and soft-dairy products. It confirms the finding in the mid-2000s that rBST had proven not to be the 'juggernaut' technology that both proponents and opponents had once thought it would be, because of its productivity-enhancement effects.

The decline over the past half decade has been from use on about 20 percent of the farms in Wisconsin in 2002 with an average per farm treatment rate of 60 percent of the cows to the current statewide adoption rate of around 12 percent with well less than 50 percent of the cows on those farms being treated. The largest absolute declines in rBST use have occurred on the largest farms. In 2002, over 70 percent of farms over 200 cows reported using rBST. In 2010, only 50 percent of these farms reported using rBST. The largest relative declines in rBST use, however, occurred in the smaller two herd size categories, where adoption rates have declined by more than half from 7 to 2 percent on the under-50 cow herds and from 19 percent to 9 percent on the 50–99 cow herds. Overall, rBST use in Wisconsin has declined by 40 percent over the past half decade. With the 2008 divestiture of the Posilac brand by Monsanto, the relatively low profile promotion by the purchaser Eli Lily, and the continued consumer demand for rBST-free fluid products, it seems likely that rBST has become 'just another technology' for dairy farmers rather than a critical driver of productivity growth and competitiveness.

The other management practice trend reported in the table is the adoption of intensive grazing methods. The measure is based on farmers using pastures for part of their ration and rotating their cows more frequently than once per week. This is an inclusive definition of intensive grazing. The estimates go down by a third using a rotation frequency of at least every 2–3 days.

There are two important observations to offer regarding adoption of intensive grazing. First, there is a persistent small-farm bias in the use of this management practice. It is much more common on smaller farms, with the highest rate of 35 percent on the farms with less than 50 cows in 2010. There a rapid decline in adoption to 18 percent on farms of 50–99 cows and only 4 percent of farms with more than 200 cows report using intensive grazing. Second, the adoption rates of intensive grazing practices have remained relatively constant across the farm size distribution over the past decade except for a slightly higher proportion of larger farms using intensive grazing in 2010 than in previous years. The overall statewide adoption rate has declined from 25 percent in 2002 to 22 percent in 2010, even though the adoption rates across farm size categories have not changed much. The explanation for this change in statewide adoption rates is that in 2010 there are a smaller proportion of farmers in the smaller herd size categories where adoption rates are higher than they were in 2002.

The 2010 Dairy Farm Poll data do not allow an in-depth look at technology use of organic and Amish farmers. But, recent work by PATS on these groups does permit some quick comparisons.

Organic dairy farmers in many respects look more like larger-scale farmers in terms of technology use than their herd size levels would predict. They are more likely to adopt free-stall housing and parlors than other moderate-sized farms. To be certified organic, they are not allowed to use rBST, and they must graze intensively, though many of them are still moving into compliance with intensive grazing standards. They manage manure more intensively than other dairy farmers of their size category, again in part because of the added value of that nutrient source given the restrictions on non-organic fertilizer use.

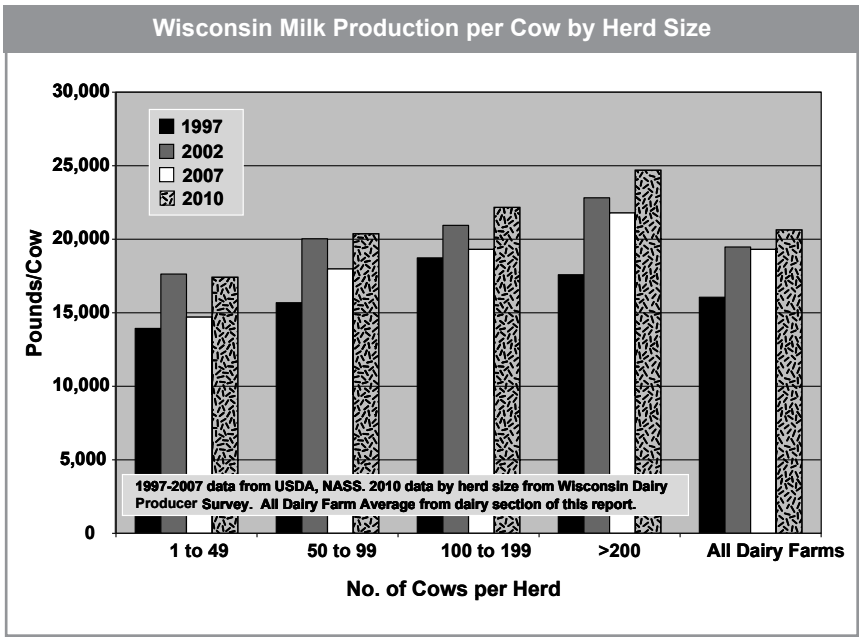
Amish farmers are mostly under 30 cows and averaged 15 in our latest study. They are much more likely to use pasture as a major source of forage, though many of them do not manage pastures intensively. Their other management practices are similar to those used by conventional dairy farms in the less-than-50-cow category.

## Herd Productivity and Dairy Production in Wisconsin

The diversity of Wisconsin dairy farms, especially those with fewer than 100 cows, makes evaluating the performance of the sector challenging, because the ways in which they adapt to major changes in the economic and policy arena can vary substantially among farm types. That point will be developed further in the next article on response to the farm crisis. Here, we look at trends in herd productivity among different farming systems of Wisconsin dairy farms.

Total Wisconsin milk production peaked in 1988 at 25 billion pounds and subsequently remained below that level until 2009, when it reached 25.2 billion pounds. Critical to that recovery in total milk output has been an improvement in herd productivity (milk per cow). Between 1997 and 2010, statewide milk per cow showed a 7 percent improvement from 17,400 to 20,630 pounds per year.

Note that milk production per cow varies across herd size categories. The largest absolute and percentage improvement occurred in the over-200 cow herd size category, rising from 17,600 pounds per year in 1997 to 24,700 in 2010 (as reported in the Dairy Farmer Poll), a percentage change of 40 percent. The next largest increase was in the 100–199 herd size category which




annual milk per cow for graziers was 15,160 pounds, more than 2,000 less than the average yield for the less-than-50-cow herd group, which includes a large number of intensive graziers. Graziers trade lower milk productivity for the lower feed costs associated with higher reliance on pasture. Their relative profitability depends, therefore, on the balance of lower productivity and lower costs, along with any price premiums they might earn from a pasture-based system. We will return to the potential benefit of those tradeoffs further when we discuss the effects of the financial crisis on Wisconsin dairy farmers.

increased to by 19 percent from 18,700 to 22,200. These growth figures may be inflated if the reported herd averages from the 2010 Dairy Farm Poll are greater than the herd milk production levels reported by NASS in the earlier time-periods. In any case, given the substantial decline in rBST use for these two larger herd size groups during the past seven years, their growth in milk per cow underscores the improved genetics and management that has contributed to consistent productivity gains.

