

STATUS OF WISCONSIN AGRICULTURE, 2001

Current Wisconsin Farm Financial Conditions

Situation and Outlook for Farm Products and Inputs

Special Articles

- *Outlook for the National Economy and Agricultural Policies*
- *Smart Growth and Wisconsin Agriculture*
- *The Wisconsin Agricultural Economy: A Broader Perspective*

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College of Agricultural and Life Sciences
University of Wisconsin-Madison

Cooperative Extension
University of Wisconsin-Extension

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An Annual Report by:

Department of Agricultural and Applied Economics
College of Agricultural and Life Sciences
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and

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PREFACE

The Department of Agricultural Economics (currently the Department of Agricultural and Applied Economics) initiated an annual outlook report for Wisconsin agriculture in 1987. Budget and staff constraints forced discontinuation of this series following the 1997 *Status of Wisconsin Agriculture*. The department is pleased to resume publication of *Status* with this 2001 edition.

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 2001. Part III contains three special articles dealing with longer-term issues facing Wisconsin agriculture: potential changes in federal price and income support programs as related to macroeconomic conditions; implications for agriculture of the state's new "smart growth" development strategy, and the declining contribution of agriculture to the overall Wisconsin economy.

Additional copies of this report may be purchased for \$5.00 each, including postage. Send requests to Ms. Linda Davis, Department of Agricultural and Applied Economics, UW-Madison, 427 Lorch Street, Madison, WI 53706. Copies may also be downloaded free from the Internet in either Adobe Acrobat® or MS-Word® format at <http://www.aae.wisc.edu/www/pub/>

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

Acknowledgements

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SUMMARY

Put in the most direct terms, 2000 was a bad year for Wisconsin agriculture. Dairy farmers, who contribute more than half of Wisconsin's total farm cash receipts, experienced the lowest prices in more than 20 years. The all-milk price for the year was more than \$2 per hundredweight under 1999 and almost \$4 less than 1998. Wisconsin milk checks in 2000 were a half billion dollars lighter than in 1999, causing major belt-tightening in all cases and negative cash flows in many. Changes in federal milk marketing orders that took place on January 1, 2000, exacerbated the price situation by partially insulating some regions of the country from lower prices and thus impeding necessary supply adjustments.

The new year will bring some improvement in milk prices, as supply moves into better balance with demand later in the year. The 2001 all-milk price in Wisconsin is expected to be about \$1 per hundredweight higher than 2000.

The price and income situation for other Wisconsin commodities in 2000 was mixed. Cranberry growers fared much worse than dairy farmers. Season average prices for the crop year will likely end up around \$15 per barrel (100 pounds), yielding Wisconsin growers about \$40 million compared to \$160 million just three years ago. Oppressive cranberry inventories should be reduced in 2001 as low prices stimulate consumption and marketing order restrictions cut supply.

Corn and soybean growers will likely see average prices for the 2000 crop about the same as last year, around \$1.80 per bushel for corn and \$4.65 for beans. These prices are 30 percent to 35 percent below those experienced during 1995-97. But low prices for corn and beans are being offset by large government direct payments in the form of transition payments, loan deficiency payments, and market loss assistance. For all U.S. growers in FY2000, USDA estimates these payments will total \$9.7 billion for corn and \$2.7 billion for soybeans, about \$1 per bushel. For the 2001 crop year, high fertilizer costs, especially nitrogen, will favor soybeans over corn in much of the country. This will likely strengthen market prices for corn and weaken the bean market. USDA is forecasting a substantial reduction in direct payments to crop producers, but Congress is renown for upsetting USDA farm price and income support projections.

Livestock producers fared better in 2000 than in recent years. Choice steer prices averaged almost \$4 per hundredweight over 1999, and barrows and gilts traded more than \$10 per hundredweight higher. Poultry and egg prices were mostly on par with 1999. For 2001, cattle prices will likely be \$3-\$8 higher, hog prices will slip \$1-\$4, and poultry products are all expected to show slightly lower prices.

The overall financial condition of Wisconsin farms is strong but deteriorating. Fueled by a buoyant state economy, farmland values have strengthened. The Federal Reserve Bank of Chicago recently reported an 8 percent increase in the value of “good” farmland in Wisconsin between October 1999 and October 2000. This has buttressed farm balance sheets, helping to maintain reasonably strong equity positions despite depressed farm income. But negative cash flows are likely eroding equity faster than higher land values are building it.

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The three special articles in this year’s report address diverse long-term issues affecting Wisconsin agriculture. William Dobson reviews the macroeconomic environment and speculates on how the end of the “Goldilocks” U.S. economy” will affect the new farm bill that will be debated in 2001. Douglas Jackson-Smith examines Wisconsin’s new Smart Growth Law within the context of land use planning in rural communities. Steven Deller and Bruce Jones look at the relative contribution of farming and food processing to the Wisconsin economy, documenting that farming is not sharing in the economic boom enjoyed by other sectors

I. Financial Situation in the Wisconsin Farm Economy

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The question most asked about the Wisconsin farm economy is, "Are Wisconsin farmers facing a repeat of the mid-1980's financial crisis?" Honest answers to this important question are, "It's not clear," and "It's too soon to say."

There are disturbing signs of an impending crisis. Wisconsin farmers rely on milk sales for more than half of cash receipts. Milk prices crashed in late 1999, and have yet to recover. Many of the state's dairy farmers experienced negative cash flows throughout 2000, and nearly all dairy farmers have tightened the belt several notches, delaying major purchases and shelving expansion plans. Anecdotal evidence indicates accounts receivable in the dairy farm supply sector are ballooning.

The income situation for other commodities is mixed but not especially encouraging overall. Hog prices have recovered from devastating levels in 1998 and 1999 and cattle prices are showing strength relative to the mid-1990's. Corn and soybean prices remain very low by historical standards, but government payments have offset some market losses. Cranberry growers have seen two years of prices well below production costs.

At the same time, the balance sheet for Wisconsin farms is relatively strong in comparison to the mid 1980's. Land values are not declining, providing an equity cushion that did not exist 15 years ago.

Debt-asset ratios are much more favorable, at least at the moment.

It may be too soon to say there is a financial crisis in Wisconsin agriculture. However, that is of little solace to the farmer with his back against the wall or the feed dealer who has to tell that farmer that his terms of credit have become cash and carry. Clearly, more and more farmers in Wisconsin are experiencing financial stress, and the numbers could expand rapidly if milk prices are slow to recover.

Assets and Debts

Figure 1 shows that between 1960 and 1998 the value of farm assets rose from roughly \$5 billion to nearly \$27 billion while farm debts grew from approximately \$500 million to roughly \$5 billion. The net result of these increases in farm asset values and debts was a net worth or wealth gain of roughly \$22 billion for Wisconsin farmers. These gains in net worth, which are largely the result of real estate appreciation, have kept the balance sheet for the Wisconsin farming sector strong even though farm incomes have been depressed.

As of 1998 Wisconsin farms had only 22 cents of debt per \$1 of farm assets. This debt-to-asset ratio for the farm sector is well below the .70 value that lenders typically set as the upper limit for farm borrowers. This low debt-to-asset ratio for the farm sector is

evidence that the balance sheet position for the farm sector is relatively strong.

Income and Expenses

The farm income measures presented in Figure 2 show that the total incomes of Wisconsin farmers have been rising while net incomes have been either holding steady or falling. This decline in net farm incomes that has been occurring over the last decade is why we have continued to see a steady decline in the number farms in the state.

The fact that net farm incomes have not risen along with total farm incomes is evidence that farmers' profit margins have been eroded over time. This decline in profit margins, which is typically identified as one of the characteristics of highly competitive markets, is evidence that farmers are being squeezed by low commodity prices and high production costs.

Figure 2 shows that in the last half of the 1980s net farm incomes rose before they started to descend in the 1990s. This increase in net farm incomes in the late 1980s was largely the result of federal farm programs that paid substantial sums of money to Wisconsin farmers in the form of price supports and other subsidies. Without these government payments net farm incomes would not have risen in the 1980s.

Figure 3 illustrates how important government payments have been to Wisconsin farmers the last couple of decades. During the 1985 to 1989 period, government payments represented 10 to 17 percent of farmers' total income in any given year. Throughout most of the 1990s, government payments comprised less than 10 percent of farmers' total income. This cut back in government payments for

farmers explains why farm net incomes have been trending downward over the last decade or so.

Government payments as a percent of total farm income in 1999 is now back up to the level it was in the late 1980s. This occurred because farmer again received payments from the government that were intended to offset the negative effects low commodity prices were having on farmers' net incomes. Similar levels of government payments, primarily in the form of emergency payments were made to farmers in 2000. It is uncertain at this time if farmers will continue to receive income supports from the government in 2001 and future years.

Relative Debt Positions of Wisconsin Farmers

Two financial measures are presented in Figure 4 that reflect the relative debt positions of Wisconsin farmers. One measure is the net-income-to-debt ratio, which reflects the amount of net income Wisconsin farmers earn per dollar of debt. The other measure is the ratio of assets-to-debts, which indicates the value of assets farmers have per dollar of debt. High values for these two ratios indicate the farm economy is strong while low values are signs that the farm economies financial position is relatively weak.

Figure 4 shows that the farm economy's financial strength has declined over the last four decades. The farm sector's asset-to-debt position has declined at a modest rate indicating that farmers are borrowing more money relative to the value of their assets. More alarming is the dramatic decline in the farm sectors net-income-to-debt positions. Over time farmers' use of credit has increased dramatically relative to net farm

income. This latter trend is a cause for some concern because it indicates that farmers' ability to service their debt commitments is declining. This downtrend in the net income to debt ratio cannot continue indefinitely. Lenders will not loan increased amounts of money to farmers if farm incomes do not rise to levels that allow farmers to retire debts to in an orderly and timely manner.

If lenders start clamping down on new loans to farm borrowers, farmers may have to start liquidating land and other assets to repay their existing debts or get the money to fund their day to day operations. This liquidation of farm assets will solve farmers' short run capital problems but it will further erode the state's farm economy, and force even more farmers to leave the industry.

Figure 1: Wisconsin Farm Assets and Debts

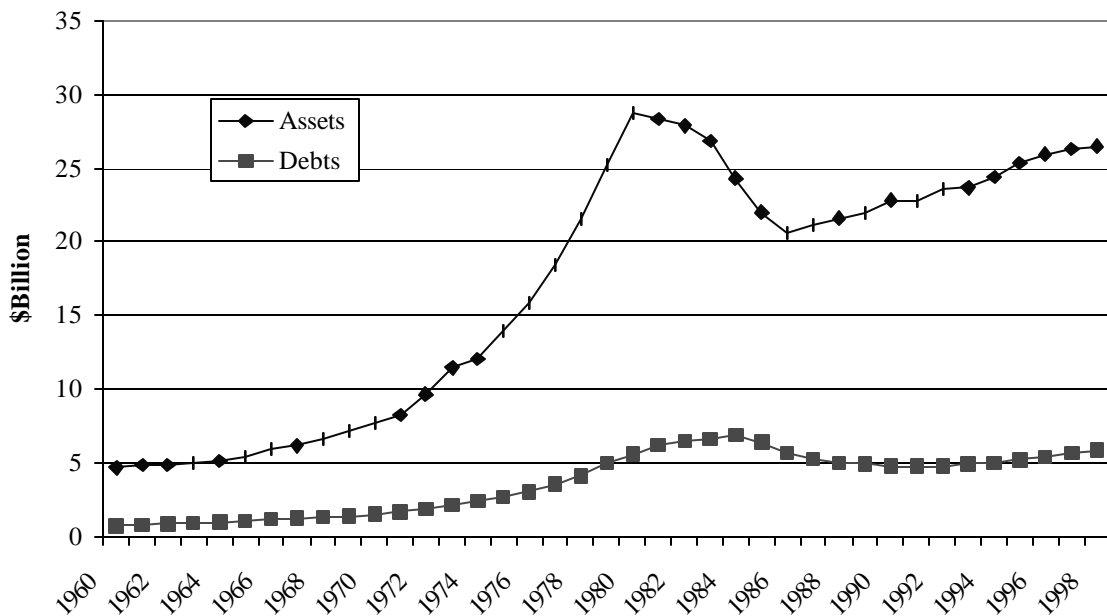


Figure 2: Wisconsin Farm Income

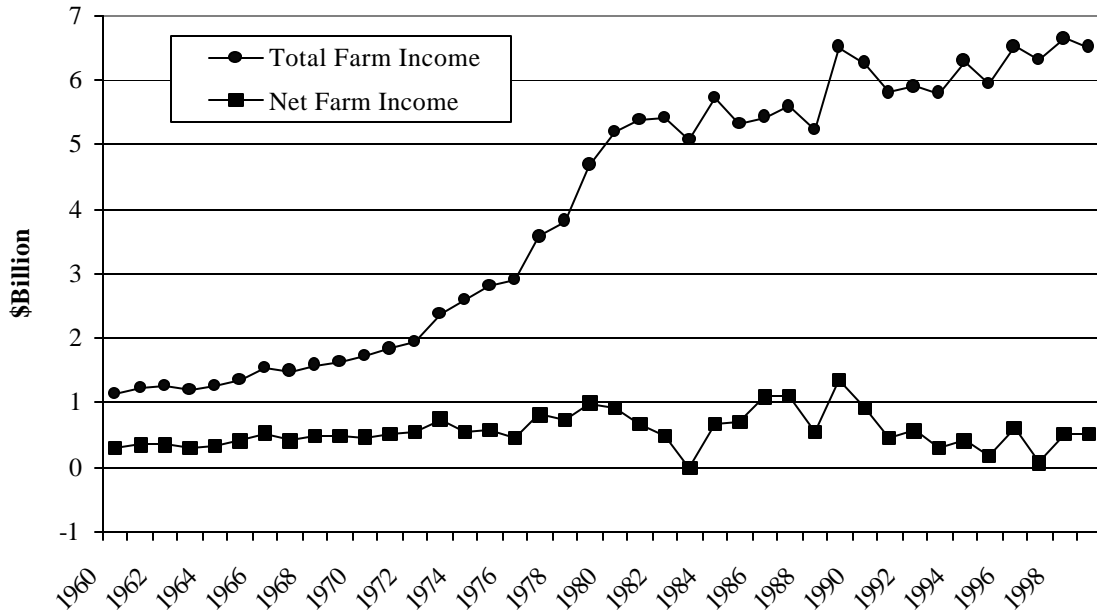


Figure 3: Government Payments as a Percent of U.S. Total Farm Income

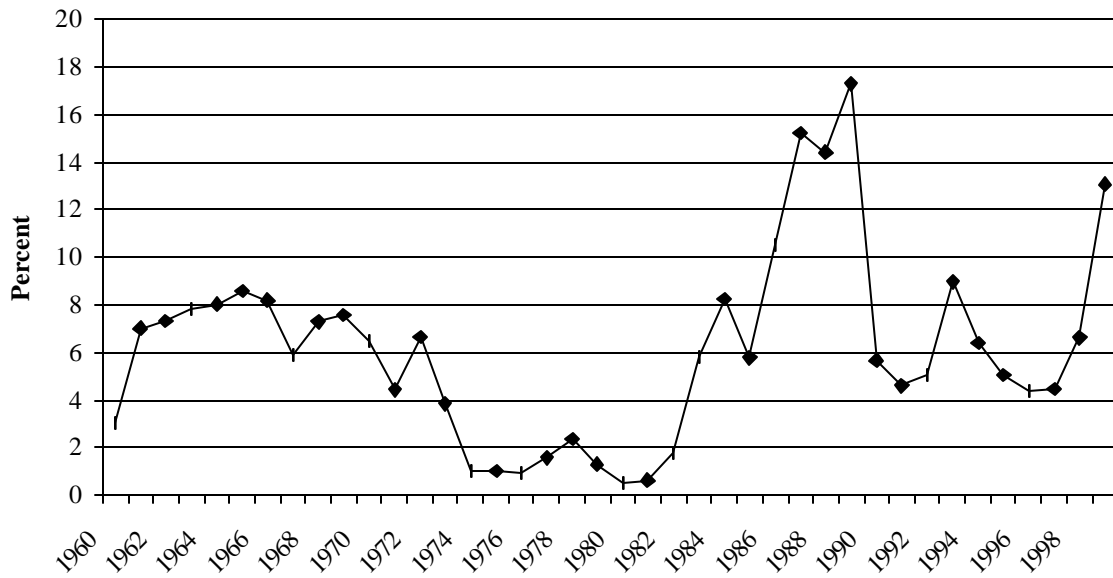
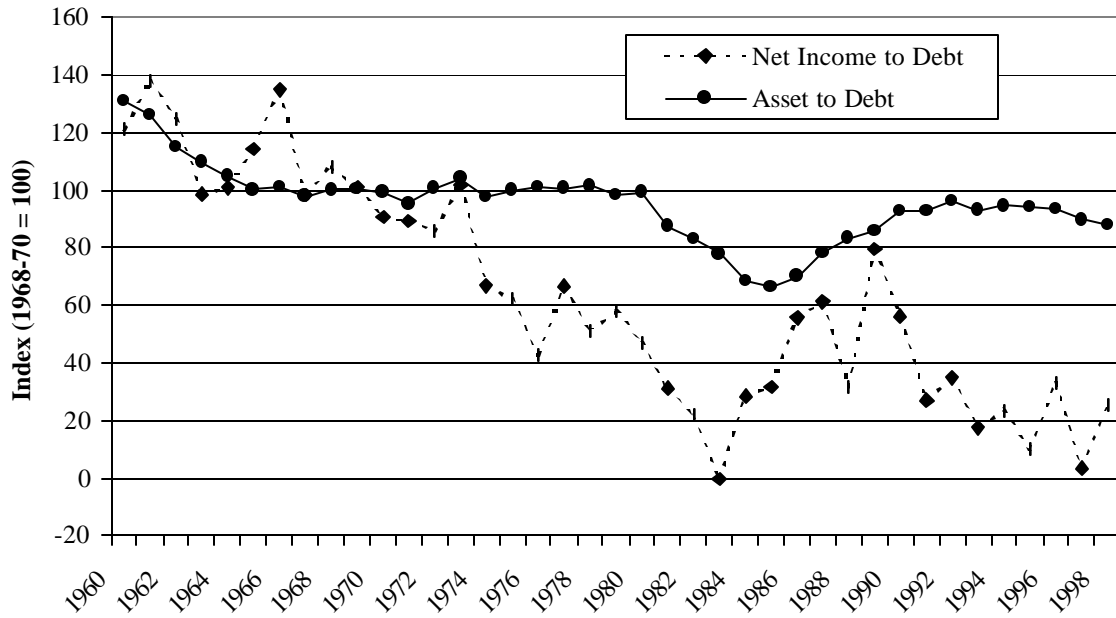


Figure 4: Debt Ratios for Wisconsin Farms



II. Current Outlook for Wisconsin Agricultural Commodities and Inputs

In this section, marketing and farm management specialists in the Department of Agricultural and Applied Economics provide their insights on economic conditions for Wisconsin agriculture by commodity sub-sector. Interested readers are encouraged to contact the authors for more current or more detailed information

Dairy Situation and Outlook

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Dairy farmers experienced record high milk prices in 1998 and relatively strong milk prices for 1999. In contrast, 2000 saw very depressed prices throughout the entire year (Table 1). For the first

six months, the Class III price averaged below \$10 per hundredweight and only slightly above \$10 for the second six months. The average Class III price for 2000 is estimated at \$9.73 per hundredweight, \$2.70 lower than the comparable Basic Formula Price (BFP) in 1999 and \$4.47 lower than the record BFP set in 1998. The average all-milk

Table 1: BFP/Class III & Average All-milk Prices, Wisconsin and U.S., 1998- 2000 and Forecast for 2001 (Dollars Per Hundredweight) *

<i>Month</i>	<i>1998 BFP</i>	<i>1999 BFP</i>	<i>2000 Class III</i>	<i>2001 Class III</i>
Jan	13.25	16.27	10.05	9.50
Feb	13.32	10.27	9.54	9.70
Mar	12.81	11.62	9.54	9.60
Apr	12.01	11.81	9.41	9.70
May	10.88	11.26	9.37	9.95
Jun	13.10	11.42	9.46	10.25
Jul	14.77	13.59	10.66	10.90
Aug	14.99	15.79	10.13	11.30
Sep	15.10	16.26	10.76	11.85
Oct	16.04	11.49	10.02	11.90
Nov	16.84	9.79	8.57	11.50
Dec	17.34	9.63	9.30**	11.30
Average BFP/Class III	14.20	12.43	9.73	10.62
Average WI All-milk Price	15.50	13.86	11.58	12.40
Average U.S. All-milk Price	15.50	14.36	12.30	13.10

* The BFP was replaced by the Class III price in 2000

** Estimated

price to Wisconsin dairy farmers is estimated to be \$11.58 per hundredweight for 2000, compared to \$13.86 for 1999 and a record \$15.50 in 1998.

In 2000, milk prices fell to levels not seen since 1978. Prices for year 2001 are forecast to recover slowly, with an average Class III price of \$10.62 per hundredweight and an average all-milk price of \$12.40 for Wisconsin. While these prices are still low, this is a more optimistic forecast than what others have predicted and higher than current Class III futures market prices.

Why did milk prices collapse in the last quarter of 1999 and stay down through 2000 and into 2001? Record high milk prices in 1998 and continued strong prices in 1999 along with relatively cheap feed encouraged dairy expansions, particularly in western states. Milk cow numbers normally decline each year, but this did not happen in 1999 or 2000 (Figure 5). Cow numbers increased only slightly in 1999, from an average of 9.15 million head to 9.16 million head. The increase was 0.7 percent in 2000, to an average of 9.22 million head¹. Cow numbers increased each month during 2000.

This was not the case for Wisconsin and Minnesota. Cow numbers declined about 0.7 percent in Wisconsin and 2.5 percent in Minnesota for a total loss of about 25,000 cows. But due to expansions in the West, California, Washington, Idaho, Arizona and New Mexico had a

combined total of about 128,000 more cows than a year ago.

With low milk prices, we expect dairy expansions to slow and milk cow numbers not to increase in 2001. The average number of cows for 2001 is forecast to stay the same at 9.22 million head.

Cheap feed and favorable weather during most of 1999 and 2000 resulted in excellent milk production per cow (Figure 6). While milk prices have been low, the milk-feed-price ratio² remained relatively strong (Figure 7). A ratio of 3.0 or above favors herd expansion. U.S. milk per cow averaged 17,771 for 1999, an increase of 3.4 percent over 1998, and milk per cow increased to 18,286 for 2000, another 2.9 percent increase. Increases in milk per cow may slow some in 2001, but an increase of at least 2.1 percent to 18,670 pounds appears reasonable.

Total milk production for 2000 increased 3.6 percent to 168.6 billion pounds (Figure 8). With no change in milk cow numbers and an increase in milk per cow of 2.1 percent, we can expect about 172.1 billion pounds of milk for 2001.

With increases in milk production, the production of dairy products is also higher. From January through October 2000, as compared to a year earlier, the production of cheese was up 5.3 percent, butter production up 2.9 percent and nonfat dry milk production up 8.4 percent.

¹ This outlook was written prior to final 2000 production numbers released by USDA. Final numbers are likely to be different from what are reported here.

² The number pounds of 16% mixed dairy feed equal in value to one pound of whole milk. The feed includes alfalfa hay, corn and soybeans.

A strong economy has kept commercial disappearance strong. Commercial disappearance increased 3.1 percent to 164.9 billion pounds in 1999, and for 2000 commercial disappearance may total near 169.8 billion pounds, an increase of more than 2.5 percent. Compared to a year ago, commercial disappearance for the period of January through September was up 2.0 percent for American cheese, 7.4 percent for other types of cheese, unchanged for butter, down 5.2 percent for nonfat dry milk, down 0.7 percent for fluid (beverage) milk and up 2.8 percent for all dairy products on a milkfat equivalent basis. Commercial disappearance is expected to grow another 2.5 percent during 2001 and reach a total of 174 billion pounds.

While commercial disappearance has been strong, the increase in milk and dairy product production was greater. The result was a build-up in dairy stocks. Total cheese stocks as of October 30th, were 9 percent higher than a year ago (Figure 9), and nonfat dry milk stocks were more than double. Butter stocks were 10 percent lower, but had been higher earlier in the year (Figure 10). These stocks are well above the 5-year average. Not until stocks are reduced, particularly stocks of cheese, will farm level milk prices improve. With the increase in milk production slowing during 2001 and continued growth in commercial disappearance, stocks should decline slowly and add some strength to 2001 milk prices.

With the depressed milk prices, CCC removals under the dairy price support program are estimated to total about 8.0 billion pounds (skim milk equivalent) in 2000, up from the 6.5 billion pounds in

1999 and 4.0 billion pounds in 1998. This increase was mostly due to major increases in CCC purchases of nonfat dry milk and some cheese purchases for the last quarter of 2000. CCC purchases probably will decline only slightly in 2001 since nonfat dry milk prices will remain at support levels.

Dairy imports and exports have little impact on milk prices since on a total solids milk equivalent basis imports closely match exports. The concern with imports is the growing and unrestricted imports of ultra milk proteins. These are likely replacing some of the use of domestic nonfat dry milk and adding to CCC purchases of nonfat dry milk under the support program.

Table 2 summarizes changes in the dairy supply and demand situation³: Milk production estimates shown for 2001 can easily change. Milk cow numbers could decline rather than remain unchanged. Weather can significantly impact milk per cow. But with the information now available these estimates are reasonable. If milk production does turn out lower, then the forecasted milk prices for the second half of 2001 will be higher. It will be important for dairy producers to watch market developments. If market prices show more strength, producers may wish to protect better prices with price risk management tools, whether it be cash forward contracts with a milk buyer, hedging on the futures market, buying a put option, or some combination.

No major changes in federal dairy policy are expected before 2002, when a new farm bill will be written. But some

³ Data for this table and in the report are drawn from USDA, NASS reports.

Table 2: Milk Supply and Demand Summary

<i>Item</i>	<i>1998</i>	<i>1999</i>	<i>2000 Est</i>	<i>2001 Est</i>
Milk Cows –000-	9,154	9,156	9,220	9220
Milk/cow	17,189	17,771	18,286	18,670
Total Milk-B Lbs.	157.3	162.7	168.6	172.1
Marketings- B Lbs.	156.1	161.3	167.2	170.7
Beg. Stocks- B Lbs	4.9	5.3	6.1	7.2
Imports- B Lbs.	4.6	4.8	4.5	4.5
Total Supply- B Lbs.	165.6	171.4	177.8	182.4
End Stocks- B Lbs.	5.3	6.1	7.2	6.4
Net removals- B Lbs.	0.4 (4.0 skim)	0.3 (6.5 skim)	0.8 (8.0 skim)	2.0 (7.5 skim)
Commercial	159.9	164.9	169.8	174.0
Disappearance	(156.0)	(157.8)	(161.7)	(166.5)

intervening changes could affect milk prices in 2001.

The federal order reform that was implemented January 1, 2000, had a significant impact on milk prices and milk production in 2000. The Basic Formula Price (BFP) as a mover of Class I milk prices was replaced by the higher of an advanced Class IV skim milk price (milk used for nonfat dry milk) or advanced Class III skim milk price (milk used for cheese). These class skim milk prices are derived from component pricing formulas. During most of 2000, cheese prices were depressed because of surplus milk production. Nonfat dry milk prices, supported at a relatively high level, were close to CCC purchase prices. But butter prices were well above support, which caused the

formulas to yield higher advanced Class IV skim milk prices than advanced Class III skim milk prices. On average for year, the Class IV skim milk value was \$1.80 per hundredweight higher than the Class III value, with the difference as great as \$3.61 for December.

This increased the effective Class I differential as measured by the difference between the Class I and Class III prices. The Class I market was isolated from the low cheese prices caused by surplus milk production. Dairy producers in markets where milk is used predominately for cheese – in particular Wisconsin and Minnesota received low cheese milk prices. Producers in Class I (beverage) markets were partially insulated from the surplus milk situation. As can be seen in Table

1, the decline in the U.S all-milk price in 2000 from 1999 was not as great as the decline in the Class III price or the decline in the Wisconsin average all-milk price. This has delayed the reduction in milk production needed to improve milk prices.

U.S. Secretary of Agriculture Glickman was instructed by Congress to review the Class IV and Class III formulas and implement any changes by January 1, 2001. On December 1st, the Secretary did just that with a tentative final decision to amend the formulas. These changes were approved by a producer referendum in December and implemented on January 1, 2000. The industry has until February 5 to comment on the changes. The Secretary will subsequently issue a final decision that producers must also approve via referendum.

The changes in the tentative final decision do not address the “higher of” problem discussed above. In fact, the decision virtually ensures that the advanced Class IV 3.5 percent butterfat milk price will be the mover of Class I, thus effectively de-coupling Class I prices from cheese prices.

For the past two years the only dairy product that has been in surplus has been nonfat dry milk. Nonfat dry milk has

been near the support price of \$1.01 per pound non-fortified or \$1.02 per pound fortified (Figure 11). Butter prices have been well above the \$0.668 per pound support price. Except for the last quarter of 2000, 40-pound cheddar cheese blocks have been above the \$1.122 per pound support price. The cost of the dairy price support program has increased because of growing purchases of surplus nonfat dry milk. Since the beginning of the fiscal year, October 1, 2000, through early December 2000, CCC purchases of nonfat dry milk were 5 times greater than for the same period a year earlier.

The U.S Secretary of Agriculture has the authority and the responsibility to minimize the cost of the dairy price support program by “tilting” the CCC purchase support price away from nonfat dry milk (lower price) to butter (higher price). Lower prices for nonfat dry milk would reduce the advanced Class IV milk price under the current formulas and the formulas included in the tentative final decision. Resulting lower Class I milk prices would encourage a greater slow-down in milk production and a quicker strengthening of milk prices nationally. But, as of now, dairy producers need to make decisions based on milk prices like those forecasted above.