Changes in milk yields have been smaller for the other two herd-size categories. Consequently, the gain in productivity is attributable to a combination of growth in productivity on larger dairy farms and growth in the proportion of the state's dairy farms in the larger herd size categories.It is worth comparing these annual per cow milk yields with those for intensive graziers. In 2010,

## Conclusion

The 2010 Wisconsin Dairy Farm Survey allows us to better portray the evolution of herd size, technology use, and productivity patterns across types of Wisconsin dairy farms. There is clear evidence that Wisconsin dairy farming has become more diverse in recent years. There are more larger farms, which are typically adopting some emerging farm technologies at a higher rate than smaller farms. There are some distinctive types of moderate-sized farms that have adopted such strategies as increased reliance on pasture (intensive grazing) and organic production separating them from conventional semi-confinement dairy farms. Despite, or perhaps because of this increased diversity, Wisconsin milk has increased over the last decade, and prospects for continued industry growth are very positive.

## Impacts of the Price Crisis of 2009 on Wisconsin Farms

Bradford L. Barham and Claire Kaufman

Last year, Status of Wisconsin Agriculture 2010 evaluated the impacts of the precipitous decline in milk prices and the tightening of credit markets that marked much of 2009. As noted elsewhere in this report, milk prices partially recovered in 2010. But for reasons noted below, this partial recovery belies the fragile situation of Wisconsin dairy farmers going into 2011, especially given the potential of low to moderate milk prices and rising feed prices.

This article features farmers' perspectives on the 2009 crisis and some of their management responses, based on their answers to a set of questions asked in the 2010 Dairy Farmer Poll. Farmers reported on their experiences with low prices and tight credit, how they adapted their management and investment decisions, how their debt situation has evolved and how they are financing their debts. As in the previous article, the results are compared across different farm size categories and between organic farmers and other farmers. The results are general, in the sense that the impacts of the crisis were quite severe, and distinct, because severity and responses differed considerably across different types of dairy farms.

Last year's Executive Summary in the Status of Wisconsin Agriculture 2010 highlighted the following negative impacts on Wisconsin farmers:

- Total receipts from Wisconsin farm sales dropped by an estimated $1.8 billion (18 percent) in 2009, with nearly 80 percent of that decline resulting from much smaller milk checks.
- Wisconsin net farm income in 2009 was down an estimated $1.45 billion, or 56 percent, from 2008 levels.
- Dairy farmers alone saw their equity fall by an estimated $1.8 billion. Larger farms had fewer belt-tightening options, and were potentially more vulnerable to a credit squeeze because they came into the crisis more highly leveraged.

Two other articles from last year's Status report provide useful context for this article. Paul Dietmann, Director of the front line Farmer Assistance Center of the Wisconsin Department of Agriculture, Trade and Consumer Protection, emphasized that most Wisconsin dairy farms had both high levels of farm equity and conservative levels of debt exposure when the crisis began. This meant that despite widespread cash losses in 2009, a relatively small number of the state's dairy farmers were in imminent danger of going out of business. However, larger-scale producers were somewhat more vulnerable, partly because recent expansions had substantially increased many operators' exposure to debt, and partly because it was more problematic for larger farms to reduce production in response to lower milk prices. Dietmann noted that Wisconsin dairy farmers' ability to recover from the 2009 crisis depended not only on improved price-cost conditions but also on a loosening of the tight credit markets.

In another article, Brad Barham compared milk prices in 2009 paid to conventional and organic dairy farmers in Wisconsin. While the Wisconsin all milk price declined almost 50 percent from its high in 2008 to a low of between $11–12 per cwt. for much of 2009, pay-prices to organic dairy farmers fell by less than a 10 percent. This was due largely to supply management decisions made by Organic Valley Cooperative in mid-2009. Barham estimated that members of Organic Valley experienced about a third of the revenue loss of conventional dairy farmers in 2009.

This article follows up on that analysis by taking a closer look at the response of organic dairy farmers to the 2009 crisis to see whether the impacts of the crisis were less severe for them as well.

### Problems Experienced in 2009

The following table characterizes the problems that farmers experienced as a result of low milk prices and tight credit. About 30 percent of the conventional farmers and 38 percent of organic farmers reported no serious problems. The greatest divergence across the various categories of farms was in the percentage of farmers who said they were unable to meet basic living expenses. About 41 percent of conventional farmers said they were unable to do so. Among conventional producers, this response was most common (45 percent) among those milking fewer than 50 cows and least common among those milking more than 200 cows (36 percent). Among organic producers, 21 percent had this response. Responses to the other questions about other problems were fairly uniform across all farm size categories, although organic farmers were considerably less likely to say they had trouble paying their suppliers on time.

### Adaptations

The next table reports on the financial strategies employed by different types of operations to adapt to the

**Financial Problems Experienced by Wisconsin Dairy Farms***

| Type of Financial Problem | Herd Size <50 | 50-99 | 100-199 | 200+ | Organic | Full Sample |
|---|---|---|---|---|---|---|
| No serious problems | 26% | 37% | 27% | 31% | 38% | 31% |
| Unable to meet basic living expenses | 45 | 41 | 38 | 36 | 21 | 40 |
| Unable to make farm loan payment | 24 | 21 | 27 | 37 | 21 | 26 |
| Unable to borrow operating money | 20 | 16 | 19 | 21 | 17 | 18 |
| Unable to pay farm suppliers on time | 57 | 47 | 60 | 55 | 38 | 53 |

***Question:** Which of the following problems have your experienced as a result of low milk prices and tight credit?

About one out of eight farmers said they planned to get out of dairy farming. That may seem high, but next to selling farmland and selling forward contracts, it was the least common response. It is also consistent with Dietmann's observation that the price crisis of 2009 alone was not sufficient to drive considerable exit from the sector.

Dietmann was also correct in observing that large-scale operators were more likely to find themselves deeper in debt as a result of the crisis. Almost 75 percent of those milking more than 200 cows reported borrowing more money. The fact that larger operators are more likely to borrow underscores both their potential difficulty in covering cash expenses due to greater reliance on hired labor and purchased inputs, and their stronger access to credit. Later we consider the impacts of expanded borrowing on debt positions.

**Financial Changes on Wisconsin Dairy Farms Following 2009 Crisis***

| Type of Change Made | Herd Size <50 | 50-99 | 100-199 | 200+ | Organic | Full Sample |
|---|---|---|---|---|---|---|
| Borrowed more | 32% | 47% | 56% | 74% | 17% | 49% |
| Delayed investments | 67 | 76 | 79 | 83 | 67 | 75 |
| Spent less on inputs | 67 | 75 | 70 | 65 | 58 | 70 |
| Used forward contracts | 3 | 6 | 12 | 31 | 4 | 11 |
| Sold some farmland | 5 | 2 | 3 | 1 | 0 | 3 |
| Reduced living expenses | 66 | 67 | 69 | 65 | 46 | 66 |
| More off-farm work | 20 | 16 | 18 | 10 | 4 | 16 |
| Postponed retirement | 21 | 22 | 22 | 23 | 17 | 22 |
| Decided to exit dairying | 18 | 16 | 8 | 6 | 8 | 13 |

***Question:** To adapt to low milk prices and tight credit, which of the following decisions or changes did you make in the last year?