Figure 5: Milk Cow Numbers, 20 States, 1999-2000

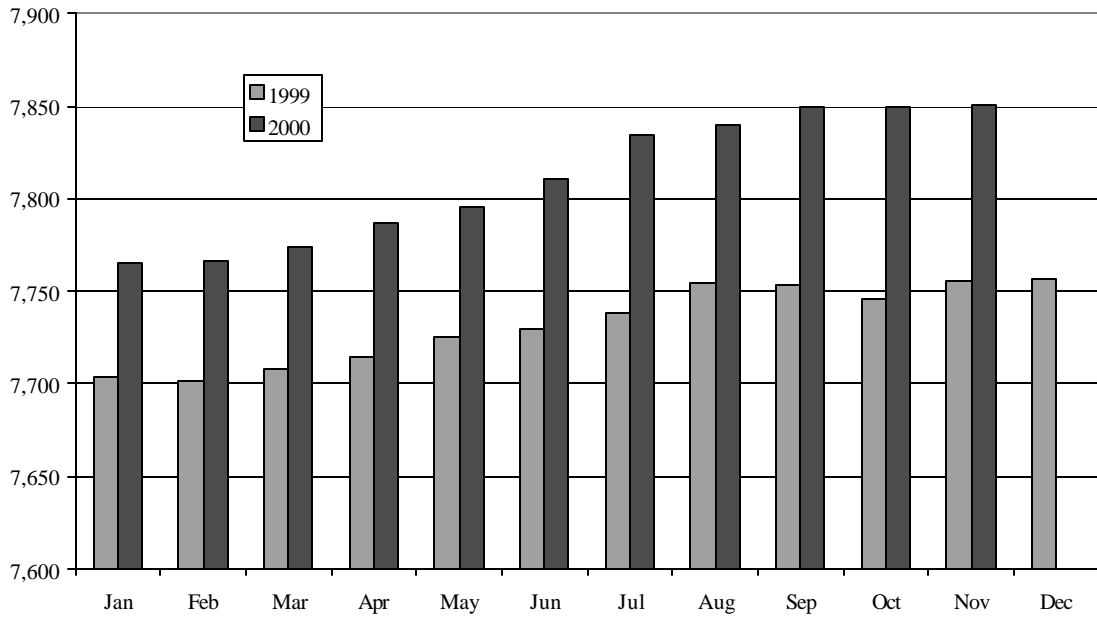


Figure 6: Milk per Cow, 20 States, 1999-2000

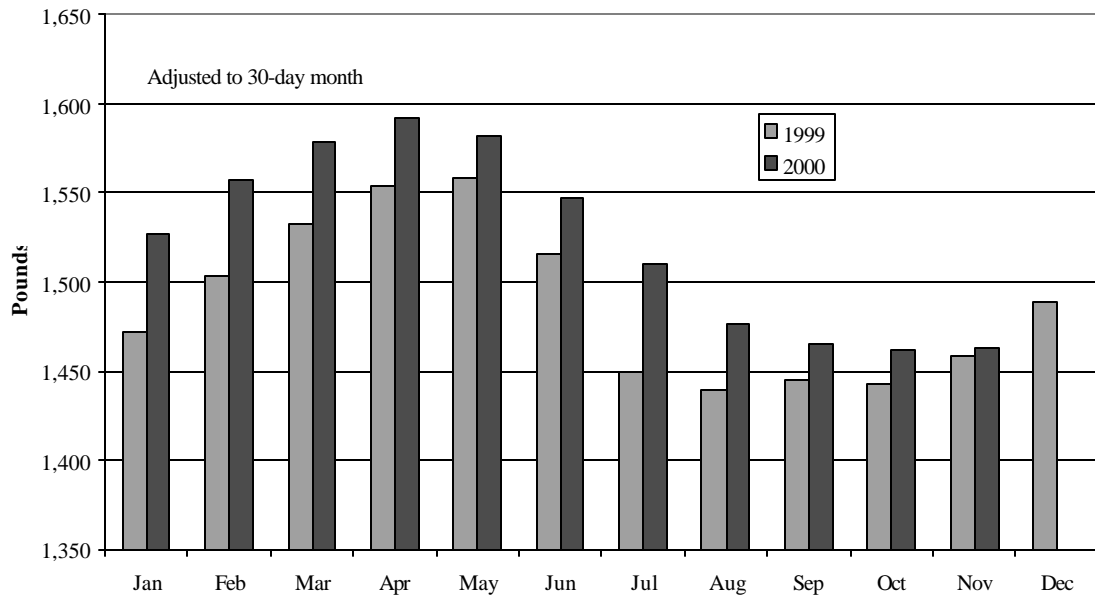


Figure 7: Milk-Feed Price Ratio, 1999-2000

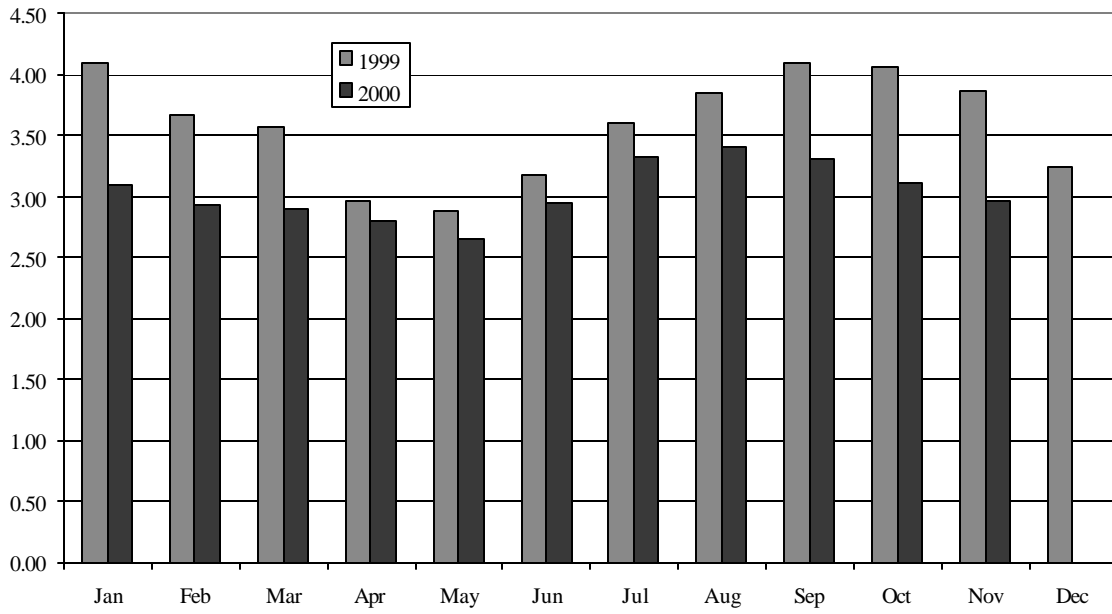


Figure 8: Total U.S. Milk Production, 1999-2000

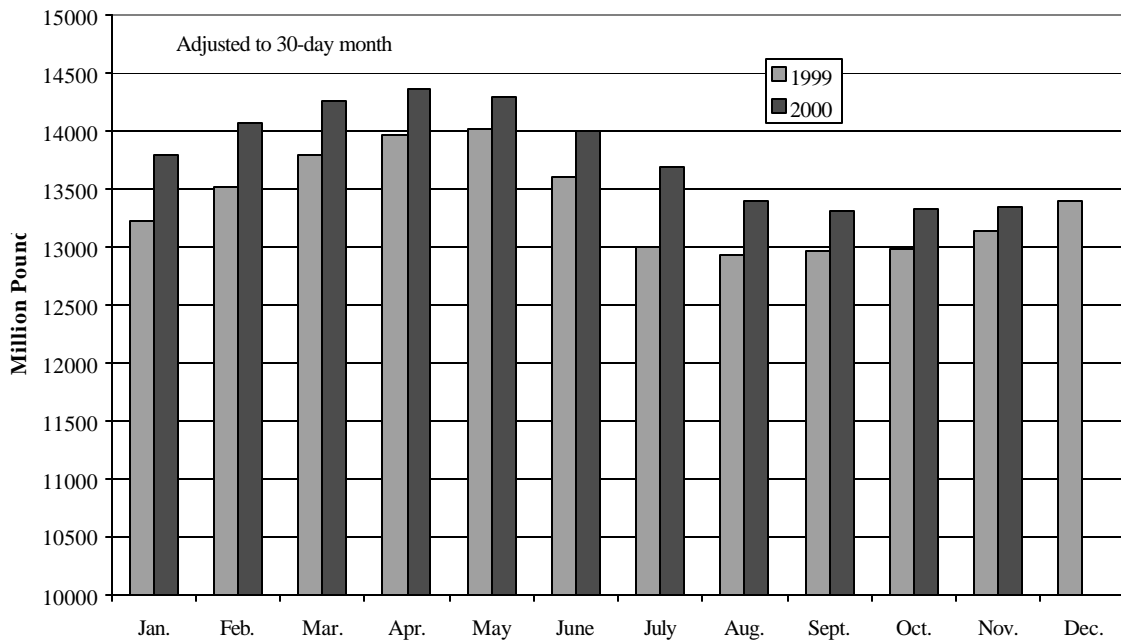


Figure 9: End-of-Month American Cheese Stocks, 1999-2000

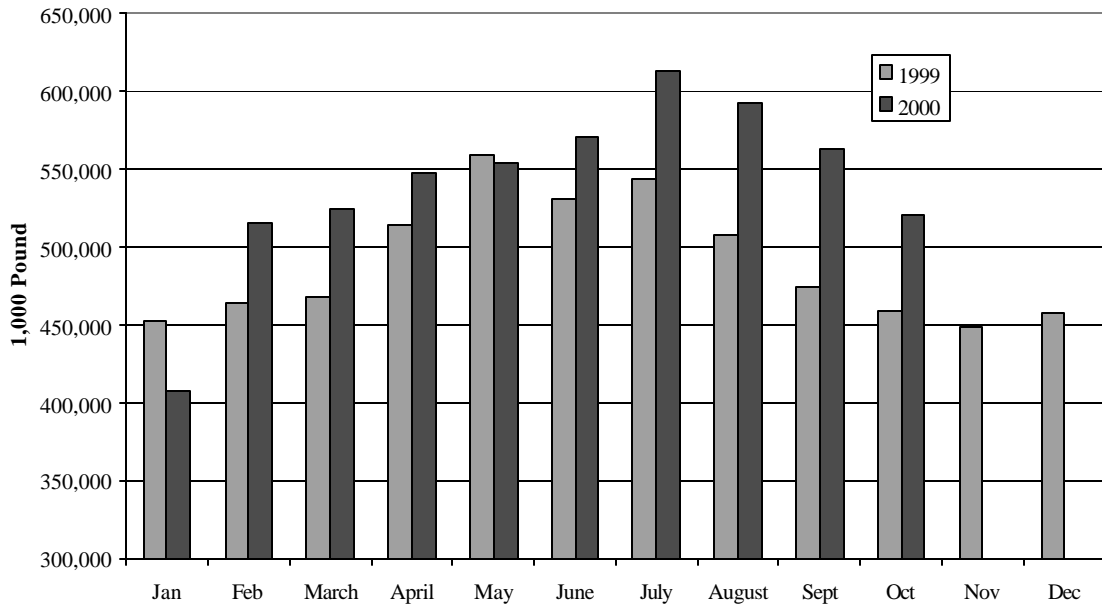
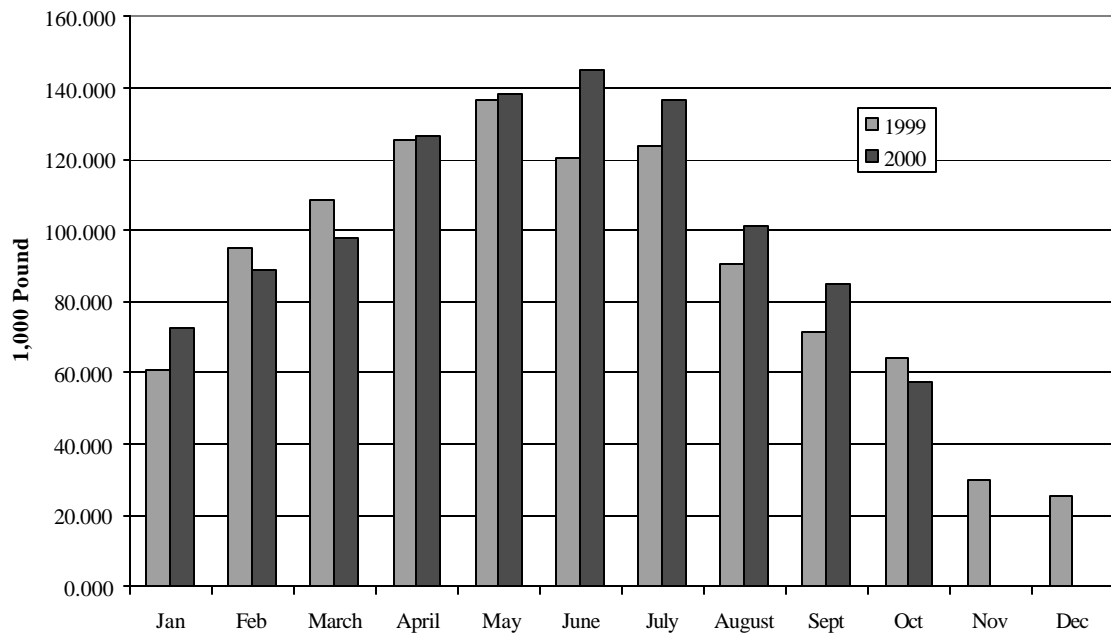


Figure 10: End-of-Month Butter Stocks, 1999-2000



Record U.S. corn and soybean crops in 2000 provide a favorable base for continued expansion of meat production during the next year or two. However, strong demand for grain and meal may cause feed prices to rise from the very low levels of the past two or three years. Other developments, such as food safety concerns, genetically modified organisms in crops, mad cow disease in parts of Europe and the potential elimination of bone meal in animal feed may become very important considerations in the financial results of the livestock and poultry industries in 2001.

Meat Production Continues to Set New Record Highs

Meat production in the U.S. increased during 2000 for the 18th consecutive year. Meat production increased about 1 percent in 2000, less than the average 2.7 percent annual increases during the previous 17 years. Beef, broilers and turkey recorded modest production gains in 2000 while pork output declined about 2 percent.

During the last 18 years, total meat output has risen about 58 percent. Broiler output rose 151 percent from 1982 to 2000 while turkey production climbed 120 percent, pork production increased 34 percent and beef output rose 20 percent. The increase in broiler production accounted for nearly 60 percent of the total gain in meat production and the increase in combined broiler and turkey output accounted for nearly 70 percent of the total increase from 1982 to 2000.

Improvements in management, genetics, housing and nutrition in the production

of poultry and livestock on farms and ranches have contributed to these production increases. Favorable weather during the last several years has also helped. Large corn and soybean crops, moderate summers and mild winters have all been favorable for producing livestock and poultry. Stronger consumer demand for poultry, and in particular for broilers, has directed a larger proportion of the resources into poultry production relative to beef and pork during the 1980's and 1990's.

Average slaughter weights of animals and birds in 2000 were much higher than in 1982 and have been a large factor in the increase in meat production. The average weight of broilers slaughtered in 2000 was up over 20 percent since 1982. The average weight of turkeys slaughtered increased 32 percent in the last 18 years.

Average weights of cattle and hogs have also increased. The average dressed weight of steers increased 14 percent from 1982 to 2000 while the average dressed weight of heifers rose 21 percent. The average dressed weight of hogs rose 13 percent despite the smaller proportion of heavier weight sows in the total slaughter.

The increase in average weights has had positive effects on efficiencies of production and marketing. The need for animal housing, slaughtering, breaking and boning facilities as well as other production inputs has not risen as fast as the increases in total meat production as a result of the ability to feed to heavier weights while still maintaining or improving the quality of the meat produced.

Export Boom Has Leveled Off

The decade long rise in exports of most meats that began in the mid-1980's has leveled off during the last several years (Figure 12). Spurred by severe economic problems in the first half of the 1980's, the livestock and meat industry aggressively financed the promotion of its products in international markets. A weakening dollar and rapidly growing economies, particularly in Southeast Asia, and an improving quality of U.S. produced meat helped in the success of the marketing effort. However, in the last several years, a slowdown in certain markets, particularly in Southeast Asia and Russia, along with a strengthening dollar, have slowed the export growth.

Meat Consumption Per Capita in 2000 Nearly Matches 1999 Record

The all time record high of 220.4 pounds of meat consumed per capita in the U.S. in 1999 was nearly matched in 2000. Consumption per person of beef was up slightly, pork consumption was down a bit while poultry consumption per person was little changed.

During the last decade, per capita consumption of beef, pork and turkey has trended sidewise while rising broiler consumption has accounted for practically all of the gain in the rise in total meat consumed per person.

Beef consumption per person, which peaked at 94.4 pounds in 1976, has been in a narrow range of 65 to 69 pounds for the last 12 years. Pork consumption per person has also trended sidewise between 48 and 54 pound for the last 19 years. A high of 60.6 pounds had been

reached in 1971. Turkey consumption per capita has been flat since 1990 with a range of 17.6 to 18.5 pounds each year, up from 11.0 pounds in 1984 and only 4.5 pounds in 1965. However, broiler consumption has continued to rise to a new high of about 77 pounds in 1999 and 2000, up from 48.3 pounds in 1983 and only 23.5 pounds in 1960.

Beef Production May Turn Down in 2001

Beef production rose about 18 percent from the cyclical low in 1990 to 2000. Nearly half of that increase resulted from the rise in average weights of animals at slaughter. The beef production cycle usually follows the cattle numbers cycle by several years and the number of cattle and calves on farms and ranches peaked at 103.5 million head in 1996 and fell to 99.0 million head in 2000. A further small decline is expected in 2001.

Slowly rising cattle slaughter and a decline in the U.S. calf drop, down from 40.2 million in 1995 to 38.7 million in 2000, has cut into total cattle numbers and should lead to reduced cattle slaughter for the next several years, beginning in 2001. The downward phase of the production cycle is not expected to last more than several years but should support a rise in cattle prices during that time.

Choice cattle prices are cyclical and averaged \$75.37 per live cwt. for the six years from 1988 through 1993. However, during the last seven years from 1994 through 2000, they averaged only about \$66.25, reaching a low of \$61.75 in 1998 (Figure 14). They rose to nearly \$66.00 in 1999 and to about \$69.00 in 2000. They should average

above \$70 in 2001 as they did in each of the six years from 1988 through 1993.

Feeder Cattle Prices Strong

Feeder cattle prices have been strong in 2000 and should continue strong in 2001 and for several years beyond if feed prices remain moderate. In April 1995, feeder cattle (750-800 lbs., Oklahoma City) reached a low of \$53.10 under the weight of low and falling choice cattle prices and very high and rising corn prices that reached a record all time high one month later. The April 1995 low in feeder cattle prices was the lowest in 17 years.

Feeder cattle prices in 2000 averaged about \$86, nearly \$10 higher than in 1999, and much higher than the cyclical low of \$61.08 in 1996. The 2000 price average threatened the record high of \$88.27 in 1990 and subsequent highs of \$88 in 1991 and \$86.45 in 1993. Driven by stronger choice cattle prices and moderate feed prices, feeder cattle prices should rise again in 2001 and should exceed the record high set in 1990.

Cow Slaughter Low, Prices Up

Federally Inspected cow slaughter of about 5.4 million head in 2000 was the lowest since a similar number in 1972 and 1970 and otherwise the lowest since 1964. Cow slaughter reached a cyclical high in 1996 during the year of record high corn prices and has fallen 24 percent in the last four years. During that time, dairy cow slaughter fell 14 percent and beef cow slaughter declined 32 percent. Cow slaughter should decline a little more in 2001 as the cow and calf industry attempts to

produce a few more highly valued calves.

Cow prices (Boning Utility, Sioux Falls) have strengthened from their cyclical low of just over \$30 in 1996, the lowest average annual price since 1977 to about \$42 in 2000. A further moderate rise is likely in 2001 as slaughter numbers retreat toward their cyclical low.

Pork Production to Increase Slowly

Pork production declined about 2 percent in 2000 following two years of poor financial results. A huge increase in pork production in 1998 led to very low hog prices in late 1998 and into 1999. Total pork output increased 1.7 billion pounds in 1998 over 1997, more than the total increase of 1.6 billion pounds that took place during the preceding eight years from 1989 to 1997. The mild decline in pork output that began in late 1999 should continue into early 2001 and then be followed by a modest increase. A rise of 2 to 3 percent is expected for the calendar year.

The hog-pork industry has enjoyed excellent weather for production increases during the past several years mild winters, moderate summer temperatures, good crops and resulting low feed prices. Unfavorable weather in 2001 would make production increases more difficult. Pork production has not declined for two consecutive calendar years since 1980-1982.

Hog prices averaged about \$32 per live cwt. in 1998 and \$34 in 1999, the lowest annual averages since 1972. Even considering the vast improvements in production efficiencies and the relatively low feed costs, most producers

experienced very difficult financial times. However, hog prices averaged nearly \$45.00 in 2000 and were apparently high enough to stem the production decline.

In the USDA quarterly survey of hog producers on September 1, producers said they intended to increase autumn (September-November) farrowings by 1 percent and winter (December - February) farrowings by 3 percent. This would indicate, given normal weather, that pork production would begin to exceed year ago levels by the second quarter of 2001. It would also indicate that any production increase in 2001 would be of modest proportions.

The anticipated cut back in beef output in 2001 should help pork demand and unless the general economy falls into a recession, average hog prices in 2001 should be near those of 2000, in the low to mid-40's.

The structure and location of the hog production industry changed rapidly during the 1990's as the number of producers declined and the average size increased. The proportion of hogs raised in the traditional Mid-West Corn Belt declined as significant increases occurred elsewhere, most notably in North Carolina. While these trends may continue in the new decade, it appears that the momentum of change is slowing.

Broiler Production Increase Slowing

Broiler output set a new record high in 2000 for the 26th consecutive year but the increase of a little over 1 percent was the smallest in 18 years and far below the average annual increase of 5.6

percent achieved from 1984 through 1999. The nearly 7 percent increase in broiler production in 1999, a record annual increase of 1.9 billion pounds, a larger one year increase than the huge increase in pork production in 1998, caused prices to decline and resulted in disappointing financial returns in both 1999 and 2000. A more difficult export environment during the last several years also contributed to the lower prices and declining financial returns.

The explosive demand growth for broiler meat over the years has resulted in a very large industry where percentage increases achieved in the past are probably less likely in the future because they result in huge poundage increases, too large for the domestic demand to absorb. Unless export growth returns to the pre-1997 levels, the broiler industry will likely have to be content with a smaller annual percentage growth than it enjoyed in the past.

Helped by one additional weekday in 2001 compared with 2000 (2000 had one less weekday than 1999), broiler output should again slowly expand by 2 to 3 percent in 2001. Along with less competition from the beef industry, this should permit better financial results than the broiler industry has experienced during the past two years.

Turkey Expansion Continues To Be Moderate

Turkey production, after exploding in the late 1980's, and growing in the early 1990's, declined in the late 1990's for the first time in years. Turkey output rose 77 percent in the six years from 1984 to 1990, then rose another

20 percent during the next six years to 1996. However, the pace of production outran the pace of demand, causing frozen inventories of turkey to rise to record large levels, prices to tumble and financial results to deteriorate. As a result, production in 1999 fell 3 percent below that of 1996, unheard of in the industry in recent decades.

With the three-year cutback in production, frozen inventories were reduced to the lowest levels in more than a decade and with the help of low feed costs, profitability returned to the industry. A moderate production increase of about 2 percent took place in 2000 and a rise of about 3 percent is expected in 2001.

The average price of whole turkey hens in 2000 was the highest in 14 years and the highest ever except for the three-year period from 1984 through 1986. However, prices for most of the turkey parts such as breastmeat, thighmeat, wings, drums and mechanically separated turkey meat were well below their previous highs. Average prices in 2001 should be near those of 2000 and should feed costs remain moderate, the industry should be able to avoid the financial problems of the mid and late 1990's.

Egg Production, Prices Steady In 2001

Egg output has witnessed a moderate, steady rise since the industry's last annual production downturn in 1989. However, the increase in recent years, up 10 percent from 1996 to 2000, caused wholesale egg prices to tumble 26 percent from their high in 1996, when feed prices were very high, to 2000

when, fortunately for the industry, feed prices were low.

Egg production rose about 2 percent from 1999 to 2000. Another rise of about 1 percent is expected in 2001. Wholesale egg prices in 2000 have been about unchanged from a year earlier. Again, little change in the annual average prices for eggs is expected in 2001.

Retail Meat Prices Higher in 2000; Further Rise Expected in 2001

The record high employment and consumer income in 2000, along with only a modest increase in meat production, resulted in a faster rise in retail meat prices in 2000 after nearly a decade of mostly small increases. In the inflationary years of 1987 to 1991, retail meat prices rose at nearly the 5.0 percent annual average rate of the increase in the total Consumer Price Index (CPI). In the following disinflationary eight years from 1991 to 1999, retail meat prices rose less than the 2.6 percent average annual rise in the CPI. Inflation, as measured by the CPI, rose about 3.4 percent in 2000 and meat prices rose at an even faster rate. (Table 3)

Table 3: Annual Average Percentage Change in Retail Meat Prices and Consumer Price Index			
	1987-91	1991-99	1999-2000p
Beef & Veal	5.7	0.6	6.3
Pork	3.9	1.2	7.5
Poultry	4.1	2.4	4.1
Red Meat	4.9	0.9	6.0
CPI	5.0	2.6	3.4
p=Preliminary			

Retail meat prices tend to rise unevenly from year to year. Retail poultry prices declined 1 percent from 1989 to 1992, then surged 19 percent during the following five years before rising only 3 percent from 1997 to 2000. The rise, then the decline in poultry exports partially explains the uneven price advances during the last eight years.

The workings of the beef production cycle helped retail beef prices to lurch upward a total of 30 percent from 1986 to 1990, slow to a 6 percent increase from 1990 to 1993 and to less than a 2 percent gain from 1993 to 1999. Likewise, cyclical hog production

helped retail pork prices rise 13 percent in one year from 1989 to 1990, then climb only a total of 4 percent during the following five years before jumping 16 percent from 1995 to 1997. They then fell 6 percent during the next two years.

The modest increase in total meat production in 2001 will help support meat prices in 2001. However, an expected slower rise in employment and consumer incomes may be a tempering factor. The anticipated decline in beef output will likely keep beef prices advancing. However, pork and poultry prices may not rise as fast as in the past year.