By contrast, only 32 percent of the farms with fewer than 50 cows, and 47 percent of those in the 50- to 99-cow group, reported borrowing more money in response to the situation. Because there was less added borrowing among these smaller-scale farms, which comprise about 75 percent of the state's dairy farms, only about half of the state's dairy farms expanded their borrowing during the 2009 crisis. In contrast, only 17 percent of organic dairy farmers reported borrowing more money in response to the crisis, supporting the argument that the crisis did not hit them as hard as it did other dairy farmers.

Another notable contrast has to do with the proportion of dairy farmers who said they opted to use forward contracts to adapt to the financial conditions. Almost 31 percent of those in the over-200-cow category said they used this approach, compared to only 3 percent of those with fewer than 50 cows. Only 4 percent of organic dairy producers said they using this strategy, which is not surprising given that Organic Valley Cooperative and other organic processors dampened the risk exposure in 2009 by delivering less organic milk to market during in the downturn. Moreover, farm prices for organic milk do not track Class III prices underlying the futures contract typically used in forward contracts.

tough conditions of 2009. The two most common strategies were postponing other investments (75 percent of farmers) and reducing living expenses (66 percent). Those two responses varied little across farm size categories. However, organic dairy farmers were much less likely to say that they reduced living expenses; 46 percent of them said they had to do so.

Exactly how this different adaptation strategy between larger farms and other farms translates into milk contract choices currently and in the near future could be a topic of useful inquiry. To date, relatively few dairy producers use forward contracts to manage future price risk.

## Production and Investment Choices in 2010

Farmers' production and investment choices in 2010 provide a revealing contrast between the larger and smaller dairy farms in Wisconsin. Simply put, smaller farms were much more likely to reduce their intensity of production than were larger farms. While only 4 percent of farms in the less-than-50-cow category and 12 percent of farms in the 50-99 category increased the acres they planted, 26 percent of the farms over 200 cows expanded acreage. At the same time, 21 percent of farms less than 50 cows decreased the acres they planted, in comparison to only 5 percent of the farms in the over-200 cow group.

**Farming Changes on Wisconsin Dairy Farms Following 2009 Crisis***

| | *Herd Size* | | | | | |
|---|---|---|---|---|---|---|
| ***Farming Choices Affected by Financial Situation*** | ***<50*** | ***50-99*** | ***100-199*** | ***200+*** | ***Organic*** | ***Full Sample*** |
| More acres planted | 4% | 12% | 18% | 26% | 40% | 14% |
| Fewer acres planted | 21 | 13 | 9 | 5 | 60 | 13 |
| More cows milked | 11 | 23 | 38 | 43 | 71 | 26 |
| Fewer cows milked | 23 | 14 | 11 | 8 | 29 | 15 |
| Hired more workers | 1 | 3 | 4 | 5 | 0 | 3 |
| Hired fewer workers | 22 | 29 | 50 | 41 | 100 | 32 |
| More expensive seed | 3 | 4 | 5 | 6 | 13 | 5 |
| Less expensive seed | 47 | 45 | 40 | 34 | 87 | 43 |
| Made expansion or modernization plans | 0.4 | 3 | 7 | 7 | 0 | 4 |
| Postponed expansion or modernization | 34 | 45 | 52 | 57 | 100 | 45 |

***Question:** Has your current financial situation affected the following choices in 2010?

Dairy cow numbers show a similar pattern. On farms of less than 50 cows, 10 percent reported increasing the number of cows they milked compared to 23 percent who decreased the size of their herds. In contrast, 43 percent of the farms over 200 cows increased the number they were milking compared to only 8 percent who decreased the number. For this latter comparison, it also worth highlighting that all of the herd-size categories other than farms under 50 cows were more likely to increase rather than decrease cow numbers in 2010. Also, organic farms resumed their recent expansionary approach, with 71 percent reporting increasing cows milked relative to the supply contraction they experienced in 2009. There is a potential contradiction here given that organic farmers were also more likely to report reducing acres planted (60 percent) compared to increasing (40 percent), but this might have reflected some overcapacity brought on by reducing cow numbers in 2009 as part of the supply management approach they were asked to take. In summary, these responses support the point raised throughout Status of Wisconsin Agriculture 2010 and the current edition that milk production in Wisconsin has not declined despite the severe price shock of 2009.

Note that, although that more cows were milked in 2010 and larger farms increased their acres planted, all of the herd size groups were far more likely to report hiring fewer paid workers. This change is most striking on the larger farms. For example, 50 percent of the farms with 100–199 cows reported decreasing the number of hired workers, while only 4 percent reported increasing them. A similar contrast is evident across the herd size categories, with a nearly 10:1 ratio of farms reporting decreasing their number of paid workers relative to those increasing their number. A similar ratio is evident for those postponing expansion plans versus those making them. In other words, it appears as if in 2010, many dairy farmers are trying to expand cash flow through more cows and reduce cash expenses through working harder on their own farms without making additional investments in facilities, major equipment, or hiring labor. It appears to be a period where farmers may be working harder with what they have in an effort to recover financially from the price crisis of 2009. It might also be explained in part by loss of jobs in town and more unpaid family labor working the farm. Further analysis beyond the data available in the survey would be needed to discern between these two potential explanations.

## Debt Levels, Exposure and Types

The 2010 Wisconsin Dairy Farmer Poll asked dairy farmers three debt-related questions: current debt compared to debt in 2008, ratio of debt to assets in January 2008 and January 2010, and what type of debts they hold. There are notable contrasts across farm size categories. Over 80 percent of the farms with more than 200 cows report having somewhat or much higher debt, compared to only 47 percent and 51 percent of the farms under 50 and between 50 and 99 cows.

Debt exposure increased dramatically for the largest farms between 2008 and 2010. In 2008, only 22 percent of dairy farms with over 200 cows reported debt-to-asset ratios over 40 percent. In 2010, that proportion had risen to 53 percent, about 30 percentage points higher levels than reported in the smaller two herd-size groups. The farms in the 100-199 herd size category fall in between, with an increase from 15 percent with debt-to-asset ratios of over 40 percent in 2008 to 37 percent in 2010. All of the herd size categories experienced major increases in debt exposure, but the smaller farms started from a much lower base. The only group of producers that did not experience a significant increase in their debt exposure were organic dairy farmers; only 4 percent of them reported a much higher debt level than prior to the crisis.

The types of debt held in the portfolio of loans are similar across the herd size categories. The larger farms are more likely to have a higher proportion of their loan portfolio in the form of long-term loans from lending institutions, while the smaller farms are more likely to piece together financing from less formal or more expensive sources, such as loans from family and friends or in credit card usage. When we looked further at the estimated 9 percent of debt for farmers with less than 50 cows financed via credit cards, we found very few instances where credit cards were accounting for a large share of the overall debt. In other words, that 9 percent figure reflects a fairly broad use of credit cards for small levels of debt rather than a few farmers with high balances of credit card debt.

Dairy producer responses to questions regarding debt confirm Dietmann's warning from last year's Status of Wisconsin Agriculture about the increased vulnerability of Wisconsin dairy farmers resulting from the 2009 price decline. The large change in debt-to-asset ratios means that the sector is more financially vulnerable than it was two years ago, especially if major price-cost squeeze were to occur.

**Debt on Wisconsin Dairy Farms in 2010**

| | *Herd Size* | | | | | |
|---|---|---|---|---|---|---|
| | *<50* | *50-99* | *100-199* | *200+* | *Organic* | *Full Sample* |
| ***Debt Compared to 2 Years Ago**** | | | | | | |
| Much higher | 17% | 22% | 28% | 45% | 4% | 26% |
| Somewhat higher | 30 | 29 | 37 | 34 | 26 | 32 |
| About the same | 37 | 33 | 23 | 14 | 35 | 29 |
| Somewhat lower | 13 | 12 | 11 | 7 | 26 | 11 |
| Much lower | 4 | 4 | 0 | 1 | 9 | 3 |
| ***Ratio of Farm Debts to Value**** | | | | | | |
| Debt <10% assets | | | | | | |
| Jan. 2008 | 52% | 39% | 34% | 16% | - | 37 |
| Jan. 2010 | 38 | 28 | 15 | 6 | - | 24 |
| Debt 10-40% assets | | | | | | |
| Jan. 2008 | 40 | 53 | 51 | 62 | - | 51 |
| Jan. 2010 | 40 | 47 | 48 | 41 | - | 44 |
| Debt >40% assets | | | | | | |
| Jan. 2008 | 8 | 8 | 15 | 22 | - | 12 |
| Jan. 2010 | 22 | 25 | 37 | 53 | - | 32 |

***Question:** How does the current financial level of debt on your farm compare to the level of debt 2 years ago, before the financial crisis started?
****Question:** On the following dates, what was the approximate ratio of farm debts to value on your farm?

**Type of Debt Held on Wisconsin Dairy Farms, 2010***

| | *Herd Size (No. of Cows)* | | | | |
|---|---|---|---|---|---|
| *Type of Debt* | *<50* | *50-99* | *100-199* | *200+* | *Full Sample* |
| Credit card | 9% | 3% | 3% | 2% | 4% |
| Short-term loan from lending inst. | 28 | 30 | 25 | 24 | 27 |
| Long-term loan from lending inst. | 37 | 46 | 57 | 59 | 48 |
| Government credit program | 6 | 6 | 6 | 8 | 6 |
| Advance from supplier | 6 | 3 | 3 | 3 | 4 |
| Loan from family or friend | 14 | 12 | 6 | 5 | 10 |

***Question:** By percent, where is the debt that your farm held on January 1, 2010?

## Concluding Remarks

This article shows that the milk price crisis of 2009 clearly hit Wisconsin dairy farmers hard. Most had to make major adjustments in their family living situation and in their farming operations to deal with the dramatic loss in revenues, profits and equity. Wisconsin dairy farmers were largely in a strong financial position prior to 2008, and so relatively few went out of business because of loan defaults. But the increased debt exposure from the events of 2009 makes far more farmers financially vulnerable to further shocks going forward. Declining milk prices and a surge in corn and soybean prices could jeopardize farmers when they are less able to cope with another tough period.

If we combine the main findings of the previous article with this one, we get a nuanced picture of diversity of operations and performance in Wisconsin's dairy sector. Clearly, the most dynamic sectors in terms of expansion, investment in new technologies, and productivity have been the larger confinement operations, especially those over 200 cows. These larger farms have accounted for more of the state's production over time and have likely expanded that position in response to the 2009 crisis by increasing their productivity and number of cows milked. At the same time, they also were the hardest hit by the crisis and are now in a significantly more vulnerable debt-to-asset position than the rest of the sector. This outcome follows in part from their increased reliance on purchased feed (not shown above) and hired labor. As a result, they will also probably be less able to reduce cash expenses if milk prices are low in 2011.

The other group worth mentioning is organic dairy farms. Because of supply management policies and sustained price premiums during the 2009 crisis, they fared much better financially than the rest of the dairy sector. In 2010, they have picked up production and appear to be in the best financial position among the different dairy groups featured in these two articles, with very low levels of debt exposure, less vulnerability to price-cost squeezes (especially those producers who are largely self-reliant in feed and forage), and relatively low losses from the 2009 crisis. Whether this sector can offer opportunities for further expansion for other interested farmers depends, of course, on future demand growth in the organic sector. It is important to recognize that even with their strong growth over the past decade, they continue to account for only a small percentage of the state's dairy farms.

In the end, whether we will remember the price crisis of 2009 as a bad year for a relatively healthy dairy farm sector, or as the watershed for a tough era, depends on whether the next couple of years of price-cost conditions provide Wisconsin dairy farmers a chance to recover their weakened equity positions and reduce their debt exposure. If dairy prices soften further in 2011, and/or feed prices surge, then it could be difficult for farmers across the diverse spectrum of the state's sector to withstand another shock. The rollercoaster of prices and profits in the past decade has made for a challenging ride.

## Dairy Farmers' Opinions on State and Federal Policies

Jeremy Foltz, Julia Collins, and Audra Hubbell[4]

State and Federal policies affect dairy farmers' livelihoods in multiple ways. Milk pricing policies and price supports have a direct effect on farmers' incomes. Tax policies affect their net incomes and influence their investment decisions. Policy in other areas, such as immigration, has a direct impact on farm operations. The 2012 farm bill already under discussion in Congress may entail major changes in some existing programs as well as introducing some new ones. It is important to know Wisconsin dairy farmers' opinions about different policy alternatives and about how they think policy in previous farm bills has affected them.

The NASS 2010 Dairy Producer Survey included several questions about farmers' views on price policies, tax policies and other issues. We summarize the results below.

### Federal Milk Marketing Orders[5]

Federal Milk Marketing Orders (FMMOs) were established in the 1930s to regulate minimum prices for milk and have undergone numerous changes since then. Orders apply to geographic areas that cover most of the United States. About 65 percent of U.S. Grade A milk is covered by the 10 federal orders currently in effect, while individual state orders cover most of the rest. Most of Wisconsin is part of the Upper Midwest order, with a small portion of Southwestern Wisconsin part of the Central order.[6] Milk is divided into four classes, each with its own minimum price: Class I is liquid milk, Class II milk is used for frozen and soft products, Class III is used for cheese, and Class IV is milk used to make butter and dry milk products. The prices of specified finished milk products determine the minimum monthly price for milk in each class through complex formulas.