Figure 12: Annual Net Foreign Trade of Livestock Products as a Percent of Production

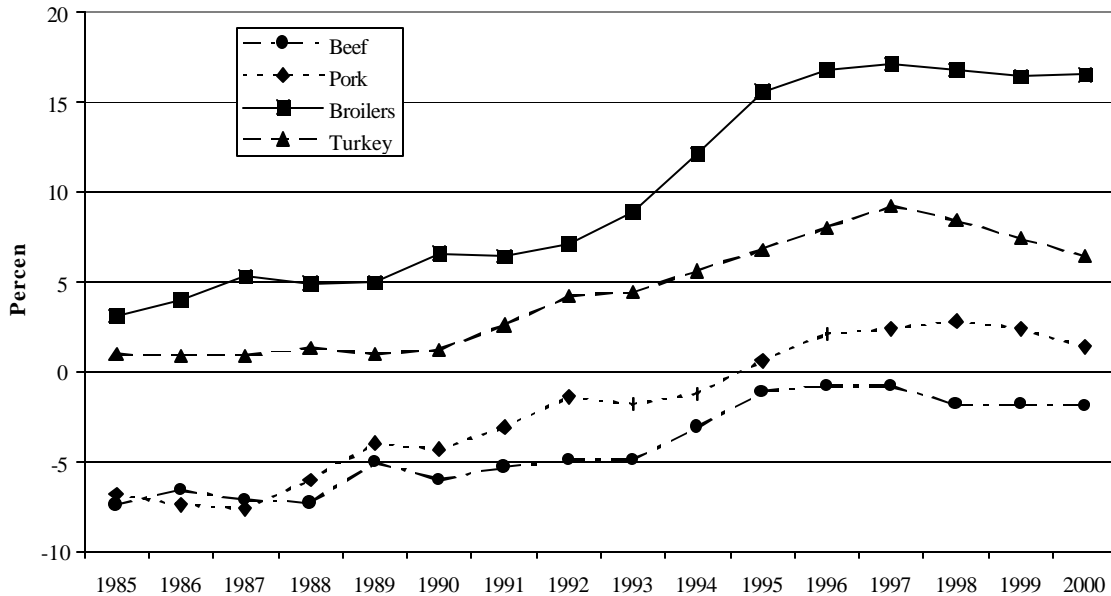


Figure 13: Average Annual Farm-Level Prices, Hogs and Poultry

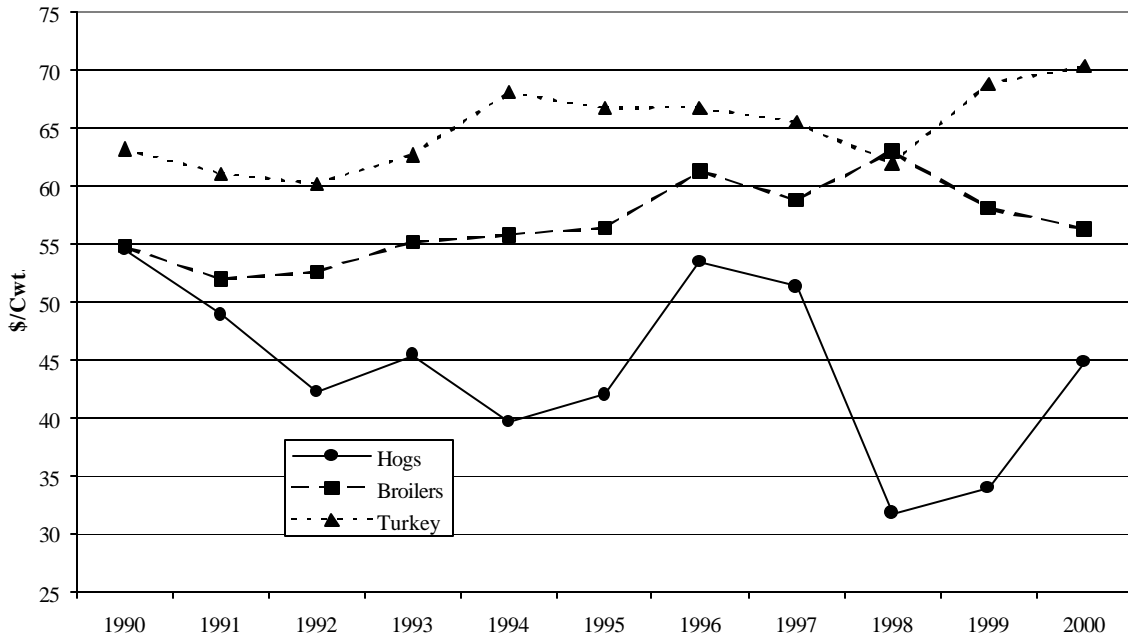
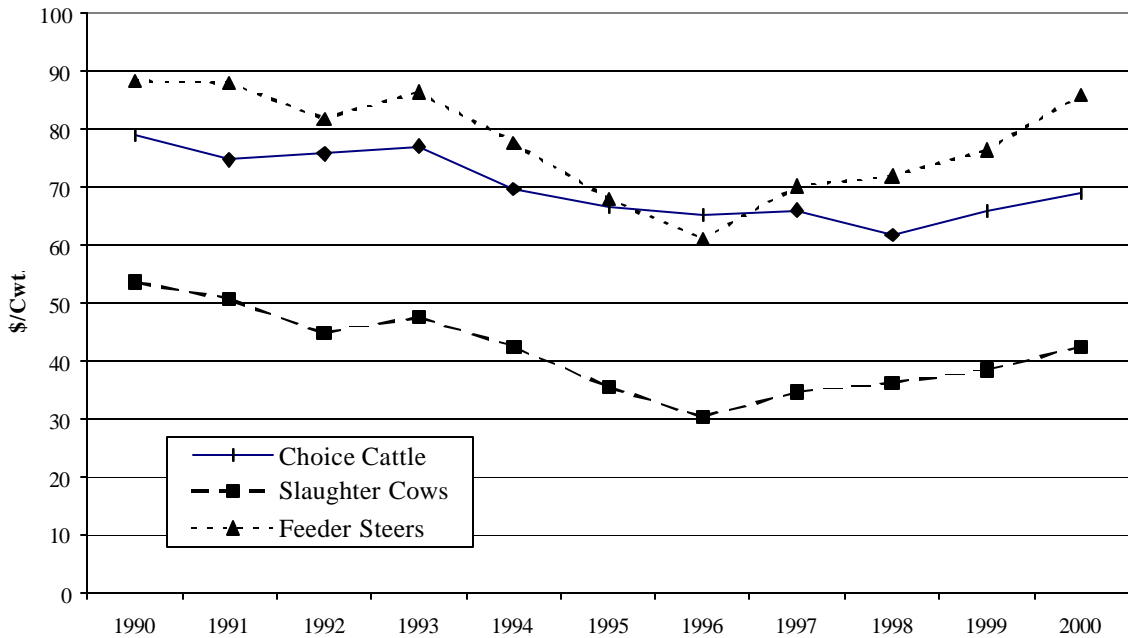


Figure 14: Annual Average Farm-Level Cattle Prices



Corn and Soybean Outlook

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Introduction

For the fifth consecutive year, U.S. national average corn and soybean yields were at or above trend line levels. This is the first five-year string of back-to-back good-to-excellent crops in well over 30 years. While this is an amazing accomplishment from a production perspective, this trend has had a negative impact on average price levels.

Wisconsin, like the nation in general, also turned out excellent crops the last several years. However, Wisconsin's production as a percentage of national

production has been less stable. For example, in 1999 Wisconsin growers produced a much larger percentage of the national corn crop than they did in 2000. This brought more volatility in local prices relative to the mid-1990's, and has increased basis volatility from year to year (basis is the difference between the local cash price and the futures price for the same commodity).

Corn

As of December 2000, the U.S. corn crop for the 2000/01 marketing year (September 1, 2000 through August 31, 2001) was estimated at 10.05 billion bushels. This is essentially equal to the record crop of 1994, but unlike 1994, the 2000 crop followed an excellent production year.

Table 4: US Corn Balance Sheet (Sep/Aug)

Marketing Year	USDA 95/96	USDA 96/97	USDA 97/98	USDA 98/99	USDA 99/00	USDA DEC EST. 00/01
<i>Million Bushels</i>						
Beg Stocks	1,558	426	883	1,308	1,787	1,715
Imports	16	13	9	19	15	10
Acres Planted	71.2	79.2	79.5	80.2	77.4	79.6
Acres Harvested	65.0	72.6	72.7	72.6	70.5	73.0
% Harvested	91.3%	91.7%	91.4%	90.5%	91.1%	91.7%
Yield	113.5	127.2	126.6	134.4	133.8	137.7
Production	7,374	9,233	9,207	9,759	9,437	10,054
Total Supply	8,948	9,672	10,099	11,085	11,239	11,779
Feed & residual	4,696	5,302	5,505	5,496	5,676	5,850
Food/Seed/Ind.	1,598	1,692	1,782	1,822	1,913	1,975
Exports	2,228	1,795	1,504	1,981	1,935	2,200
Total Demand	8,522	8,789	8,791	9,298	9,524	10,025
Ending Stocks	426	883	1,308	1,787	1,715	1,754
Stocks To Use	5.00%	10.04%	14.88%	19.22%	18.01%	17.50%
Avg. Farm Price	\$3.24	\$2.71	\$2.43	\$1.94	\$1.80	\$1.85

Wisconsin corn production totaled 363 million bushels in 2000 (November estimate), a reduction of almost 11 percent over 1999. The smaller Wisconsin crop relative to the national crop has resulted in excellent basis appreciation following the 2000 harvest season, and good storage returns early in the year. However, in many parts of northern Wisconsin, storage opportunities beyond the first of the year will be limited. Basis appreciation has already resulted in basis levels not normally seen until later in the year, and any additional returns to storage will need to come from a futures market rally.

The smaller Wisconsin crop in 2000 resulted from a 3.5 percent reduction in corn acres, and an 11-bushel per acre reduction over the record yields of 1999. Corn yields across Wisconsin in 2000 averaged 132 bushels per acre, down from 143 bushels per acre in 1999. Despite the large reduction relative to the previous year, however, the current yield ties with 1997 as the fourth highest Wisconsin corn yield on record.

Harvested corn acres in Wisconsin have been falling steadily since 1996, but until this past season higher yields had more than compensated for declining acres. Wisconsin harvested fewer corn acres in 2000 than in any year since 1993. Before that, you have to go back to the 1988 drought to find fewer harvested corn acres.

Average price levels for corn, both nationally and in Wisconsin, have drifted lower the last three years. As seen from Figure 16, the average cash price for corn was about \$2.25 per bushel in the early and mid-1990's. It is now below

\$2 per bushel, reflecting the current run of good to excellent production, and an associated build up in end-of-marketing-year stocks.

End-of-year stocks (referred to as the carryout) represent the market's cushion against a crop production problem in the next harvest, and have a direct influence on both the average price level through the current marketing year, as well as prices offered for delivery commitments following the next harvest. In general, the larger the anticipated carryout, the lower the average price during the marketing year, and the lower the pre-harvest price offerings for the next harvested crop.

Without a serious planting or production problem next year, ending stocks in 2001/02 will not be reduced appreciably from the current projection for 2000/01. Therefore, producers need to reconsider what constitutes an attractive price guarantee for 2001 produced corn as they progress through the production season. The current price levels of both energy and chemical inputs (especially fertilizer) suggest that corn acres could be reduced next year. However, as Wisconsin's recent experience suggests, a slight reduction in acres does not necessarily translate into a significant reduction in corn production. Further, any acreage reductions are most likely to come from the Western corn-producing areas (for example the Dakotas) where acres were most recently brought into production. This means acres taken out of corn production because of high input costs (at least in the first year) will be those with the lowest yield potential already. It is unlikely that the traditional corn soybean rotations in the true Corn Belt will be significantly altered with

just one year of high input prices. If the current input-cost-to-corn-price ratio persists into another production season, a more dramatic shift from corn production could occur. However, the possibility of that happening probably won't have a significant impact on corn prices in coming months.

Soybeans

The year 2000 continued to see aggressive increases in soybean acres nationally and in Wisconsin. Soybean acres in the nation have increased rapidly since 1992, and in recent years have been heavily influenced by the current government farm program. The current loan program, and associated loan deficiency payments (LDP),

strongly favors the production of soybeans rather than corn and spring and winter wheat. As a result, some of the most dramatic increases in soybean acreage happened on land formerly planted to wheat. In North Dakota alone, soybean acres were increased about 50 percent relative to 1999, and now total over 2 million acres. When South Dakota is included, the combined increase in soybean acres is almost 1 million. This more than offset acreage declines in other states.

The Dakota experience is also reflected in Upper Midwest acreage allocations. Wisconsin grew 150,000 more acres of soybeans in 2000 than in 1999. In addition, Minnesota added 200,000 acres and Michigan added 250,000 acres. U.S.

Table 5: US Soybean Balance Sheet (Sep/Aug)

Marketing Year	USDA 95/96	USDA 96/97	USDA 97/98	USDA 98/99	USDA 99/00	USDA DEC 00/01
<i>Million Bushels</i>						
Beg Stocks	335	183	132	200	348	288
Imports	5	9	5	3	4	3
Acres Planted	62.6	64.2	70	72	73.7	74.5
Acres Harvested	61.6	63.3	69.1	70.4	72.4	73.0
% Harvested	98.4%	98.6%	98.7%	97.8%	98.2%	98.0%
Yield	35.3	37.6	38.9	38.9	36.6	38.0
Production	2,177	2,380	2,689	2,741	2,654	2,777
Total Supply	2,517	2,572	2,826	2,944	3,006	3,068
Crush Sep/Aug	1,370	1,436	1,597	1,590	1,579	1,605
Exports	851	882	873	801	970	975
F/S/R	111	123	156	205	170	167
Total Demand	2,332	2,441	2,626	2,595	2,719	2,747
Ending Stocks	185	131	200	348	288	320
Stocks To Use	7.93%	5.37%	7.60%	13.41%	10.59%	11.65%
Avg. Farm Price	\$6.77	\$7.35	\$6.47	\$4.93	\$4.65	\$4.70

soybean production is rapidly expanding north and west from traditional production areas.

Like corn, soybean yields have remained healthy for each of the last five years. The combination of stable yields and aggressive acreage growth has resulted in several recent record soybean crops, including the 2000 crop.

From Figure 17, note that soybean production, both nationally and in Wisconsin, remained stable through the 1980's. Beginning in the early 1990's, however, large acreage increases brought increased year-over-year production. Growth in Wisconsin was particularly strong. Wisconsin soybean production in 2000 was five times what it was 12 years ago, reflecting growth in acreage and improved yields. In 1980 the average Wisconsin soybean yield was 33 bushels per acre. By 1990, it had increased to 41 bushels per acre, and in 1999 averaged 46 bushels per acre. The record average yield for Wisconsin came in 1998 at 47 bushels per acre. The average yield in 2000 was 40 bushels per acre, a bit of a disappointment relative to the previous two years, but still well above the averages expected just a few years ago.

As with corn, average soybean price levels in both the U.S. and Wisconsin have moved lower, reflecting the increase in soybean production. Prices the last three years have been consistently below levels that seemed unachievable just 4 or 5 years ago. However, because of the relatively lower per-unit production costs compared to corn and wheat, and a more attractive price guarantee through the government loan program, soybean acres will

continue to increase, putting even more downward pressure on market prices. A look at average weekly prices for the nearby soybean futures contract (the futures contract closest to maturity) shows just how much average prices have changed (Figure 18). Prior to 1997, futures prices for soybeans averaged about \$6.25 to \$6.35 per bushel. Prices below \$5 were almost unheard of, and never lasted long if they did occur.

While average corn prices have fallen, soybean prices have fallen much more. The average cash price for soybeans now is 75 cents or so lower than it was just 4 or 5 years ago. The most attractive pricing strategy for producers in this environment has been to forward-price next year's production when futures prices reach the upper \$5 range (a price associated with the absolute bottom of the potential price range in earlier years), and then hope to add a large LDP payment to that at harvest, with cash prices in the low \$4 range. Futures prices over \$6 anytime during the marketing year have been rare, and until soybean carryout levels drop significantly, will continue to be elusive. Given the current farm program incentives, a significant drop in carryout likely will occur only with a substantial production disaster in the United States or Brazil.

The current price levels of energy and chemical inputs increase the economic incentives to plant soybeans over corn and wheat. As a result, if current prices persist into the planting season, we could easily see a 1-million-acre increase in U.S. soybean acres for 2001, and a corresponding increase in Wisconsin. Most of the national acreage increase

will likely occur in the most western and northern producing states. However, if high energy prices persist beyond the 2001 production season, soybean acreage could grow in the central Corn Belt as well.

The current market environment suggests that soybean prices will continue to average in the low to sub-\$5 range in the coming year. Producers who want to maximize pricing opportunities will need to be prepared to accept pre-harvest prices at levels unheard of just a few years ago.

Without a significant production disruption in 2001, futures prices for soybean delivery in 2001 will be hard-pressed to reach the \$6 per bushel range, and will certainly not be sustainable at that level. Given a normal planting and production season, the pricing strategy for soybean producers will be to maximize LDP payments to enhance historically low market prices.

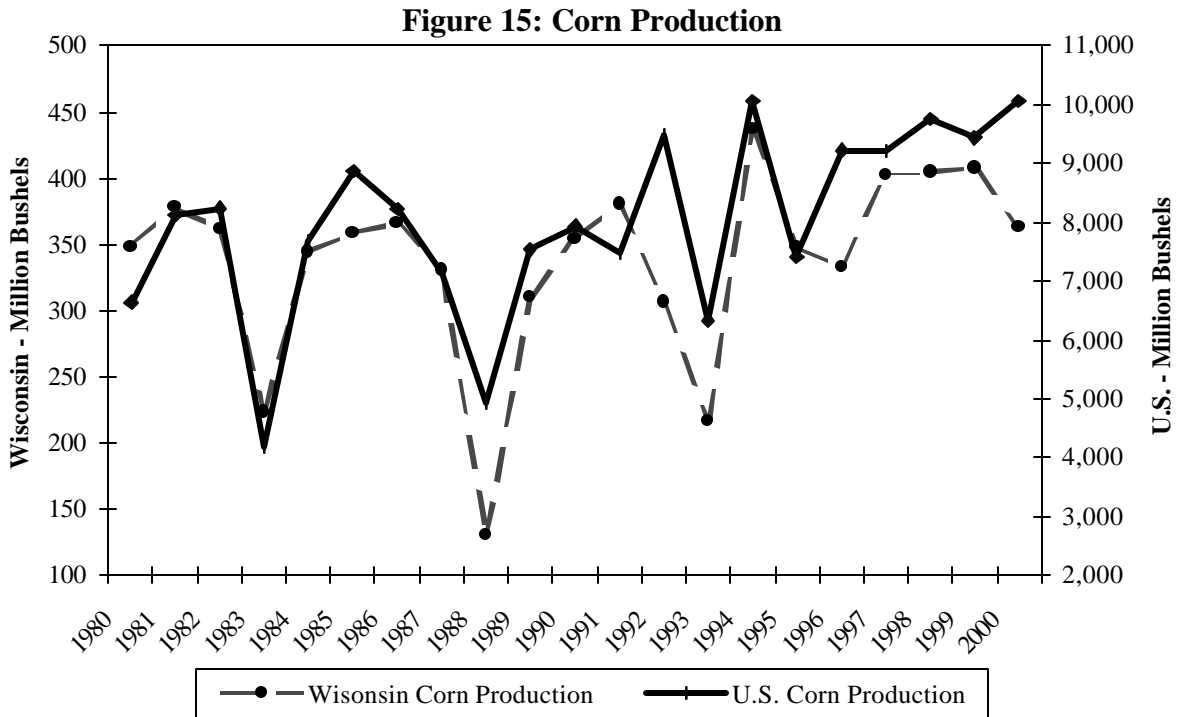


Figure 16: Average Annual Cash Corn Price

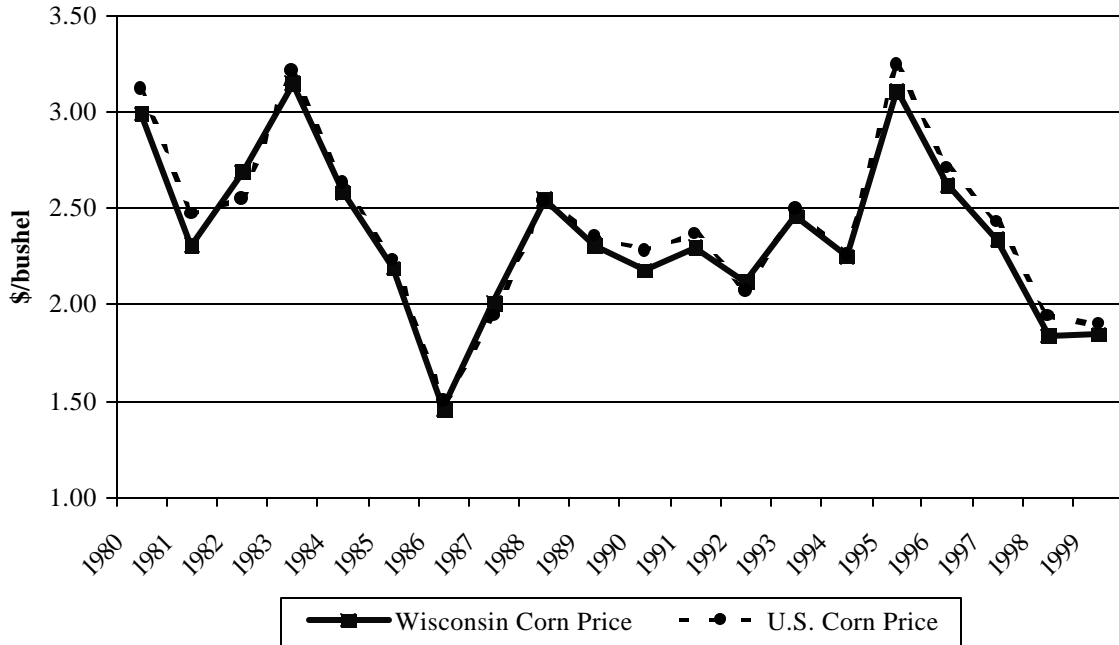


Figure 17: Soybean Production

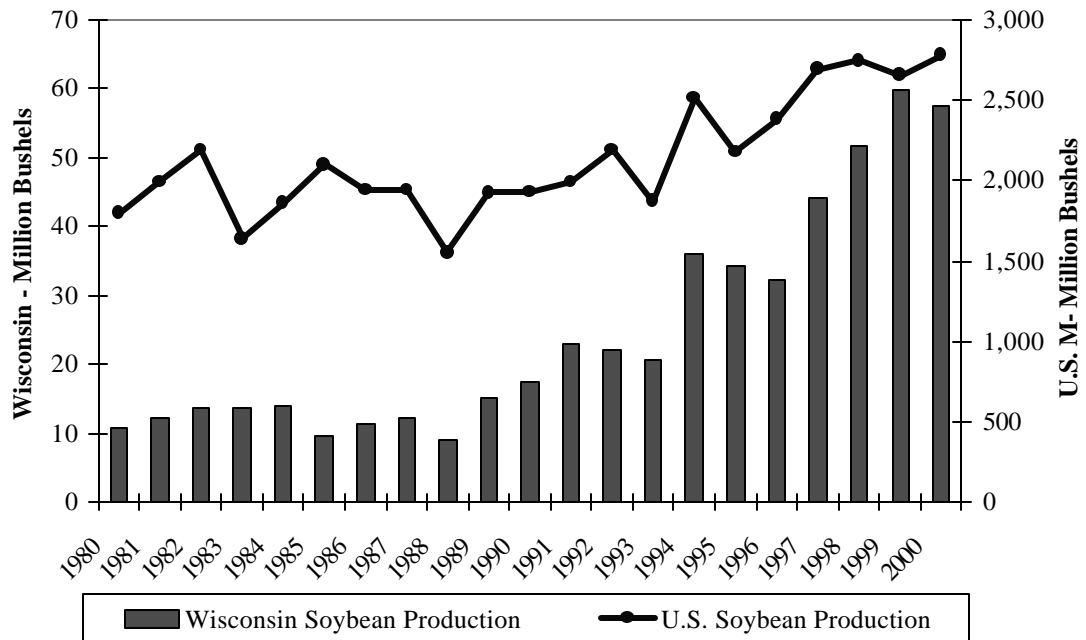


Figure 18: Weekly Average Soybean Prices - Nearby Futures



Outlook for Farm Production Inputs

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Farm Credit

Credit conditions in agriculture are likely to change substantially in the coming year if farm income continues to be depressed. Cash-strapped farmers will probably be forced to turn to lenders to meet their short-run cash needs. Fortunately most farmers should be able to get needed credit because they have the equity needed to satisfy their lenders' credit standards.