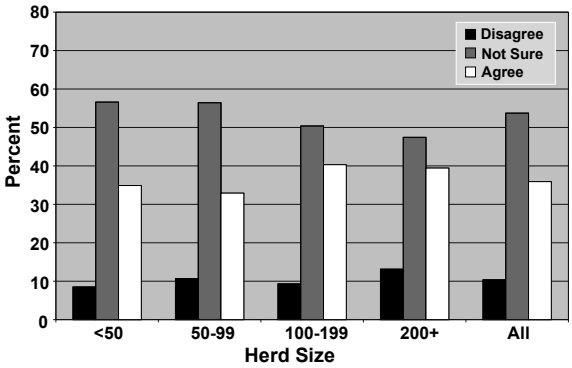
Class I prices are determined by adding a fixed amount, called the Class I differential, to Class III or Class IV prices. Class I differentials vary both within and among orders. In general, Class I differentials are lower in the Midwest than in the south and east, meaning that Midwestern farmers receive lower prices for Class I milk. The geographic difference in Class I differentials was originally meant to attract milk from areas with an abundant year-round supply, such as the Midwest, to areas that have seasonal deficits, like the Southeast. However, this geographical structure is controversial, and many Midwestern farmers favor leveling or even eliminating differentials. A 1994 poll conducted by the Agricultural Technology and Family Farm Institute found that, of five federal policy alternatives, Wisconsin dairy farmers most preferred reducing or eliminating the regional price differentials.[7]

The NASS Wisconsin Dairy Producer Survey asked dairy farmers about the impacts of two aspects of FMMOs: (1) A shift in 2000 to calculating Class milk prices based on product price formulas. Before then, Class prices were based on prices being paid by Wisconsin and Minnesota dairy plants for milk used for manufactured products. More farmers reported negative effects (39 percent) than positive effects (16 percent), but over 45 percent reported that they were not affected by this change. (2) A consolidation of FMMOs. In 2000 there was a reorganization and realignment of marketing orders that reduced their number from 33 to 10. More farmers reported a negative effect (35 percent) than a positive effect (13 percent), while 52 percent said they were not affected.

Due to the complexity of the FMMO and milk pricing systems, it is likely that many dairy farmers had difficulty ascertaining the effect that these changes had on their operations.

Farmers were asked to whether they agreed or disagreed with terminating FMMOs, which would allow market forces to play a larger role in pricing milk. Slightly more than half said they were unsure, possibly reflecting the fact that farmers have no experience with free market pricing. Most of the rest said that FMMOs should be terminated—35 percent agreed, 10 percent disagreed. This may be due to the unpopularity in the Midwest of the geographic disparities in Class I differentials.

**Federal Milk Markeing Orders Should be Terminated**

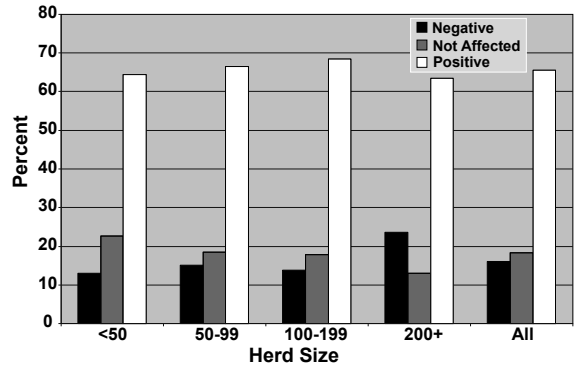


## Milk Income Loss Contract Program

The Milk Income Loss Contract (MILC) program, instituted in 2002, provides direct payments to dairy farmers if the Boston Class I milk price falls below a certain level (currently $16.94 per hundredweight adjusted by a feed cost index). There have been years when few or no payments were made, but in 2009, producers received MILC payments in all but two months. Farmers can receive payments for production up to a cap of just under 3 million pounds per year, the annual yield from about 150 Wisconsin cows. This means that farmers with smaller herds can receive payments for their entire production, while larger farms receive no payments for production above the cap. Farmers in Wisconsin, where the average herd size is about 100 cows, benefit proportionally more from the MILC program than do those in Western states where the average herd size is larger.

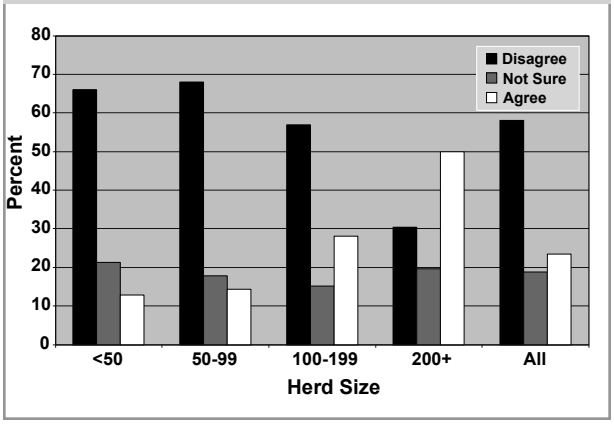
Asked about the impact of MILC, 66 percent of farmers said the impact was positive, while 15 percent said it was negative. Farmers with herds of 200 or more were more likely to rate the MILC impact as negative (24 percent of large farmers, as opposed to 15 percent of farmers with herds under 200). Since operators of large farms don't receive benefits for production above their cap, they may feel that MILC gives small farmers an undue advantage.

**Introduction of Milk Income Loss Contract Program**




Farmers were also asked about the idea of increasing the maximum volume of milk covered under the MILC program. Overall, 58 percent of farmers disagreed, but opinions differed depending on the respondent's herd size. Most of those with herds under 200 cows were not in favor of raising the caps. Of those milking more than 200 cows, 50 percent favored raising the caps, while 30 percent did not.

**Current Design of MILC Should be Changed to Increase the Maximum Value of Milk Covered**



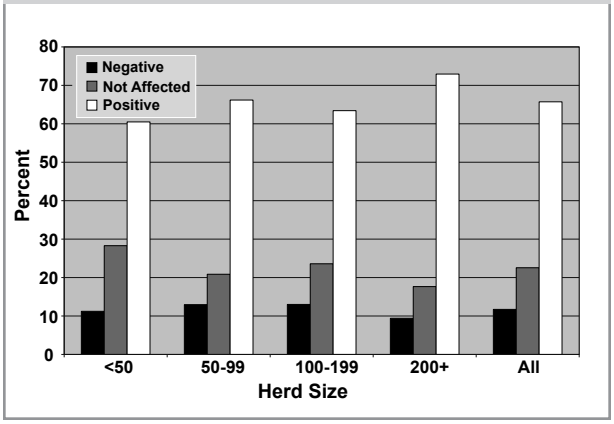

## Use-value property tax assessment

Until recently, farmland was taxed according to its assessed market value. This resulted in a relatively high property tax burden for farmers, especially those on the urban fringe whose land was suited to development. In 1992, property taxes amounted to over 40 percent of Wisconsin farmers' net income.[8] The portion of household income spent on property taxes by farm households was over twice that spent by non-farm households.

That was changed by legislation enacted in 1996 that called for farm land to be taxed according to its value for farm production, rather than its market value. This reduced property taxes for many farms, but it generally elevated property taxes for non-farm residents, especially in rural communities. There were spillover effects on farmers if local services had to be cut back.

When asked about the shift to use-value assessment, 64 percent of dairy farmers reported a positive effect, while 12 percent said they had been affected negatively. Most farmers in all herd-size categories reported positive effects, but the change was most popular among those with larger farms. Of farmers milking more than

**Moving Toward Use-Value Property Tax Assessment of Farmland**



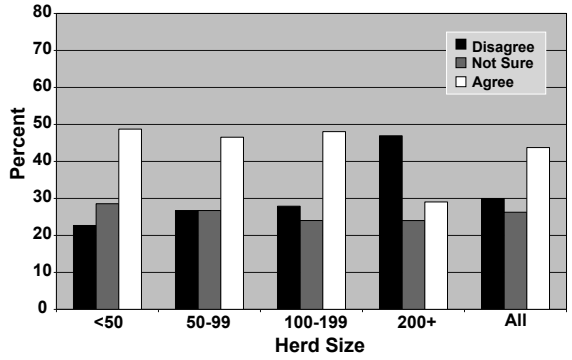
200 cows, 73 percent reported positive effects, while 60 percent of those milking fewer than 50 cows did so.