Farmers' demand for credit has been on the rise for the last few years, mostly to

finance land purchases and improvements in dairy facilities. Now that farm incomes are depressed, farmers will cut back on the use of credit for capital purchases and instead start requesting the operating credit they need to offset operating losses and cash-flow deficits. The increased demand for operating credit should be greater than the cutbacks in demand for capital credit. Hence total borrowing by farmers in the coming year should be up markedly from what it has been the last few years.

Demand for farm real estate loans could be up substantially in the next year but not for the purpose of buying land or financing improvements. Instead, demand for real estate mortgages will

come from farmers who want to restructure existing debts. These farmers will be seeking to negotiate more affordable principal and interest payments on their existing loans. Refinancing debts should ease farmers' short-run cash flow problems but will not eliminate the problems that are rooted in low prices and farm incomes.

Farmers with little or no real estate debt might be wise to consider mortgaging their farms and obtaining real estate credit instead of using operating loans to offset cash flow deficits. Interest rates on real estate mortgages tend to be lower than those charged on operating loans, as evidenced by the interest rates presented in Table 6.

Farm loan interest rate data reported in the *Agricultural Newsletter* (issued by the Federal Reserve Bank of Chicago) show that interest rates on farm real estate loans have typically been .60 to 1.21 percentage points lower than interest rates on farm operating loans. These data also show how the gap between the interest rates for operating loans and real estate loans has widened during the 1995-2000 period. This latter

point is important because it suggests that interest rates on real estate mortgages may be more stable than operating loan interest rates. Given that the interest rates on real estate mortgages tend to be lower and less volatile than the interest rates on operating loans, there are some incentives for farmers to use real estate credit in favor of operating loans.

There is little reason to believe that agricultural lenders will be unable to satisfy the increased credit demands of farmers. Commercial bankers, the Farm Credit System and other commercial lenders are all well positioned to tap into financial markets and get needed capital for credit-worthy farmers.

Just because agricultural lenders have ready access to capital does not mean they will respond favorably to every credit request. These financial institutions are intermediaries; they are responsible for insuring that the capital they obtain in financial markets and loan to farmers ultimately is returned to the investors who provided this capital. It is critical that agricultural lenders make good on their obligations to investors. If

Table 6: Interest Rates on Farm Loans (For April - June Period) Reported by the Federal Reserve Bank of Chicago

<u>Year</u>	<u>Operating Loans (%)</u>	<u>Real Estate Loans (%)</u>
1995	10.24	9.64
1996	9.69	8.81
1997	9.72	8.83
1998	9.54	8.52
1999	9.11	8.18
2000	10.43	9.21

they do not, they could jeopardize their access to financial capital in the future. If this occurs, farmers would no longer have access to credit.

Therefore, financial lenders are reluctant to extend credit to farmers who would be borrowing heavily against land, cows, machinery and other farm assets. The probabilities of a default are judged to be great.

It is understood that a lack of collateral can prevent some farmers from receiving credit from commercial banks, the Farm Credit System, and other commercial lenders. To help alleviate this collateral problem, both the federal and state governments have created some farm loan guarantee programs. Under these programs, the government provides loan guarantees to lenders who are willing to extend credit to farmers who are unable to meet the lenders' collateral standards. The federal farm loan guarantee program is administered by the Farm Service Agency and Wisconsin's program is run by the Wisconsin Housing and Economic Development Authority.

Federal and state farm loan guarantee programs should enable most farmers to get the credit they need but there will still be some farmers who do not qualify for credit. These unfortunate individuals will be forced to go through foreclosure proceedings or bankruptcy. Foreclosures and bankruptcies should not be all that common in the near term, but, if farm income remained depressed for an extended period of time, these events are likely to become more widespread in the state.

At this time it does not appear that farmers are going to have their financial

problems compounded by rising interest rates. In fact there is a good chance that interest rates could fall modestly in the coming year if, as expected, the Federal Reserve Bank decides to stimulate the economy by cutting interest rates. Federal Reserve Chairman Alan Greenspan has expressed his concern about the possibility of recession and appears to be willing to cut interest rates in order to counteract the forces that are slowing down the economy. If the Federal Reserve Board follows through with this policy, interest rates could be heading down. Farmers who are going to have to increase their borrowing in 2001 would welcome rate cuts.

Farmland Values

Things are a little gloomy in the farm economy given that low commodity prices have depressed farm incomes. The situation is not nearly as bleak as it was in the 1980's, when farmers' financial problems were compounded by a collapse of the farmland market. Back then, farmland values fell by nearly 50 percent in less than four years. This collapse of the farm real estate market was the primary cause of the farm crisis of the 1980s.

The good news is that farmland values are holding steady or rising despite the drop in farm incomes. This stability in farmland values is a little surprising given that in the last decade farm incomes have been on a downtrend. Economic theory suggests that declining farm incomes should result in decreasing farmland values. Since this has not occurred, we have to conclude that some factor other than farm income is influencing the farm real estate market.

This other factor seems to be the non-farm real estate market.

As shown in Figure 19, in the past few years Wisconsin's farm real estate values have been rising at roughly the same rate as residential and commercial property values. This suggests that the residential and commercial property markets are driving the Wisconsin farmland market. This linkage between the farm and non-farm real estate markets suggests that, at least in the near term, farmland values could hold steady.

Another factor that could be giving some support to farmland values is the new use-value assessment program that is being used in Wisconsin to levy property taxes on farmland. Prior to adopting use-value assessment, Wisconsin farmers had to pay property taxes based on the market value of farmland. Under the market approach to taxing farmland

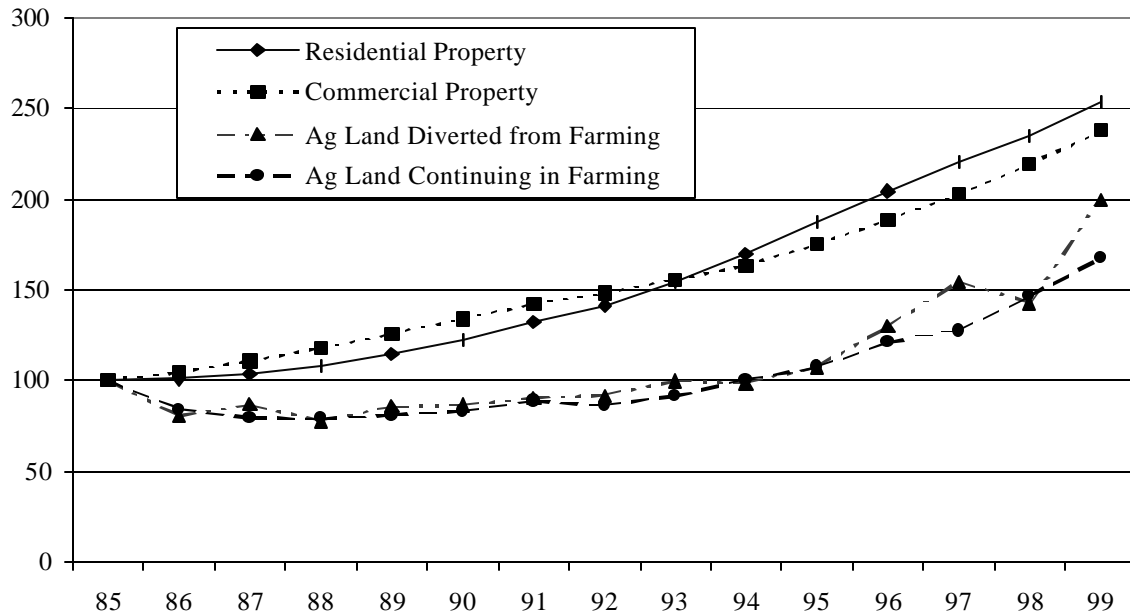
farmers' property taxes were nearly double the taxes currently paid under the use-value system.

Now that farmland property taxes are substantially below historic levels, the returns from owning farmland are higher. As such, the value of land is up because people can expect to earn higher net returns on land. Thus, the new use-value assessment system for taxing farmland should have a positive effect on real estate values.

Cash Rents for Crop Land

From 1994 to 2000, per acre rents for cropland in Wisconsin rose roughly 30 percent, from almost \$49 to \$65. This run-up in cash rents was fueled by relatively strong corn prices in 1997 and 1998 and it has continued even though market prices for corn have dropped dramatically the last couple of years.

Figure 19: Real Estate Value Indexes



On the surface, it would seem that cash rents should be declining in light of lower potential earnings from land. While market prices for corn have dropped, government payments to farmers, in the form of loan deficiency payments, transition payments, and emergency payments, have helped offset decreases in corn prices and propped up returns from land. In the absence of government payments, returns to land would have fallen and most likely triggered a reduction in land rents.

The recent increases in farmland rental rates are in part a function of increased demands for land. Farmers who are hard-pressed to make good on their loan payments and cover their living costs are aggressively bidding for land, hoping these additional acres will provide the income and cash they need to survive. This competition among farmers has put upward pressures on land rent in recent years. Over time this competition for land should decline as some farmers go out of business. When this happens, land rents will decline if commodity prices stay at current levels. Alternatively, rents could rise further if commodity prices recover in the near term. In any case, it is doubtful farmers can continue to afford to pay the rents they have been paying.

Production Inputs

Increases of 2 to 5 percent in farm input prices are predicted for the next year by

D.H. Doster of Purdue University. This increase comes on the heels of a 5 percent hike in the price of farm inputs last year.

Doster offers a mixed forecast for fertilizer prices. He expects anhydrous nitrogen to be up 30 to 40 percent, reflecting higher natural gas prices. Urea nitrogen is expected to be readily available and prices for this fertilizer are likely to be unchanged from last year. Potash prices are expected to remain relatively low and increase no more than 5 percent in 2001.

Doster forecasts no significant increases in farm chemical prices. Normally, higher petroleum prices would be expected to boost chemical prices. However competitive pressures and mergers within the agricultural chemical industries are keeping chemical companies from passing on their increased costs to farmers.

Seed prices are not expected to change much but the price of newer seed varieties, which promise higher yields, could be priced at levels 10 percent higher than more conventional seeds.

Fuel prices are the big unknown in the coming year. Last year fuel prices were up sharply because OPEC nations tightened crude oil supplies. If OPEC continues to restrict crude oil supplies, fuel prices in the coming year are likely to be as high as they were in 2000.

Part III: Special Articles

Outlook for the National Economy and Agricultural Policies

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This article begins by tracing the emergence of the "Goldilocks" economy in the United States during the 1990s. Then it explains why growth of the U.S. economy can be expected to continue slowing in 2001, discusses the economic environment likely to exist when development of the 2002 Farm Bill begins, and describes agricultural policy provisions that might emerge in 2002 farm legislation.

It is useful to consider the outlook for the U.S. economy and that of U.S. agricultural policy together. Developments that affect the national economy will influence the agricultural policy measures that are needed (and feasible to include) in the next major Farm Bill. In particular, growth of the national economy and consumer income will influence the demand for agricultural products and needed levels of agricultural price supports. Moreover, the size of federal budget surpluses will affect the economic environment that will exist when the 2002 Farm Bill is crafted and influence the extent to which the Congress and Administration will be positioned to support farm commodity prices.

Emergence of the "Goldilocks" Economy in the 1990s

For much of the 1990s, the United States had what is often called a Goldilocks economy. Like the porridge that Goldilocks found in the story of the three bears, the economy was not too hot, not too cold, just right. The Goldilocks economy with its strong growth, tame inflation, and relatively high employment was the envy of the world during much of the past decade (See Table 7). The U.S. economy expanded for a record 118 months during the 1990s and 2000, often at rates that in earlier years would have been considered unsustainable. By serving as a strong market for exports, the robust U.S. economy helped to pull Mexico out of recession in the mid-1990s and Asian economies out of recession in the late 1990s. And beginning in 1998, the U.S. economy generated budget surpluses for the first time since 1969.

Record increases in stock prices accompanied the strong performance of the economy until 2000. Stock prices increased by over 20 percent per year during the last half of the 1990s before becoming volatile, moving sideways and frequently downward during 2000. The increase in the value of stock portfolios produced a wealth effect that spurred consumer spending and helped to sustain

high levels of economic growth in the United States. The wealth effect is not trivial. A rule of thumb is that the wealth effect produces \$3 to \$4 in consumer spending for each \$100 increase in stock market wealth.

Many things besides the stock market wealth effect contributed to the economy's strength, including productivity gains associated with adoption of computer technology, emergence of "new economy" companies that emphasized information technology, a host of other forces that produced strong corporate earnings, low

oil prices for at least part of the period, appropriate Federal Reserve interest rate policies, and the elimination of budget deficits. The last development reduced the federal government's demand for credit and helped to produce lower interest rates.

Obviously not all sectors of the U.S. economy prospered during the 1990s. The U.S. farm economy experienced problems during the late 1990s, substantially because of global overproduction of major crops and livestock products and weak foreign demand for U.S. agricultural exports.

Table 7: Growth, Inflation and Unemployment Rates for the U.S. Economy

<i>Year and Quarter</i>	<i>Real GDP Growth</i>	<i>Consumer Price Index</i>	<i>Unemployment Rate</i>
		<i>--Percent--</i>	
1992	3.0	2.9	7.5
1993	2.7	2.7	6.9
1994	4.0	2.7	6.1
1995	2.7	2.5	5.6
1996	3.6	3.3	5.4
1997	4.4	1.7	4.9
1998	4.4	1.6	4.5
1999	4.2	2.7	4.2
2000:			
Q1	4.8	4.3	4.1
Q2	5.6	3.7	4.0
Q3	2.2	3.1	4.0
Q4 (Forecast)	NA	2.7	4.0

Source: Council of Economic Advisers, "Economic Indicators," November 2000 and Standard and Poor's, "U.S. Forecast Summary," October and November 2000.

Continued Slowing of the Economy in 2001

The demise of the Goldilocks economy has been prematurely forecasted before and forecasters may be wrong yet again. However, signs point to continued slowing of the economy in 2001. Evidence of the slowdown is provided by the real GDP growth figures for 2000, which declined from 5.6 percent in Quarter 2 to 2.2 percent in Quarter 3. Many factors will contribute to slower economic growth in 2001. These include the impacts of the six increases in the federal funds rate that the Federal Reserve put in place beginning in mid-1999, higher oil and natural gas prices, weaker corporate earnings, associated downward movements in stock prices, lower consumer confidence, weaker retail sales, tightening of credit, overcapacity problems in the auto industry, and the protracted period of uncertainty over the outcome of the Presidential election.

A potentially positive outgrowth of these developments is a decline in the value of the U.S. dollar. The U.S. dollar has been strong relative to the Euro, Japanese yen, and many other currencies in recent years in part because of the attractiveness of investment opportunities in the United States. As growth of the economy slows, the U.S. dollar is likely to weaken relative to the Euro in particular. This development should enhance U.S. trade competitiveness. These developments will be positive if the decline in the value of the dollar is gradual.

If all goes well, the economy will make the “soft landing” that Federal Reserve Chairman, Alan Greenspan, has tried to

orchestrate with six interest rate hikes. Fed policies and other developments could produce the soft landing and cause the economy to grow at a new sustainable rate of about 3.5 percent per year. This new growth rate might be accompanied by relatively tame, 2 percent to 3 percent, inflation and low unemployment. But less sanguine outcomes are possible.

Many analysts predict a slower real GDP growth rate of 3 percent (plus or minus a half percentage point for 2001). Few predict an immediate recession. However, there is a broad consensus that for now we have seen the last of the 20 percent-plus annual increases in stock prices witnessed in the last half of the 1990s. Volatile, more normal annual returns from stocks averaging 8 percent to 10 percent annually appear likely to re-emerge during the next few years. This means that the consumption-enhancing wealth effect of stock market gains will be lower during the next several years.

A soft landing (with a real growth rate of about 3 percent) is likely to characterize the behavior of the economy during the next year or two. What would cause a recession? (A recession is defined as at least two consecutive quarters of declining real growth.) Oil price hikes might. Given the uncertain political climate in important foreign supply areas, higher oil prices are possible. However, it would take oil prices sharply higher than the \$30 to \$35 per barrel prices that prevailed during much of late 2000 to cause a recession. This is partly because oil now represents a smaller percentage of economic activity (1 percent to 2 percent of GDP) than in the late 1970s (when oil was 6 percent to

7 percent of GDP). In the late 1970s, a run-up in oil prices contributed to a recession. A Standards & Poor's model indicates that oil prices of \$40 per barrel would reduce GDP by 1.3 percentage points. While this estimate might be questioned, it is clear that oil price increases will not have the large impact recorded in earlier years.

Policy mistakes could contribute to a recession. Many analysts expect that the Federal Reserve will hold the federal funds interest rate unchanged at 6.5 percent until early to mid-2001. The Fed, fully aware that the economy is cooling, has moved from its inflation fighting bias, which might have necessitated additional interest rate hikes, to a neutral stance. Its next move will be to decide when to reduce interest rates. If the Fed underestimates the speed at which the economy is slowing, it may fail to give the economy a needed boost via a timely interest rate cut. Fed Chairman, Alan Greenspan, had a laudable record in preserving the Goldilocks economy during the 1990s. But a policy error of this type did materialize during the U.S. economy's last recession in 1991.