## Supply Management

Highly volatile milk prices are a big concern for dairy farmers. Several plans have been proposed to address this issue, in which farmers would be required to limit production in order to better match supply to demand. Such a supply management program could provide more price stability, but it would limit farmers' production options and constrain the industry's ability to respond to changing market conditions. Low milk prices in 2009 spurred new interest in mandatory supply management.

When asked their views on a supply management program, about a quarter of farmers were unsure, while 46 percent were in favor and 27 percent opposed. Almost half of those with herds under 200 agreed with the idea, while about a quarter disagreed. The proportions were reversed among those with herds over 200. Large operations may have recently expanded or be interested in doing so and thus be more concerned about the disadvantages of a supply management program.

**To Help Control Milk Price Volatility the U.S. Should Adopt a Supply Management Program**

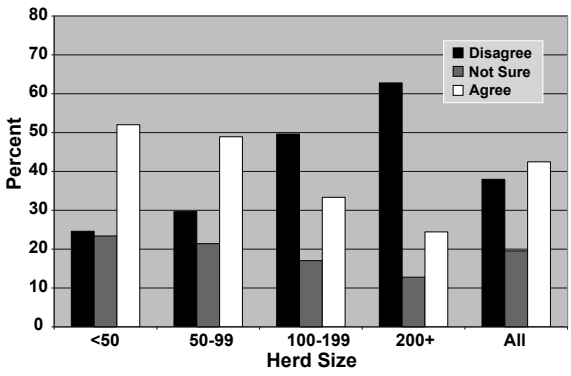



## Legalizing Raw Milk

The idea of legalizing unpasteurized, milk sales has been hotly debated in recent years in Wisconsin and throughout the nation. Proponents argue that raw milk is more healthful than pasteurized milk and just as safe. Opponents point to numerous disease outbreaks as evidence that unpasteurized milk is inherently unsafe. In May 2010, Governor Doyle vetoed a bill that would have allowed on-farm raw milk sales.

The opinions of Wisconsin dairy farmers on this issue tend to be divided by herd size. Those with smaller

**It Should be Legal for Farmers to Sell Raw Milk to the Public**

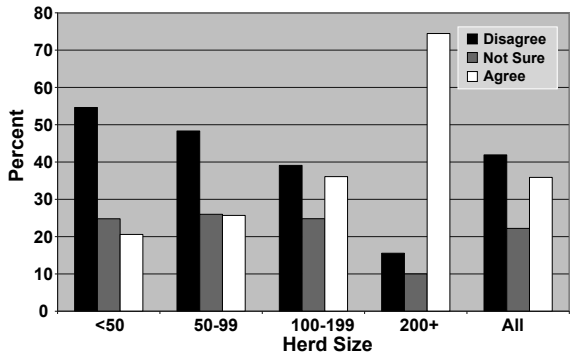



operations are more likely to favor legalization of raw milk; those with larger establishments tend to disagree. Farmers milking fewer than 50 cows were the most strongly in favor (52 percent agreed and 25 percent disagreed), while farmers with 200 or more cows were the most strongly opposed (24 percent agreed and 63 percent disagreed). Overall, 46 percent of farmers favored legalizing raw milk and 34 percent did not. Those with small farms may see raw milk as a business opportunity. Those with larger operations may see less benefit from a product that involves direct farmer-to-consumer marketing and may be more concerned that disease outbreaks due to raw milk could damage the reputation of all milk. Small farmers more often drink the unpasteurized milk they produce and may be more convinced of its safety.

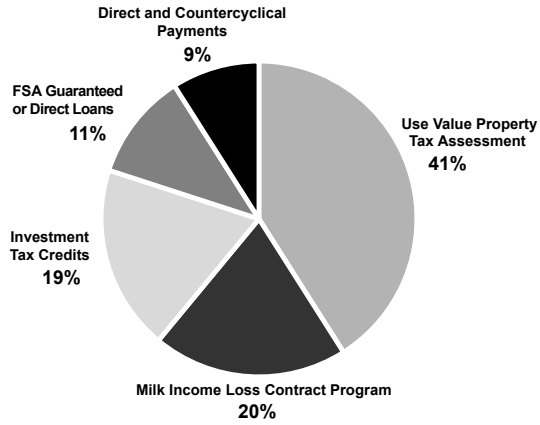
## Guest Worker Programs

Immigration is also a big issue for Wisconsin dairy farmers, especially for those who depend on hired labor. There have been proposals at the federal level for a guest worker program that would allow more immigrants to enter the United States and work legally in industries with labor shortages. The impacts of such a program on dairy farmers would vary considerably depending on the size of the operations, and we do see clear differences of opinion along those lines. While farmers in the three smaller herd categories were more likely to disagree than to agree that a guest worker program is needed, the percent in favor of the idea increased with herd size. Operators milking 200 or more cows were much more likely to favor a guest worker program (74 percent in favor, 6 percent opposed), clearly reflecting the greater need for hired labor on large establishments. Overall, 47 percent of farmers disagreed with the idea, while 29 percent were in favor.

**Farmers Need a Foreign Guest Worker Program Allowing Immigrants to Work Legally on Farms**




**Most Important Government Programs**




## Importance of Government Programs

Dairy farmers were asked to rate five government programs in order of importance: use-value property tax assessment, the Milk Income Loss Contract program (MILC), USDA Farm Service Agency (FSA) guaranteed or direct loans, direct and counter-cyclical payments and investment tax credits. Use-value property tax assessment and MILC are described above. FSA loans refer to loans for farmers made directly by the FSA or made by banks and guaranteed by the FSA. Direct and counter-cyclical payments are payments from USDA to farmers producing crops, either unconditional payments (direct) or payments made when prices fall below a specified level (counter-cyclical). Dairy farmers are eligible for these payments if they produce the program crops (including corn used for both grain and silage). Investment tax credits allow farmers to receive credits for investments in buildings and equipment.

Of the five programs, use-value assessment was the clear favorite, with 41 percent of dairy farmers rating it as the most important. MILC and investment tax credits followed, each was rated as most important by about 20 percent of respondents. Direct and counter-cyclical payments and FSA direct or guaranteed loans were rated as the least important. Although many dairy farmers do receive direct payments, counter-cyclical payments may be less important to farmers now than in the past due to higher recent commodity prices. There were no significant differences in ratings depending on herd size. These ratings underscore the clear positive opinion that most farmers expressed about use-value property tax assessment and MILC earlier in the survey.

## Conclusion

The results of the NASS Dairy Producer Survey show that Wisconsin dairy farmers are not generally in consensus in their views of state and federal policies, although agreement exists on a few issues. Federal Milk Marketing Orders are a particularly complex issue; farmers seem dissatisfied overall with the current form of the program and are more likely to support terminating the orders than continuing them. The MILC program and the move to use-value property tax assessment have much more consistent approval.

Support for other policies was linked to farm size. Dairy farmers as a group were more likely to agree than disagree that USDA should adopt a supply management program, but farmers with herds of 200 or more were more likely to disagree. Large-scale operators agreed strongly that the U.S. should establish a guest worker program, while smaller farmers tended to disagree. Smaller farmers tended to support legalizing the sale of raw milk while larger farmers were generally opposed.

As preparations for the writing of the 2012 Farm Bill continue, it will be important to hear dairy farmers' experiences and opinions and to provide them with opportunities to learn about proposed changes. With farmers still suffering from the 2009 financial crisis, the opportunity to rework farm policy to boost chances for a more secure future for farm families and the dairy industry is particularly timely.

## Health Insurance Coverage Among Wisconsin's Dairy Farmers

Jeremy Foltz, Julia Collins and Erin McBride[9]

### Health Insurance

In 2001, the University of Wisconsin's Program on Agricultural Technology Studies (PATS) surveyed Wisconsin dairy farmers on their health care coverage. The survey revealed a serious lack of coverage among dairy farmers, with almost 20 percent of dairy farm families completely uninsured. Most of those with coverage were under-insured, meaning that their insurance plans did not meet their medical needs. More specifically, 80 percent lacked any form of coverage for preventive care. Dairy farm families were less likely to be insured than other types of farm households, and much less likely to be insured than Wisconsin residents in general. This situation increased the vulnerability of farmers working in a risky occupation. These families often suffer from high medical debt because of the lack of insurance coverage. The analysis of the 2001 data did not address the important question of whether the problems associated with cost, access, or eligibility for health insurance could be deterring would-be entrants to the dairy farm industry and affecting the future of the sector.

The NASS 2010 Dairy Producer Survey found that the health insurance situation had substantially improved during the 2000s. The percentage of dairy farmers with no coverage had dropped significantly, while the percentage with coverage for all family members had increased to 85 percent. Perhaps equally importantly, the quality of coverage also seems to have improved, with many more reporting that their insurance pays at least part of the cost of preventive services. Fewer farmers now purchase individual policies from private insurers. Many more individuals are taking advantage of public coverage programs such as Wisconsin's BadgerCare Plus, which are more likely than private companies to provide comprehensive, medically appropriate coverage.

Problems do remain, and some groups of dairy farmers are still underinsured at a higher rate compared to Wisconsin residents as a whole. This article reviews results of the 2010 survey, highlights positive developments over the decade, and discusses areas where improvement is still needed.

### Health Care Coverage

The results of the 2010 NASS survey show a remarkable improvement since 2001. The percent of dairy farmers with no coverage was almost cut in half, from 20 percent to 12 percent. Dairy farmers are still more likely to be uninsured than Wisconsin residents overall, but the gap has narrowed; about 9 percent of Wisconsin residents were uninsured in 2009[10] compared to 12 percent of dairy farmers. Just over 85 percent of dairy farmers had coverage for all family members, up from 59 percent in 2001. Three percent had coverage for some members in their family but not others.

**Wisconsin Dairy Farmer Health Care Coverage by Herd Size**

| | *Herd Size (No. of Cows)* | | | | |
|---|---|---|---|---|---|
| ***Extent of Coverage*** | ***<50*** | ***50-99*** | ***100-199*** | ***200+*** | ***Full Sample*** |
| Full Coverage | 81.4 | 84.4 | 91.4 | 97.8 | 85.4 |
| Partial Coverage | 3.6 | 2.8 | 3.6 | 0.6 | 3.0 |
| No Coverage | 15.0 | 12.8 | 5.0 | 1.7 | 11.5 |

Full Coverage: All family members have health care coverage

Partial Coverage: Some members are covered, others are not

No Coverage: No family members have health care coverage

However, there are signs that lack of health insurance is still a problem for many dairy farmers. The likelihood of a farmer having health insurance decreases with herd size. About 15 percent of farmers who milk fewer than 50 cows lacked any coverage compared to just 2 percent of farmers with more than 200 cows.

Lack of health care coverage for children of farm households is a continuing problem. More children of farm families are covered now than in 2001, but as was the case then, children have lower rates of enrollment than their parents. Farm families with children were more likely to be uninsured than farmers overall. Of particular concern, one out of four farmers with children on farms with fewer than 50 cows did not have health insurance for their children. Of all dairy farmers with children,

19 percent lacked coverage for their children. In spite of program improvements made over the past decade, this may indicate a need for the state Department of Health Services, which oversees BadgerCare Plus, to focus more attention on outreach, enrollment and maintaining enrollment for vulnerable farm children.

### Sources of Coverage

The largest proportion of insured farmers, 46 percent, purchased individual policies directly from a private insurance company. This form of health coverage is likely to be more expensive (more out-of-pocket expenses and higher premiums), carry more restrictions and cover fewer services than most other kinds of coverage (such as employer-based group plans and public benefits.) About 30 percent of insured farmers received employer-based insurance as a benefit from the off-farm employment of a family member. Roughly 30 percent received insurance from a public program such as BadgerCare Plus, Medicaid or Medicare. The smallest group, fewer than 5 percent, purchased insurance from a health insurance cooperative. The data also show a lot of mixing and matching of insurance types within the same farm family.

Sources of health insurance varied somewhat by farm size. Farmers with smaller herds were more likely to obtain insurance through off-farm jobs or from a federal or state program than those with larger herds, and were less likely to purchase insurance directly from an insurance company. Smaller-scale farmers are more likely to be income-eligible for public programs and are less likely to be able to afford individual policies from insurance companies. Off-farm employment can be a good way for farm families to obtain health insurance, but the coverage may not be comprehensive or appropriate to the family's medical needs, and the family may have to contribute significantly to the monthly cost.

Some of these numbers represent significant changes from the early 2000s. PATS' 2001 survey found that 58 percent of dairy farmers with insurance purchased individual policies directly from a private insurance company, over 10 percentage points higher than what the 2010 survey showed. The percentage of farmers obtaining employer-sponsored insurance from off-farm jobs has remained mostly the same. The percentage purchasing insurance from a co-op or farm organization has dropped slightly from 6 percent to 4 percent.

There were some significant changes affecting cooperatives as sources of health insurance during the decade. The Coop Care law (Wisconsin Statutes section 185.99), passed in 2003, gave the Wisconsin Federation of Cooperatives (now Cooperative Network) the ability to form five health care cooperatives. These health care purchasing co-ops have the ability to negotiate and contract with local insurers to establish health plans for their members. The Farmers' Health Cooperative of Wisconsin (FHCW), Wisconsin's farmer-based co-op, began offering a choice of health insurance plans for farmers statewide in 2007, extending benefits to at least 200 previously uninsured farmers.[11] FHCW is now providing coverage to well over 1,000 of the state's farmers and agribusiness employees, covering over 2,600 family members. It is possible that the percentage of farmers taking advantage of the FHCW may increase as the cooperative grows in terms of both size and variety of plans, thus spreading the risk and lowering the cost of coverage.