A wild card is the stock market. Economist Dean Baker constructed the following scary but plausible story about the impact of an additional pronounced stock market correction in the September-October, 2000 issue of Challenge magazine:

"...a 50 percent decline in the stock market could reduce annual consumption expenditures by approximately \$350 billion or approximately 3.8 percent of GDP. If this

reduction occurred in a short period of time, it would virtually guarantee a steep recession. Since many firms are also using new stock issues to finance investment....a stock crash would likely lead to a substantial reduction in investment, further reducing demand. A market crash also will lead to a large reduction in government revenue."

Baker's scenario might be dismissed as an extreme case. However, underpinning the scenario is the fact that the average price/earnings ratio for U.S. stocks exceeded 30 to 1 in the late 1990s and early 2000. This is more than twice the historic average of less than 15 to 1, suggesting that a 50 percent decline in stock prices is possible. While it is unclear what would trigger such a large, across-the-board stock market correction, the effects of any such correction would be damaging.

Impacts of the slowing U.S. economy will not be uniform across the nation. Wisconsin, Michigan, Ohio, Indiana, and Illinois, with their high concentration of smokestack manufacturing industries, are now strongly feeling the brunt of the Fed's higher interest rates and overcapacity in the auto industry. These states are likely to grow more slowly than the nation as a whole in 2001, recording approximately 2.0 percent real growth rates while the rest of the nation grows at about a 3 percent real rate.

The Economic Backdrop for Developing the 2002 Farm Bill

The economic environment that will exist when deliberations on the 2002 Farm Bill begin will reflect macroeconomic (general economy) developments as well as those unique to the farm economy.

Macroeconomic Conditions

To review, the macroeconomic conditions likely to provide the backdrop for development of the next major U.S. Farm Bill include:

- Slower growth, probably a real GDP growth rate of 3 percent plus or minus half a percentage point.
- Lower interest rates than existed in late 2000.
- Continued relatively low inflation (consumer price index increases of 2.5 to 3.5 percent).
- Modestly lower oil prices than existed in late 2000.
- A weaker dollar in foreign exchange markets.
- Federal budget surpluses for 2001 and 2002 smaller than the one forecasted in the schedule below for 2001. This is probable because of lower tax revenues produced by slower economic growth, a possible tax cut in 2001 or 2002, and adoption of spending measures advocated during the 2000 Presidential campaign.

Year Federal Budget Surpluses*

1998	\$ 69.2 Billion
1999	124.4
2000	237.0
2001	228.0

**Source: Council of Economic Advisers, "Economic Indicators", November 2000.*

Among other things, these conditions suggest that domestic consumer demand for agricultural products will be reasonably strong when deliberations on the 2002 Farm Bill begin. Less certain is the strength of export demand for U.S. farm products. That demand component is considered below.

Conditions in the Farm Economy

The 1996 Farm Bill (officially called the Federal Agricultural Improvement and Reform Act and unofficially the "Freedom to Farm" Act) was passed when U.S. agricultural exports were booming, market prices for many agricultural products were relatively high, and government support for the sector was low. The Freedom to Farm Act represented a departure from farm programs that had existed since the 1930s. Thus, excluded from the 1996 Farm Bill were acreage reduction programs (supply control measures) and target price and deficiency payments for producers of major crops. Gone too were the relatively high non-recourse crop loan rates that had existed in some previous Farm Bills. The USDA's dairy price support program was scheduled for elimination at the end of 1999.

In 1998, less than two years after the 1996 Farm Bill was passed, market prices for many U.S. farm products began slumping. The lower market prices stemmed from declining farm exports and overproduction. The impact of the drop in farm prices is reflected in U.S. farm income statistics for 1996 to 2000 (Table 8).

Crop receipts recorded the largest reduction, falling \$17 billion (15 percent) during 1997 to 2000. Aggregate cash receipts from all livestock remained fairly constant during 1997 to 2000 and were actually forecasted to record a small (4 percent) increase from 1997 to 2000. Net cash farm income also exhibited more stability than crops receipts, falling about \$3.1 billion (5 percent) from 1997 to 2000. An approximate tripling of direct government payments to farmers from 1997 to 2000 cushioned the fall in net cash farm income.

While the increase in direct government payments to farmers during 1998 to 2000 was large, the payments remained relatively small as a percentage of total federal budget outlays. For example, direct government payments in 1999 and 2000 represented 1.2 percent and 1.3 percent, respectively, of total federal budget outlays for these years. As percentages of total federal budget outlays, the expenditures for direct government payments to U.S. farmers for 1999 and 2000 were only about three-quarters as large as those made during the depths of the farm recession in the 1980s.

The depressed cash receipts for crops during the late 1990s are traceable partly to increased domestic and world production and shrinking export demand. U.S. corn production was a modest 2.2 percent higher in 1999/2000 than in 1996/97. The increase for the comparable period for soybeans was a substantially larger 22 percent. Hit by a 10 percent expansion in domestic

Table 8: U.S. Farm Income Statistics and Agricultural Exports

<i>Receipts Category</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>	<i>1999</i>	<i>2000</i>
	\$ Billion				
Cash Receipts:					
Crops	106.3	111.1	102.5	93.1	94.1
Livestock	92.8	96.5	94.1	95.5	100.3
Direct Gov't. Payments	7.3	7.5	12.2	20.6	23.3
Net Cash Income	57.6	58.5	55.4	54.6	55.4
Agricultural Exports	59.8	57.3	53.6	49.1	50.5

Source: USDA. "Agricultural Outlook," October and November 2000. Figures for 1999 are preliminary and figures for 2000 are forecasts.

production and reduced slaughter capacity, U.S. hog producers saw farm level hog prices (for hogs not sold under contracts) drop to Great Depression levels late in 1998. Beef production scored smaller increases but did rise by 5 percent to 6 percent from 1997 to 2000. Farm milk prices held up until late 1999 but have been depressed since that time, reflecting mostly higher milk production in California, Idaho, Arizona, and other Western states.

The declining export sales of U.S. crops and livestock products were caused in part by depressed economic conditions in Asia and Russia and substantial increases in world production. The following schedule shows the percentage increases in annual average world production of major agricultural products from the period approximately four years before the 1996 Farm Bill to the period four years after passage of the 1996 Farm Bill.

<u>Product</u>	<u>Production Increase: 1992/93-1995/96 to 1996/97-1999/00*</u>
Coarse Grains	6.4%
Wheat	8.4
Rice	8.1
Oilseeds	16.8
Oils	17.6
Red Meat	6.8
Poultry	25.6
Milk	1.0

Source: USDA, "Agricultural Outlook", November 2000.

With several exceptions, the increases appearing in the above schedule appear

moderate. However, in the face of weak foreign demand in important export markets, U.S. and world prices for certain agricultural commodities were pushed sharply lower by these supply increases.

As noted earlier in Table 8, total U.S. agricultural exports declined from \$59.8 billion in 1996 to \$50.5 billion in 2000. This decline was mostly concentrated in grain and feeds and to a lesser extent in oilseeds and products. U.S. grain and feed exports declined from \$21.6 billion in 1996 to \$13.6 billion in 2000 (37 percent) while exports of oilseeds and products declined from \$9.7 billion in 1996 to \$8.7 billion in 2000 (10 percent). The dollar value of most other U.S. agricultural exports remained nearly constant or recorded small increases during this period. While starting from a low base of \$0.7 billion in 1996, dairy product exports actually increased by 43 percent during this period.

Whither U.S. Agricultural Exports? The USDA forecasts that U.S. agricultural exports will increase by about \$1.0 billion (2 percent) to \$51.5 billion in 2001. The Agency expected corn exports to account for about two-thirds of the increase in bulk agricultural exports from 2000 to 2001. This increase in exports was expected to stem from lower competition from China and Eastern Europe and modestly stronger global demand. However, corn exports from China now appear likely to be larger than expected, which translates to smaller increases in U.S. corn exports than forecast by the USDA. Exports of most other U.S. agricultural products are forecasted to show only minor changes from 2000 to 2001.

Agricultural exports are difficult to forecast. But barring massive crop failures in foreign markets, it is difficult to construct realistic scenarios showing U.S. agricultural exports returning soon to near the \$60 billion per year level existing when the 1996 Farm Bill was passed. Moreover, even substantial production shortfalls in the United States or elsewhere will not instantly show up in higher U.S. farm product prices because it will take time to work off the large existing stocks.

How Payments under the 1996 Farm Bill were Supplemented. The Congress and Administration supplemented the payments to be made to U.S. farmers under the 1996 Farm Bill to prevent net cash farm income from falling as sharply as crop revenues or agricultural exports. To assess what provisions might be considered for the 2002 Farm Bill, it is useful to review the main types of regular and supplemental government financial support that were made to U.S. farmers in 2000.

The USDA estimates that the \$23.3 billion of direct government payments to U.S. farmers in 2000 will be obtained from the programs listed below.

<u>Program</u>	<u>Percent of Payments*</u>
Emergency Assistance	38%
Loan Deficiency Payments	32
Product Flexibility	
Contracts	21
Conservation Reserve and Other	<u>9</u>
Total	100%

**Source: USDA, "U.S. Farm Programs Benefits: Links to Planting Decisions and Agricultural Markets", Agricultural Outlook, October 2000.*

The largest payment component was represented by emergency assistance. Three supplemental legislative packages passed by Congress and the Administration since October 1998 provided emergency assistance mostly in response to low farm commodity prices. Loan deficiency payments, the second largest payment category, were authorized under provisions provided by the 1996 Farm Bill but were expected to find little use. Loan deficiency payments provided about \$6.4 billion in payments to crop producers for fiscal 2000.

When the 1996 Farm Bill was passed production flexibility contract payments (sometimes called transition payments) were thought to represent the main residual payment to farmers who were expected to "graduate" to a free market. But as noted earlier, weakness in agricultural export markets and global overproduction short-circuited this change. The Conservation Reserve Program, which pays farmers for idling up to 36 million acres of potentially erosion-prone farmland, also was part of the 1996 Farm Bill.

Dairy farmers have received Market Loss Assistance Payments and extensions of the dairy price support program in the past two years. The most recent and largest of the Market Loss Assistance Payments was authorized under an Agricultural Appropriations bill signed into Law by President Clinton in October 2000. Under the program, the USDA expects to make \$650 million in payments to dairy producers to partially offset effects of low milk prices. The capped payments will be made at the rate of \$0.6468 per hundredweight for a maximum of \$25,225 per producer.

Under the 1996 Farm Bill the dairy price support program was scheduled to end on December 31, 1999. In a second one-year extension, the 2001 Agriculture Appropriations Bill extended the dairy price support program through December 31, 2001 at its current level of \$9.80 per hundredweight for 3.5 percent butterfat milk.

The federal government supports the agricultural sector by means in addition to direct payments to farmers. Thus, in 2000 the federal government provided support to the agricultural sector through crop insurance premium subsidies, marketing loan gains, and price supports for sugar, peanuts, tobacco, and as noted above, dairy.

In summary, the 1996 Farm Bill failed to provide politically acceptable levels of income for U.S. farmers. The export market, in particular, failed to deliver results hoped for by architects of the 1996 farm legislation. Other events conspired to drive prices to exceedingly low levels for products as diverse as hogs, cranberries, and apples, creating demands for assistance from producers

of these commodities. Prior to the last year or so, producers of these commodities had little received little support from government programs.

Emergency assistance and other supplements to the 1996 Farm Bill prevented sharp reductions in farm income and farm asset values. Partly because of the assistance package and lender and borrower caution, U.S. farm debt levels did not increase much during the late 1990s and 2000. The USDA estimates that farm debt-to-equity and farm debt-to-asset ratios will rise by less than 5 percent from 1996 to 2000. U.S. farm real estate asset values increased by about 13 percent from 1996 to 2000, reflecting impacts of the farm assistance packages, demand for farmland for non-farm uses, and a host of other developments. In the U.S. Corn Belt, farmland prices tended to move irregularly sideways in the late 1990s. While assistance measures helped to keep farm incomes from falling precipitously, the measures also produced price signals that prevented cutbacks in the production of surplus farm products.

Agricultural Policy Provisions that Might Emerge in the 2002 Farm Bill

Forecasting the nature of the next major Farm Bill is fraught with obvious difficulties. However, if the history of previous Farm Bill debates is useful as a guide, the new farm legislation probably will reflect the following considerations:

- Farmers will not willingly return to acreage reduction programs and other farm program provisions that strip them of the ability to decide what and how

much to produce. Farmers like the “Freedom to Farm” provisions that gave them discretion about how much of the different crops to plant each year.

- Policymakers (and probably many farmers) will be reluctant to return to high non-recourse loan rates that reduce crop exports. While agricultural exports are not the powerful engine supporting crop prices they once were, they are still sufficiently important that policymakers will be reluctant to do things that would price U.S. crops out of world markets.
- While loan deficiency payments for crop producers required larger than anticipated budget outlays under the 1996 Farm Bill, those provisions provided support to crop producers without pricing farm commodities out of world markets. Hence, policymakers may favor them.
- While they will get an extensive hearing in the Congress, supply control measures for major crops and livestock products are likely to find limited use in the next Farm Bill. The economic inefficiencies associated with supply controls are likely to make them difficult to sell to the diverse producer groups in most of agriculture.
- Programs that produce negative spillovers onto producers of products other than the object of the legislation will be a tough sell. Thus, beef producers will strongly resist dairy herd buyouts or related programs that increase competing market supplies of beef.
- Farmers who received temporary government assistance in the late 1990s and 2000 (e.g. hog producers, cranberry producers, apple producers, etc.) are likely to seek continued government support in some form.
- Although it is difficult to tell just how binding this constraint will be, federal budget outlays for farm programs probably will be constrained to a greater extent than in the late 1990s and 2000. While federal budget surpluses likely will exist in 2002, tax cuts, Social Security reform, Medicare reform, and other claims on the federal budget will limit spending on farm commodity programs. Among other things, budget constraints will encourage policymakers to cap total payments to individual producers.
- Major reforms in federal milk orders that would place dairy farmers in the Upper Midwest in a more favorable competitive position will continue to be elusive. Small adjustments to pricing provisions and other fine-tuning of the orders will be feasible.
- Policymakers will view favorably farm program expenditures that produce environmental benefits.

Where Do These Considerations Leave Policymakers?

Obviously, a lot can happen to affect farm policies between now and late 2001 and 2002 when development of the next major Farm Bill begins in earnest. But a few things are likely to shape the 2002 Farm Bill. A return to acreage reduction programs, target prices, and deficiency payments would be both expensive in terms of budget outlays and objectionable to producers who like “freedom to farm.” Supply control measures are getting attention from dairy groups but there appears to be little agreement about how supply control measures might be implemented in ways that would satisfy groups as diverse as large, expanding producers and smaller producers.

The only “slam dunk” prediction that can be made is that expansion of the Conservation Reserve Program beyond 36 million acres is likely. This program, if properly administered, reduces soil erosion, provides a limited amount of broadly acceptable supply control, and pays farmers for providing services that enhance the environment. These are strong pluses.

Perhaps a “muddling through” strategy will emerge that, in many respects, will represent a continuation of the patchwork of programs similar to that used under the 1996 Farm Bill. Measures that might receive increased emphasis include expenditures to increase production of value-added farm

crops, expand farm exports, foster rural development, foster exit from the farm sector, and increase antitrust scrutiny of agribusiness mergers.

The “Holy Grail” sought in the next Farm Bill will be measures to allow market prices to facilitate supply adjustments while providing politically acceptable farm incomes. But this will be a difficult task. In practice, effective decoupling of payments to farmers from production decisions has proven to be difficult.

A Summary Comment

The U.S. economy is in transition, moving toward slower, probably sustainable, growth. The directions that the U.S. farm economy and farm policy are taking are less clear. The 1996 Farm Bill was an experiment that, for a number of reasons, failed to produce results hoped for by the legislation’s architects. However, the legislation let a genie out of the bottle. It gave farmers a taste of freedom to farm (and emergency assistance payments) and they liked it. Producers who hadn’t received much government support before the late 1990s and 2000 got a taste of it and they will want to keep it coming. This suggests that farm legislation will not revert to legislation that existed before the 1996 Farm Bill and supplements to that legislation. Neither are policymakers likely to have a stomach for bold experiments akin to the 1996 Farm Bill. This leaves “muddling through” as the likely option.

Smart Growth and Wisconsin Agriculture

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Introduction

Relatively low and volatile agricultural commodity prices have placed increasing pressure on the state's farm sector in the 1990s. At the same time, an unusually robust non-farm economy has generated significant demand for rural housing and recreational land development. The result has been a dramatic acceleration in the rate of farmland conversion to non-farm uses over the last 15 years.

Non-farm growth pressures have affected many other aspects of Wisconsin's urban and rural landscape as well. To help communities grapple with these new challenges, the state legislature passed a new "Smart Growth" law in the fall of 1999 (1999 Wisconsin Act 9). This law encourages municipalities to write and use new "comprehensive plans" to guide all their land use decisions by January 1, 2010. Under the statute, one required element of comprehensive plans will be an assessment of agricultural resources and a plan for their future use or protection.

This article assesses the significance of the new Smart Growth legislation for agriculture in Wisconsin. I begin with an overview of trends in farmland loss in

the state. Because agricultural planning had a long history in the state even before the Smart Growth law, I examine some of the political and economic challenges of writing and implementing effective land use plans in rural communities. I conclude with a detailed consideration of what the Smart Growth law will require concerning agriculture, and explore some of the ways in which it could impact farms, the general agribusiness economy, land markets, and rural communities in Wisconsin.

Farmland Losses in Wisconsin

Wisconsin has long been one of the nation's most important agricultural states. It currently ranks in the top 10 in the number of commercial-scale farms, production of milk, acres of corn and hay, and net cash income from farming (USDA, 1999a). Despite the continued importance of agriculture to its economy and rural communities, Wisconsin's farm sector has been in a state of decline since the early 1980s. Between 1982 and 1997 overall farm numbers have fallen by 20 percent, and the number of dairy farms has fallen by almost half (Buttel, 1999). While declines in farm numbers have been a long-term historical trend in the state, increases in productivity and expansion among the

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remaining farms are no longer adequate to compensate for these losses. As a result, the value of total gross farm sales (adjusted for inflation), volume of milk production, and acres used for farming have all either stagnated or declined over the last 15-20 years (USDA, 1999a; Jackson-Smith, 1996; Jackson-Smith and Barham, 2000).

Meanwhile, during the 1990s there has been a steady and almost unprecedented period of economic growth and prosperity in Wisconsin's non-farm sector. Real wages and personal income have increased, unemployment rates are among the nation's lowest, and population and housing growth have been particularly high surrounding many of the state's urban centers (WDOC, 1998).

The combination of a depressed farm economy and a vibrant non-farm sector has placed pressure on landowners to convert farmland to other uses.

Generally speaking, non-farm development can negatively impact the viability of commercial farms in many ways. Certainly, non-farm residents living in close proximity to working farms can increase nuisance, trespass, and vandalism complaints. Increased traffic problems can result from commuters sharing the road with agricultural machinery. As land gets split into smaller parcels, remaining farmers are forced to deal with more landlords and travel longer distances to access rented fields. Increased demand for public services associated with non-farm development can also drive up local property tax rates and make it increasingly costly for farmers to

continue to own land.⁵ Perhaps most important for the long-run health of the farm sector, non-farm demand usually causes farmland values to soar far above their value as agricultural resources and thus make it virtually impossible for young people to afford to buy a farm of their own.

From a farmer's perspective, however, the inflated land value associated with development pressure is a double-edged sword. Certainly high land prices make it more difficult to enter farming or expand existing farms. However, appreciated land values also enable older or exiting farmers to realize larger financial gains when they sell their farmland assets. Proceeds from selling farmland are often the only source of retirement funds for older farm families.

Rates of Farmland Loss in Wisconsin

Although most observers agree that there has been a significant decline in the amount of Wisconsin land used for farming over the last 20 years, precise estimates of the magnitude of that decline differ somewhat. Table 9 presents a number of different estimates of the acres of farmland in Wisconsin for selected years between 1978 and 1997.

The most complete inventory of farming operations is conducted every 5 years through the U.S. Census of Agriculture. Census data are collected from all farms in the state that produced or sold goods worth at least \$1,000 in the Census year. Census estimates suggest that the state

⁵ It should be noted, however, that recent implementation of a Use Value Assessment law for farmland should buffer the impact of development-induced rising property taxes on farmland owners (Sheil, 1996).

Table 9: Estimated Acres of Farmland In Wisconsin, 1978-1997					
	Farmland (Census)¹	Harvested Cropland (Census)²	Farmland (WASS)³	Land Taxed as Farmland (WI-DOR)⁴	
Acres of Farmland					
1978	17,838,982	10,062,154	18,800,000		<i>n.a.</i>
1982	17,234,127	9,863,051	18,500,000		<i>n.a.</i>
1987	16,606,567	9,335,007	17,700,000		15,289,791
1992	15,463,551	8,843,649	17,300,000		14,809,872
1997	14,900,205	8,625,011	16,800,000		14,167,746
Annualized Net Loss					
1978-1982	-151,214	-49,776	-75,000		<i>n.a.</i>
1982-1987	-125,512	-105,609	-160,000		<i>n.a.</i>
1987-1992	-228,603	-98,272	-80,000		-95,983
1992-1997	-112,669	-43,728	-100,000		-128,425
NOTES:	¹ Census of Agriculture, various years. Includes all farmland operated. ² Census of Agriculture, various years. Includes only harvested cropland acres. ³ Wisconsin Agricultural Statistics Service estimates, various years.				

lost almost 3 million acres (or roughly 16 percent) of farmland between 1978 and 1997. It is worth noting that the “farmland” reported in the periodic Census of Agriculture includes a considerable amount of land on which crops were not harvested (roughly 42 percent of the total). Because the Census includes all land that is part of a Wisconsin farm operation, a good fraction consists of woodland or permanent pastureland that is interspersed within a diversified farm operation. Hence, while annual farmland losses reported in the Census ranged from 125,000-229,000 acres per year, losses of *harvested cropland* – the kind of land that springs to mind when most people imagine the process of farmland conversion – were in the range

of 44,000-106,000 acres per year (USDA, 1999).

Using different methods, the Wisconsin Agricultural Statistics Service consistently reports somewhat higher total farmland acreages for the state than does the Census (WASS, 2000). Because WASS also finds somewhat slower annual and total net losses, the gap between the two estimates appears to be increasing over time. Both Census and WASS estimated that roughly 100,000 acres of farmland were taken out of production each year during the mid- to late-1990s.

While Census and WASS statistics suggest that high farmland loss rates have been with us for at least the last 20

years, estimates from the state Department of Revenue indicate a notable acceleration in the sale and conversion of farmland in the last 5-10 years. The final column in Table 8 reflects the total acreage in Wisconsin that is determined by local property tax assessors to be in agricultural use. These tax records suggest that farmland loss between 1992-1997 increased by 34 percent over the previous 5-year period. Although not shown on Table 9, reports of Wisconsin farmland sales (WASS, 2000) suggest that over 75,000 acres of agricultural land were sold and converted to non-farm uses each year between 1993-1997. This represents nearly three times as many acres as were reported sold and converted between 1983-1987 (and 20 percent more than between 1988-1992).

Overall, there has been a growing public concern that Wisconsin is at risk of permanently losing some of its best agricultural soils to pressure from both urban sprawl and rural recreational land development. These discussions have been highlighted by the release of a recent national study by the American Farmland Trust that identified the southeastern quarter of the state as the third most threatened agricultural area in the country (Sorenson et al., 1997).

Where does all that farmland go?

While significant amounts of cropland and pasture are withdrawn from agricultural production each year, it is not obvious what this farmland is being used for after conversion. Data from the USDA National Resource Inventory (USDA, 1999b) suggest that urbanization is now responsible for the majority of farmland converted (See

Figure 25). In this context, urbanization refers to both “hard urbanization” involving the construction of relatively densely clustered residential homes or other commercial and industrial uses, as well as “rural” urbanization involving less densely packed rural residential properties. In addition, a good deal of farmland has grown up in loosely managed forests and grasslands. This suggests that efforts to slow the overall conversion of farmland in the state will need to address both near-urban sprawl as well as the more diffuse process of rural residential and recreational land development.

Challenges of Agricultural and Rural Planning

Agricultural Planning in Wisconsin

The recently passed Smart Growth law is certainly not the first time that Wisconsin state and local governments have attempted to develop plans to protect farmland from development. Since the 1970s, Wisconsin has had a strong reputation as a national leader in programs designed to protect farmland (Daniels and Bowers, 1997). The state initially adopted a comprehensive Farmland Preservation Program (FPP) in 1977, which included two complementary approaches to protect prime agricultural soils from non-farm development (Barrows and Yanggen, 1978).

The first approach provides direct tax relief to farmers. This is done through an income tax credit program that offers credits on state income taxes to farmers who agree to enroll their farmland in the FPP program. Enrollees must refrain from selling or converting their land to

non-farm uses. Along with the tax credits, the state FPP also provides incentives for local governments to adopt agricultural land use plans and exclusive agricultural zoning (EAZ) ordinances (Runde, 1999). The general idea is to use tax credits to attract interest in a process of more general land use planning in rural places, with a particular emphasis on identifying important agricultural resource areas and protecting them from future development. In order to qualify for the tax credits at all, farmers had to live in a county that had an agricultural land use plan. As a result, by the early 1980s virtually every county had adopted a plan that met the standards of the statute (Emelock, 1989). In addition, to receive full credits under the tax relief provisions, farmers have to live in a town that has adopted an exclusive agricultural zoning ordinance (or at least recognized and functioned under a county EAZ ordinance).

Because of the FPP incentives, many town governments now have adopted land use plans (Ohm and Schmidtke, 1999) and EAZ ordinances. A review of state records suggests that almost 70 percent of towns now operate under some type of general zoning ordinance, and over 40 percent of towns enforce specific EAZ ordinances, either themselves, or through their county. The most active counties and towns have periodically revised their land use plans and ordinances to conform to shifting community priorities and concerns. Others still operate under the terms of their original plans, most of which were adopted between 1979 and 1981.

The Social Context of Agricultural Planning

It is worth noting that maintenance of agriculture – particularly commercial scale farms – is typically a central goal of most town land use plans in Wisconsin. Indeed, statewide polls show that the overwhelming majority of Wisconsin residents are committed to the idea that protecting farming and agricultural landscapes is a top land use planning priority (On Common Ground, 1999).

However, attendance at any town board meeting quickly reveals an interesting irony of the local land use decision-making process. In most public forums, it is often the non-farm residents (many of whom recently moved to their rural homes) that are the most ardent supporters of policies discouraging farmland conversion, while the older farmers who attend such meetings frequently seek to preserve their rights to sell their lands however they see fit as they plan for their own retirements. In essence, a traditional rural ethic respecting individual property rights and the “independence” of family farmer decision-making has begun to conflict with a growing public and private interest in regulating the impacts of farm landowner decisions on the quality of life in the community as a whole.

To be fair, the interests and priorities of “farmers” are usually much more complex. Surveys have shown that the farm community as a whole is quite sympathetic to the idea that some restrictions should be placed on the pace and type of development that occurs in their communities (Jackson-Smith, 2000). However, a sizeable majority of

farmers also think that farmers should be compensated for agreeing to limit their options to sell land as they see fit. Moreover, surveys and informal conversations reveal that nearly all Wisconsin farmers have a desire to see farming continue on their land after they retire – if they thought it could be done profitably.

Farmer views are also affected by the age of the farm operator and the type of farm they operate. While older farmers have a deep interest in protecting the value of their land investments, younger and mid-career farmers recognize that higher land prices can adversely impact the viability of their own farms. Large commercial farmers – who have made investments in the future of their industry – tend to be more supportive of restrictions on development than do operators of part-time or sub-commercial farms.

Non-farmers also represent a much more heterogeneous group than they are often given credit for. While an increasing number of rural citizens have decidedly urban backgrounds, the vast majority of Wisconsin's non-farm rural residents are long-term residents who have personal ties to the farm sector. As a result, they frequently share the same cultural values and political viewpoints as their farming neighbors, and also express conflicting views about the necessity of community regulation of local land use decisions.

Lessons learned from 20 years of Farmland Preservation Planning in Wisconsin

Wisconsin's Farmland Preservation Program has been specifically criticized on a number of grounds. Initially, to

gain political support for the program, farmers in every county across the state were made eligible for tax relief, spreading a limited total amount of public investment across a relatively large number of potential recipients. This lack of targeting makes fewer dollars available in the regions where the threats to agricultural land are greatest. More importantly, the original per acre tax relief benefits have not been indexed to inflation. As a result, the value of the credit is increasingly small relative to the financial rewards gained from selling the land for development. Indeed, in most of the urbanizing and near-urban counties in Wisconsin the net benefits of converting farmland to non-farm uses may exceed the annual value of the FPP credit by ten to twenty times or more. The recent move towards use value assessment of farmland is likely to further decrease the tax credit benefits. Finally, FPP payback provisions have not served as much of a disincentive for pulling land out of the program.

Given the limitations of tax-credit programs to saving farmland, local municipalities have increasingly relied on the use of regulatory approaches to prevent unwanted development and to protect agricultural and natural resources. Typically these regulatory programs involve some combination of land use planning and zoning. Indeed, most Wisconsin town or county board meetings in the last five years have been dominated by citizen requests to divide or rezone agricultural lands for the purposes of single home development. In most cases, it is the local land use plans, combined with building permit, land division, and zoning ordinances, that provide guidance to those who must make decisions on these requests.

In principle, planning and zoning should provide a firm line of defense for the preservation of farmland. Communities identifying farmland preservation as a goal can (and usually do) establish restrictive “agricultural zones” that prohibit most residential or non-agricultural commercial development. Assuming that these ordinances are rigorously enforced – i.e., that waivers, variances, or rezoning are rare – it is likely that there will be noticeably less development on protected agricultural lands.

In practice, two sorts of problems are often encountered with planning and zoning for agriculture. First, though land use plans may state that preservation of agricultural lands is a top priority, local government officials may find it difficult to turn down all development proposals that would infringe upon agricultural property. This is particularly true in rural areas when the farmland owner is a former commercial farmer with few retirement savings, and someone who has been a longtime resident of the area with close ties to the local officials. Many farmland preservation plans are also written without a full consideration of the complexity associated with enforcement or implementation, particularly when planning is done simply to meet state or federal requirements. In such cases the plan may not be used as a binding document for making land use decisions.

A second potential problem with rural and agricultural planning and zoning is reflected in the conventional practice of large-lot zoning to protect farming and other natural resources. In Wisconsin, for example, state law has required

minimum lot sizes of at least 35 acres in order for property to be zoned for “exclusive agriculture” and hence to receive maximum income tax credit benefits. The logic behind large-lot zoning is that 35 or 40-acre parcels will be unattractive to non-farm rural homebuyers, and that these large parcels have the potential to be viable agricultural units. In addition, large lot sizes help maintain relatively low overall population density and also preclude unwanted concentrations of new houses in a confined area.

After twenty to thirty years of experience, large-lot zoning approaches have been roundly criticized on a number of grounds. Initially, it is clear that modern agriculture requires significantly more acres, often upwards of 300-400 acres per farm, than typical minimum lot sizes allow to be economically viable.⁶ Moreover, it has been shown that 35-40 acre parcels are still quite attractive to non-farm residents seeking to build a home in the country, particularly where rural land prices are low compared to prices for lots within or on the margins of urban areas. In Wisconsin, “the 35-acre rule” associated with the FPP-EAZ statute has encouraged many municipalities to approve a significant number of rural residential homes on relatively large lots. In aggregate, it is likely that significantly more farmland acreage has been withdrawn from agriculture – in large 35 or 40 acre chunks – because of the large

⁶ Of course, some types of high-value, low-acreage agriculture (like market gardening, greenhouses, and horticultural operations) can be viable on much less than 35 acres, but these are usually economically and numerically much less significant than traditional farm commodity producers.

minimum lot size requirement than would have been the case if the law had allowed a similar number of developments but permitted them on smaller parcels. Even when non-farm landowners choose to rent out their excess farmland, parcelization of the landscape in the long run makes farming more difficult and impractical for the remaining commercial farm operators.

Along with passing the Smart Growth law, recent changes in state statutes also removed the 35-acre criteria traditionally associated with EA zoning. After January 1, 2001 a municipality can decide to have any sized lot in an EA zone. However, this change will still not permit landowners in EAZ areas to do anything with their land that may be incompatible with surrounding agricultural uses. Moreover, to qualify for receiving tax credits under the FPP, a landowner will have to have at least 35 acres in their parcel.

A recent statistical analysis of spatial patterns of farmland loss suggest that the Wisconsin Farmland Preservation Program (FPP) income tax credits have produced some of their intended benefits (Jackson-Smith and Bukovac, 2000). Overall, the rate of conversion was lower in towns where more people had enrolled farmland acreage in the FPP and claimed it on their taxes. Moreover, the benefits from FPP income tax credits are most clear in towns that have dense populations already and that face the highest rates of housing development. Meanwhile, the presence or absence of general zoning or exclusive agricultural zoning ordinances in Wisconsin towns did not appear to be systematically related to the pace of farmland conversion.

That does not necessarily mean that planning or zoning cannot be useful tools in the effort to save farmland. Indeed, the results of a parallel in-depth study of farmland losses in Dane County suggest that strong local land use plans and ordinances are a necessary but not sufficient condition for an effective farmland preservation policy (Bukovac, 1999). In particular, the most important factor influencing a town's ability to slow farmland loss is its willingness to strictly enforce the language in their plans and ordinances. Towns with relatively strong farmland protection language in their land use plans, but who frequently approved rezoning proposals that were inconsistent with their stated policies typically lost farmland much more rapidly. Meanwhile, towns with relatively modest plan language, but who were able to muster the political will to consistently deny requests for development that violated farmland protection provisions fared relatively well. Those with no plans or ordinances tended to consistently lose farmland rapidly, though not necessarily faster than those failing to enforce their local plans.

Wisconsin's New Smart Growth Law

The passage of Wisconsin's "Smart Growth" statute in the fall of 1999 provides both a structured framework and a new opportunity for all Wisconsin communities to engage in agricultural planning. The "Smart Growth" title of the law comes from the observation that many past planning and zoning activities have promoted patterns of residential and commercial development that consume large amounts of land, increase fiscal stress on communities, and

otherwise adversely affect the quality of life in the state by creating eyesores, traffic problems, and damaging natural resources. The basic principles of smart growth include reinvigorating development within urban areas, reducing the average lot size of housing development, protecting natural resources, and encouraging development along existing (or planned) transportation corridors. Many states and municipalities have embraced smart growth principles across the United States in recent years.

From agriculture's point of view, the new statute does a number of key things. First, it provides a legal definition of a *comprehensive plan*. These plans are "comprehensive" mainly because they simultaneously cover the full range of topics that traditionally have been the focus of disconnected planning efforts. Specifically, agricultural planning will increasingly be integrated into other related planning activities like housing, environmental, and economic development planning. Second, the law requires a more explicit public participation process during plan development and plan implementation. Finally, and perhaps most importantly, if a local municipality wants to make any kind of decision that affects land use, the law requires that by January 1, 2010 they must adopt a legal comprehensive plan and ensure that all their other land use decisions are consistent with that plan. The legislation provides some financial assistance to local municipalities (in terms of planning grants) and includes provisions for paying incentives – or "smart growth dividend aids" – to communities that have successfully adopted comprehensive plans meeting certain basic standards.

To meet the requirements of the statute, comprehensive plans will have to include at least 9 key elements:

- a) Issues and opportunities
- b) Housing
- c) Transportation
- d) Utilities and community facilities
- e) Agricultural, natural and cultural resources
- f) Economic development
- g) Intergovernmental cooperation
- h) Land use
- i) Implementation

Since agricultural land represents the dominant land use for the majority of Wisconsin towns and counties – and because most residential and commercial development is likely to occur on agricultural land – it is likely that the Smart Growth legislation will initiate a new round of agricultural planning activity in the state. Agriculture is specifically mentioned in the fifth required element, which requires:

"A compilation of objectives, policies, goals, maps and programs for the conservation, and promotion of the effective management, of natural resources such as groundwater, forests, productive agricultural areas, environmentally sensitive areas, threatened and endangered species, stream corridors, surface water, floodplains, wetlands, wildlife habitat, metallic and nonmetallic mineral resources, parks, open spaces, historical and cultural resources, community design, recreational resources and other natural resources."

Although the FPP encouraged most counties and many towns to develop agriculturally oriented land use plans, the new Smart Growth law will probably require these same municipalities to revisit their plans and policies. In fact, it is likely that many municipalities will seek to adopt a new comprehensive plan that also meets the requirements of agricultural planning provisions of the original Farmland Preservation statutes. At the same time, many communities will be thinking through their agricultural planning and policies for the first time.

In both cases, the biggest change resulting from the new law is the fact that new comprehensive plans will eventually become legally binding documents that have to be used as the basis for all future land use decisions. This is a dramatic departure from past practices, where agricultural plans were often seen as general guidelines with little real enforcement power, and even sometimes forgotten or ignored outright.

Typically an agricultural planning process will go through several key steps: (i) conducting an analysis of recent agricultural trends and the current situation; (ii) identifying a set of goals and objectives that reflect community and individual values regarding the future use of agricultural land; (iii) developing policies that help guide future land use decisions; and (iv) writing “implementation tools” – such as zoning ordinances, land division and subdivision ordinances, driveway and building permit procedures, and other local regulations.

While agricultural planning is a required subcomponent of just one of the nine elements in a Smart Growth

comprehensive plan, in most places agriculture is likely to permeate many other aspects of a well-written plan. For example, any assessment of the “issues and opportunities” in a rural agricultural community is likely to engage the debate over protecting farmers and farmland from non-farm development. Moreover, the subcomponents of comprehensive plans that address the protection of local natural resources will inevitably need to consider farm issues, since agricultural land use has significant impacts on the environment. In a different sense, the economic development plan element in many communities may well explore ways that local municipalities can facilitate farm modernization, local value-added farm commodity processing, and creation of new markets for local agricultural products. Since housing development on farm fields appears to be a primary land use concern in most parts of rural Wisconsin, any successful housing plan element will need to address how an affordable and adequate supply of housing can be provided while still protecting agricultural resources. Finally, because agricultural lands are at the center of many land use and intergovernmental squabbles, agriculture is likely to be a prominent component of the required land use and intergovernmental elements of Smart Growth plans.