The most significant change is the increase in the share of insured dairy farmers who receive coverage from a federal or state benefits program—up from 7 percent in 2001 to 29 percent in 2010. This is likely due to changes in program eligibility requirements over the decade. Since program changes enacted in the early 1990s, it was only disabled or over age 65 farmers who could subtract depreciation from their income when applying for Wisconsin Medicaid and related programs. That meant non-disabled children, parents and others applying for Healthy Start, Medicaid, or BadgerCare were income-tested with their full depreciation expenses included. This formula put most farmers over the Medicaid income eligibility limits, leaving them uninsured. In early 2008, however, Wisconsin implemented BadgerCare Plus, which merged all family Medicaid programs. The expansion of BadgerCare Plus promised access to coverage for 98 percent of Wisconsin's children under age 19. In addition to adding a year of coverage for children (ending coverage at age 19 instead of age 18) the program also changed the household income calculation, making it easier for self-employed and farm families to meet the financial eligibility criteria.

BadgerCare Plus permits a unique two-part calculation to test a family's income eligibility. First, the farm family's income is tested against the programs income limits with the depreciation and amortization included. Families that meet eligibility (fall under 200 percent of the federal Poverty Limit) are approved for coverage. Families that fall above 200 percent of the Federal Poverty Limit are income-tested a second time, with any depreciation and/or amortization amounts subtracted to obtain an adjusted income amount. Families that still fall above 200 percent of the Federal Poverty Limit can obtain BadgerCare Plus coverage for their children only, with a monthly premium amount. No parents with household income levels over 200 percent are eligible for benefits unless pregnant. Additionally, the income limit for preg-

nant women also increased with the BadgerCare expansion in February 2008, providing greater access to coverage for pregnant women, especially those who have self-employment or farm income and depreciation expenses.

The increase in dairy farmers with coverage from public programs and the overall decrease in uninsured dairy farmers indicate that this legislative and regulatory change has been successful in making enrollment in public programs more accessible to the uninsured.

## Services Covered

We also see an improvement since 2001 in the quality of farmers' health insurance coverage. In 2001, about 75 percent of farmers with some health insurance had no coverage for preventive care (including regular check-ups, yearly exams, shots and screens for certain diseases.) The 2010 survey found that only 14 percent of farmers with health insurance lacked any preventive care coverage, while about 20 percent had complete coverage for preventive care, and 66 percent had coverage for part of the cost. This is an immense improvement; however there is clearly still a need for more comprehensive health coverage that allows farmers to more easily access preventive care. Over 90 percent of dairy farmers with insurance reported that all or part of the cost for hospital stays and for care at a doctor's office due to sickness or injury was covered. But 18 percent of farmers did not have prescription drug coverage.

Farm size seems to have a limited effect on the amount of cost covered for most services. A slightly higher percentage of farmers with herds under 50 cows reported that all of the cost was covered, perhaps because farmers in this group were more likely to obtain coverage from off-farm jobs or from government programs rather than purchasing individual policies from private companies. Individual policies are likely to cost more and to provide more limited coverage. Those insured by individual policies can also expect more expensive co-payments for prescription drugs. State and federal benefits programs typically offer prescription co-payments ranging from $0.50-$3.00 and have extensive formularies of name brand and off-brand drugs. Thus, although a higher percentage of farmers with small herds are uninsured, those who do have coverage may in fact have more complete coverage than other dairy farmers.

**Proportion of the Cost of Services Covered**

| *Type of Medical Service* | *All* | *Some* | *None* |
|---|---|---|---|
| Regular check-ups and other preventive services | 20.0 | 66.5 | 13.5 |
| Health care at a doctor's office or clinic when sick or injured (Ambulatory or Out-Patient) | 16.0 | 75.4 | 8.6 |
| Overnight hospital stays (In-Patient Hospitalization) | 16.7 | 77.4 | 5.9 |
| Prescription drugs | 7.4 | 75.0 | 17.5 |

## Conclusion

The NASS 2010 Dairy Producer Survey paints a much brighter picture of health care coverage for dairy farm families than that offered by the PATS 2001 survey. The percentage of dairy farm families with no coverage has fallen significantly, and most dairy farmers now have individual policies that provide coverage for at least some preventive care. While it is still most common for farmers to purchase policies from private insurers, who often offer more expensive and limited coverage, many more farmers now are able to access BadgerCare Plus. It remains to be seen if the new Farmers' Health Cooperative of Wisconsin will also serve more dairy farmers in the future.

Challenges remain for dairy farmers. The rate of uninsured dairy farmers is still higher than the average rate for Wisconsin residents, which is itself higher than before the recent recession. And farmers with smaller operations are more likely to be uninsured than dairy farmers as a whole, as are farmers with children. Almost 20 percent of children of dairy farm families still lack insurance.

Dairy farming remains a risky occupation, and the risks are still compounded by the difficulties farmers face in obtaining affordable, quality health insurance for themselves and their families.

## Endnotes

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[2] Related documents are available online at the PATS website **www.pats.wisc.edu**.

[3] See PATS Briefings 1-5, 2009 for more on the expanded role of hired, immigrant labor on Wisconsin dairy farms.

[4]Audra Hubbell is an Agricultural Statistician with the Wisconsin Field Office of the National Agricultural Statistics Service, U.S. Department of Agriculture.

[5] For background information on federal marketing orders and other federal dairy programs, see Dairy Policy Analysis Alliance (University of Missouri Food and Agriculture Policy Research Institute and University of Wisconsin-Madison). (2010). Dairy Policy Issues for the 2010 Farm Bill. Available at **http://future.aae.wisc.edu/briefing_12.html**

[6] USDA Agricultural Marketing Service. (2008). Federal Milk Marketing Order Areas. Retrieved from http://www.ams.usda.gov/AMSv1.0/ams.fetchTemplateData.do?template=TemplateS&navID=MapFederalMilkMarketingOrdersDairyLandingPage&rightNav1=MapFederalMilkMarketingOrdersDairyLandingPage&topNav=&leftNav=CommodityAreas&page=FederalMilkMarketingOrdersMap

[7] Buttel, F. H., Barham, B. L., & McNichol, J. H. (1995). Wisconsin farmers' preferences for federal dairy policy: Results from the Wisconsin dairy farmer poll. Agricultural Technology and Family Farm Institute (Research Paper #11). Available at **http://www.pats.wisc.edu/pubs/84**

[8] Barham, B. L., & Jackson-Smith, D. B. (1995). Property tax reform and the Wisconsin farm sector. Agricultural Technology and Family Farm Institute (Wisconsin Family Farm Facts #2). Available at **http://www.pats.wisc.edu/pubs/26**

[9] Erin McBride is a Lecturer in the Department of Consumer Sciences, School of Human Ecology, UW-Madison.

[10] Wisconsin Department of Health Services. (2010). Wisconsin Health Insurance Coverage. Retrieved from **http://www.dhs.wisconsin.gov/stats/pdf/09healthinsurance.pdf**

[11] Sundaram-Stukel, R., & Deller, S. (2009). Farmer health insurance cooperatives: An innovative solution for other Americans? Choices 24(4). Retrieved from **http://www.choicesmagazine.org/magazine/article.php?article=101**