It is clear that the Smart Growth law will generate a significant new round of agricultural planning in Wisconsin. However, it is not clear that communities are well equipped to meet the challenges discussed above. Most rural towns and many rural counties rely on citizen volunteers and lack detailed information about the status of farming and direction of agricultural change in

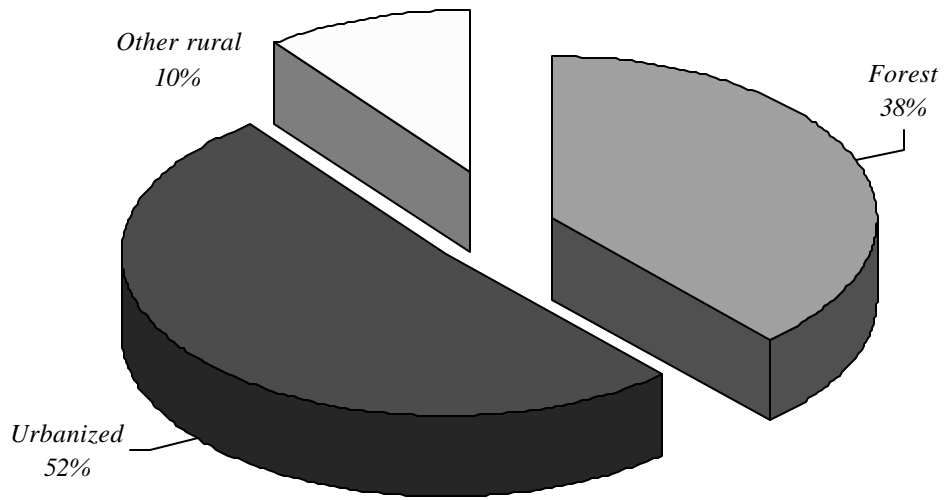
their area. Even when they identify agriculture as something they want to protect, it is likely that they will need new and better information to help them clarify their goals and evaluate different policy approaches to protecting farmers and farmland. Given the limited successes associated with agricultural planning in the past, new data and information, better and more realistic land use policies, and support from both the public and private sector are critical to future efforts. The greatest challenge will be to devise agricultural planning approaches that balance the interests of individual farmland owners on the one hand, and those of their neighbors and the community as a whole on the other. Since comprehensive planning does not require any specific kind of goal or policy (all it requires is that certain issues get examined and considered, it is likely that each community will want to find its own "comfort-zone" that reflects its own situation and unique mix of values and beliefs.

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Figure 25: Percent of all Cropland and Pasture Converted out of Agriculture in Wisconsin, 1992-1997, by New Land Use



The Wisconsin Agricultural Economy: A Broader Perspective

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Wisconsin has been experiencing a sustained period of economic growth. In the 21-year period between 1977 and 1998 (the most current year reported), personal income grew by 313 percent in Wisconsin. This growth level compares favorably to the Eastern Plain States (Ohio, Michigan, Indiana and Illinois), where personal income grew by 320 percent, and the Western Plain States (Minnesota, Iowa, and the Dakotas), which grew by 274 percent. A similar pattern emerges when examining Gross State Product (GSP). Wisconsin's GSP grew by 286 percent between 1977 and 1998 while the Eastern and Western Plain States grew by 288 percent and 254 percent respectively. While the recession of the early 1980s was particularly hard on Wisconsin, the most recent recession of the early 1990s was barely felt in most of Wisconsin. Although there have been recent concerns about the quality of the jobs being created in this period of economic growth, in particular wage levels, the Wisconsin economy has been growing as strong if not stronger than neighboring states.

The agricultural economy, unfortunately, has not experienced the same level of prosperity over the past 20-plus years. Farm income historically has been volatile, subject to constantly changing domestic and foreign farm policies, weather, and structural changes within the industry itself. This volatility is clearly evident when examining growth

patterns for farm income and farm gross state product over the past twenty years.

Based on a simple five-period moving average, gross state product from farms grew by about 25 percent from 1977 to now, a growth rate which is significantly slower than Wisconsin's overall economic growth. Again using a simple five period moving average, personal income attributed to farming, however, experienced more than a 25 percent decline. When directly comparing the overall growth in Wisconsin total personal income to farm-related personal income (Figure 26), a disturbing picture becomes readily apparent: Wisconsin's farming economy has not taken part in state's broader economic growth. In other words, although farm output in Wisconsin is growing modestly, farm income is declining.

The fact that net farm income has been declining as total farm output has been increasing is evidence that farm profit margins are narrowing over time. In the early 1980s the average profit margin for Wisconsin farmers was around 25 percent; allowing farmers to earn roughly 25 cents of profits per dollar of output. Farm profit margins in recent years have fallen to roughly 15 percent. This 10-cent decline in the profits farmers earn per dollar of total output is the result of falling output prices and rising input costs.

The erosion of farm profit margins is an outcome of the competitive forces that are at work in agriculture. Farmers attempting to survive in the industry are simultaneously paying higher prices for inputs and boosting production in an attempt to raise or maintain their incomes. This increase in farm production puts downward pressures on farm commodity prices, which ultimately translates into even narrower farm profit margins.

The narrow profit margins that currently exist in farming are too low to sustain all the farm businesses that are currently operating in the state. But farm exits are not likely to improve profit margins in the near term. Farmers who remain in business will acquire the land, cows, and other assets of exiting farmers and then use these assets to maintain output. The margins earned on this output will continue to be low, but sufficient to support those farms that produce large volumes of output. This movement to large-scale farming will likely continue as long as margins remain tight.

In addition to gross state product (i.e., net value added) and farmers' income (i.e., personal income), a common measure of industry growth is the number of firms, or proprietors, in operation. As noted in Figure 27, between 1977 and 1998 the number of non-farm proprietors increased by about 63 percent. The number of farm proprietors, however, declined by about 19 percent.⁷

⁷ This reported decline in farm numbers masks larger declines in the number of farms for which farming is the principal source of income. In recent years, farm numbers have actually increased, as rural more residences have

Increasing farm sales coupled with a declining number of farm proprietorships is a reflection of the consolidation that is occurring in farming not only in Wisconsin, but also across the nation. The Eastern Plain States experienced about a 25 percent decline in the number of farm proprietors while the Western Plain States experienced a 23 percent decline. Declining farm numbers coupled with increased farm sales, unfortunately, does not necessarily translate into higher per proprietor income. For Wisconsin farm proprietors, the five-year average per proprietor income between 1977 and 1981 was \$13,400 but only \$8,100 for the five-year average between 1994 and 1998. If one adjusts for the affects of inflation, the decline in per farm proprietor income is even more pronounced.

The low proprietary incomes reported for Wisconsin farmers suggest that many farm households need other sources of income. According to USDA, roughly 87 percent of farm household income for farms in the Lake States region (which includes Wisconsin) was from non-farm sources in 1995.⁸ This heavy dependence of farm households on non-farm income is not surprising in light of the fact that average farm earnings are well below the U.S. average household income, which was reported at roughly \$45,000 in the 1995 Current Population Survey of the Bureau of the Census.

technically become "farms" because sales exceeded definitional standards.

⁸ *Structural and Financial Characteristics of U.S. Farms, 1995: 20th Annual Family Farm Report to the Congress* (December 1998)

The 1997 Census of Agriculture provides additional evidence that Wisconsin farm households are increasingly relying on non-farm income to supplement low farm incomes. Census data show that almost 40 percent of Wisconsin farms had operators working at least 200 days off their farms.

If farm profit margins continue to be tight, smaller farm operators will be forced to seek off-farm employment if they intend to stay on their farms. The extent to which these farmers are successful in gaining off-farm employment depends on the strength of Wisconsin non-farm economy. A robust non-farm economy, such as we have seen in recent years, should give farmers good opportunities to get the off farm jobs they will be seeking. Alternatively, a slow down in the non-farm economy could make it difficult for farmers to gain employment and earn the off-farm incomes they need to supplement their farm business earnings.

An integral part of the Wisconsin agricultural economy is the processing sector, referred to as the food and kindred products industry. For Wisconsin this includes cheese plants, vegetable canners and breweries, to name but a few. For the period 1977 to 1998, earnings from the agricultural processing sector increased by 150 percent in Wisconsin, about 158 percent for the Western Plain States and 117 percent for the Eastern Plain states. Growth in industry output, or industry sales for agricultural processing, is about 150 percent for

Wisconsin, 140 percent for the Eastern Plain States, but significantly higher in the Western Plain States, which showed a 250 percent increase. The accelerated increase in the value of agricultural processing's product relative to earnings in the Western Plain States is reflective of the vertical integration of certain key agricultural sectors such as the meat packing industry. Serious concern has been expressed about the impact that such integration has had on the quality of jobs within the sector. While the simple analysis presented here does not suggest such a concern is warranted for Wisconsin at this time, national trends magnified in the Western Plain States may point to future issues for Wisconsin's agricultural economy.

Comparing overall growth in earnings and gross state product for Wisconsin with growth in the farm production and agricultural processing sectors shows a clear pattern (Figures 28 and 29). As the overall state economy continues to grow, the more moderate growth of agricultural processing and the stagnation of farm production is causing agriculture to contribute an increasingly smaller share to the overall economy. In 1977, farming contributed \$1.9 billion to Wisconsin's gross state product, or about 4.6 percent of the total, and agricultural processing contributed \$1.7 billion or 4.2 percent. In 1998, the most current year for which data are available, farming contributed \$2.5 billion to gross state product or only 1.6 percent whereas agricultural processing added \$4.3 billion or 2.7 percent (Figure 30).

The key to preserving Wisconsin's agricultural processing sector is in the maintenance or growth of the farm sector. Food processors need access to raw agricultural products. Where processors get those raw products depends on Wisconsin farmers. If

farmers can meet the needs of processors, processors will continue to do business in the state. If Wisconsin farmers fail to meet the raw product needs of processors, then processors will scale back or shut down their Wisconsin operations.

A note on measures of economic activity

This article uses the concept of Gross State Product (GSP) to permit an “apples to apples” comparison of farming and food processing with other sectors of the state's economy. According to the U.S. Bureau of Economic Analysis, the federal agency responsible for estimating GSP:

GSP is the value added in production by the labor and property located in a state. In concept, an industry's GSP, referred to as its “value added,” is equivalent to its gross output (sales or receipts and other operating income, commodity taxes, and inventory change) minus its intermediate inputs (consumption of goods and services purchased from other U.S. industries or imported). Thus, GSP is often considered as the state counterpart of the nation's gross domestic product (GDP). In practice, GSP estimates are measured as the sum of the distributions by industry and State of the components of gross domestic income – that is, the sum of the costs incurred and incomes earned in the production of GDP.

GSP is *not* value of production or industry shipments, nor is it the same as other measures of value added (value of output less cost of goods sold). For instance, cash receipts from Wisconsin farm marketings in 1998 were \$6.1 billion. This compares to GSP from farming of \$2.5 billion. The Census of Manufacturers shows the *value of shipments* for Wisconsin food processing firms in 1997 at \$20.6 billion, 17.5 percent of the total value of shipments for all Wisconsin manufacturing industries. The Census further showed *value added* by this sector in 1997 at \$6.7 billion, 12 percent of the state total. In contrast, GSP from the food and kindred products sector was only \$4.3 billion in 1998.

Figure 26: Trends in Wisconsin Income

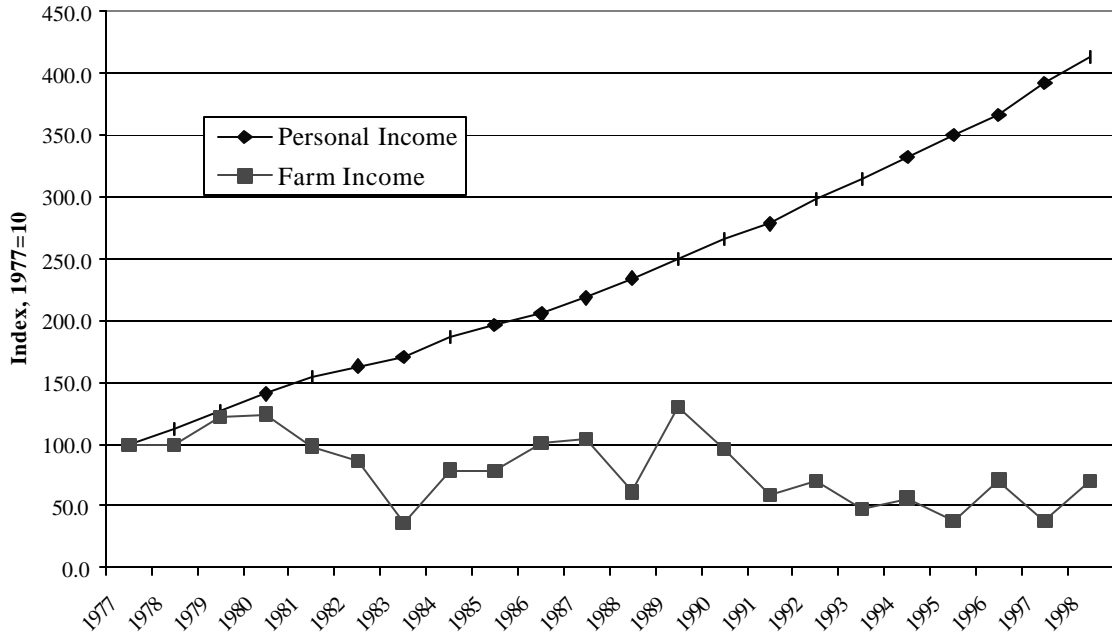


Figure 27: Trends in Number of Wisconsin Proprietors

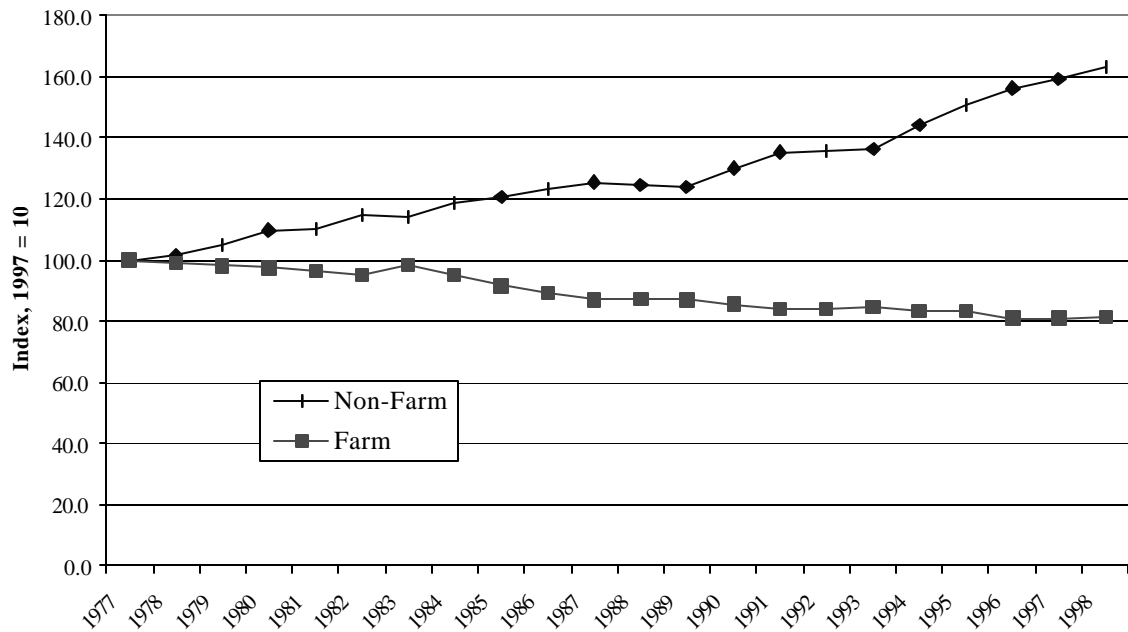


Figure 28: Trends in Wisconsin Earnings

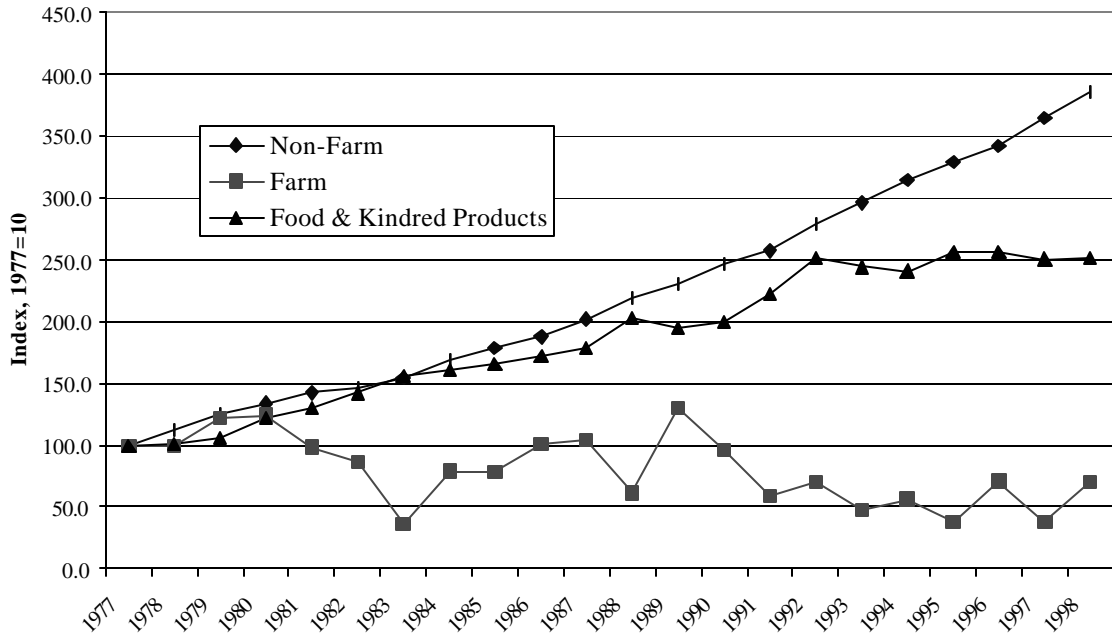


Figure 29: Trends in Gross State Product

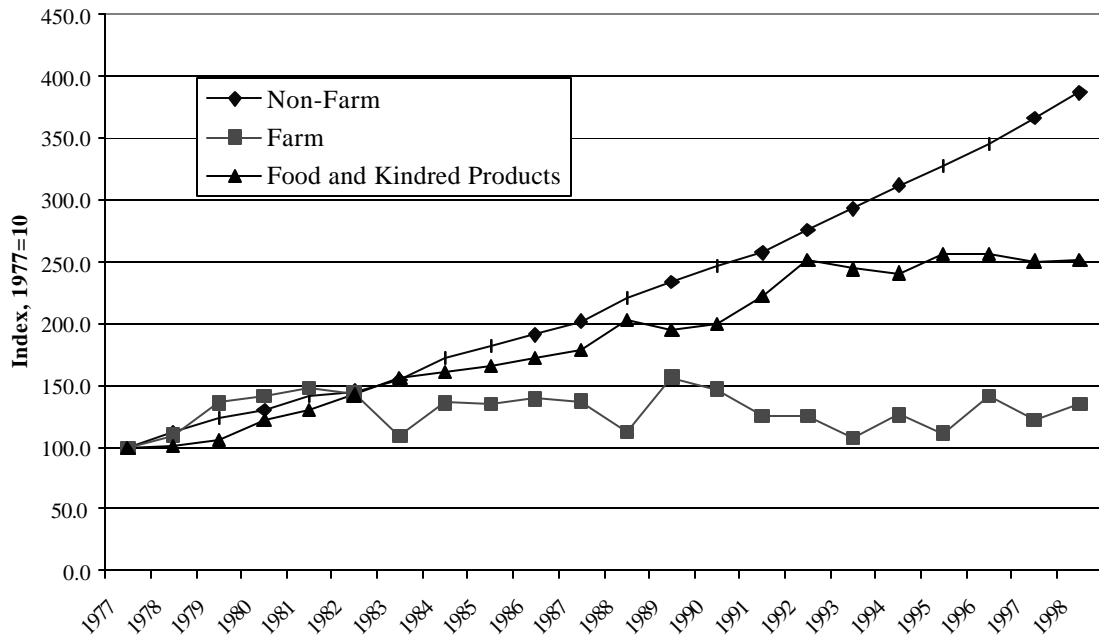


Figure 30: Distribution of Wisconsin Gross State Product

