



Wisconsin Agricultural Land Prices

2014

High milk prices and low interest rates combined to drive Wisconsin agricultural land prices higher again in 2014. While there is great variation in valuation from one sale to another, the WI Department of Revenue transfer return data confirms that agricultural land values have increased in most of the state.

Ag land
values up 5%
in 2014.

Wisconsin Agricultural Land Prices 2009-2014

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The average price of agricultural land sold in Wisconsin in 2014 reached \$3,935. This was a 5% increase from 2013. The total acres sold declined by 5% and the number of sales were down by 8%. Strong dairy prices and low interest rates helped to create new record highs. Prospects for 2015 are less clear.

Farmland is the most valuable asset on any farmers' balance sheet. However, estimating land values is always difficult. There is nothing more unique than an individual parcel of land. While many thousand homes are sold each year, only a small fraction of the state's agricultural land changes hands on the open market in any given year.

Surveys of farmers, bankers, realtors and appraisers are sometimes used to estimate changes in land values. While easy to conduct, these opinion surveys can be hard to interpret. News of high priced sales travels quickly – but these sales are often the exceptions and not reflective of the market.

Fortunately, the Wisconsin Department of Revenue (DOR) collects an alternative source of agricultural land sales data. A transfer return tax is collected each time a property is sold, and a transfer return form is collected with the tax. Information from these transfer return forms is the source for this paper.

Wisconsin's agricultural land values are low compared to some of our highly productive neighboring states – but a larger portion of our land is not suitable for continuous row crop farming and more of our land is used for forage production, woodlots and pasture. The shorter growing season in northern Wisconsin also limits the potential agricultural value of the land.

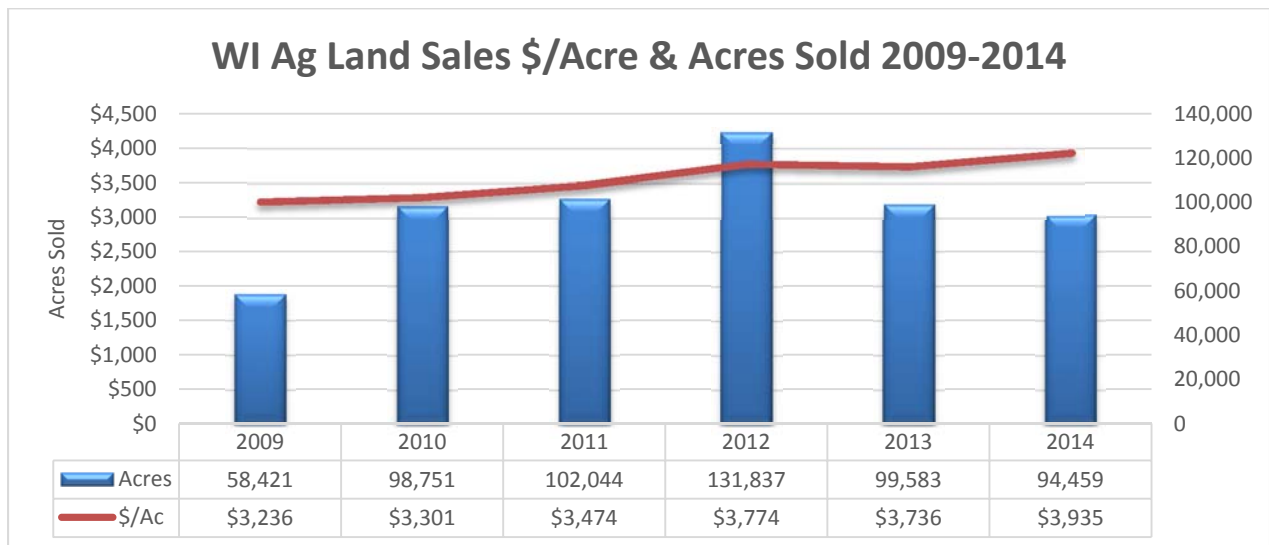


Figure 1. State-wide Ag Land Value Trends 2009-2014

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² This paper was reviewed by Dr. Mark Stephenson, Director - UW Center for Dairy Profitability, Mr. Matt Lippert, Wood County UWEX Ag Agent, and Mr. Tom Kriegl, UWEX Professor Emeritus.

While the state average increased slightly, there were wide variations in sale price per acre. Eighteen percent of the sales were less than \$2,000/acre and only 17% of sales had prices above \$6,000/acre. While the high priced sales make good headlines, they are relatively rare.

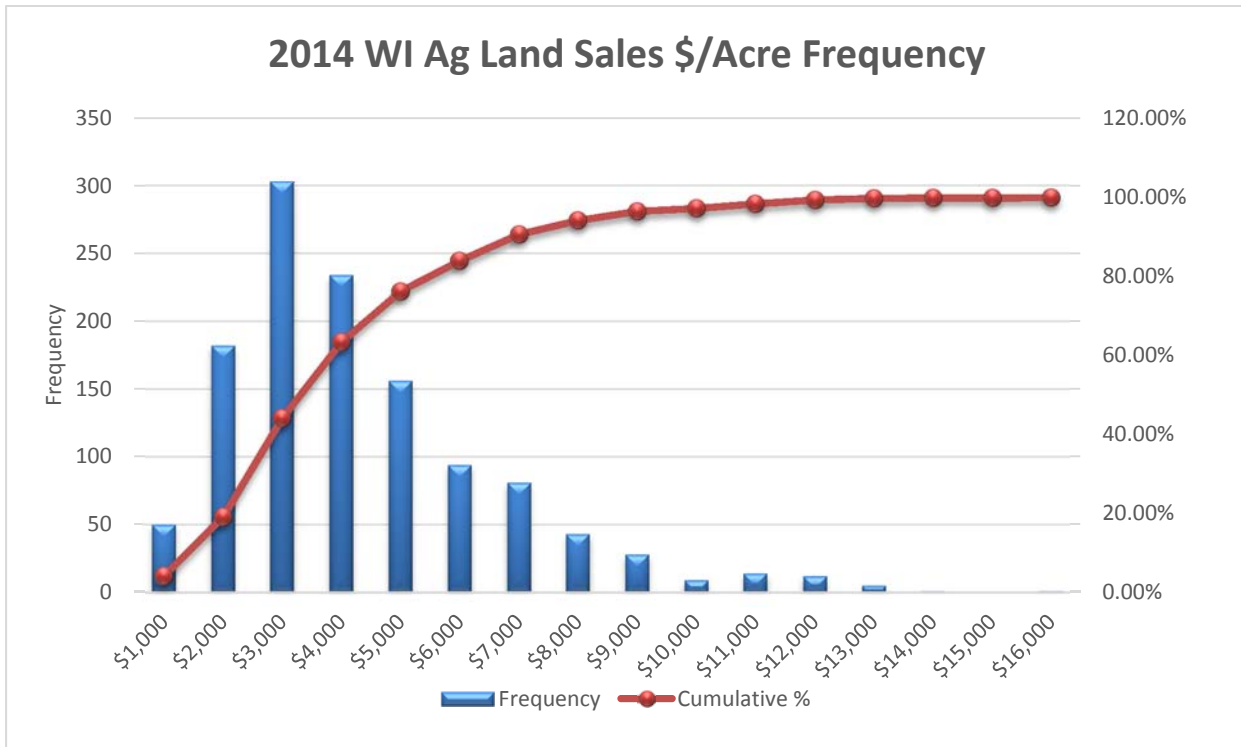


Figure 2. 2014 Distribution of weighted average \$/acre – statewide.

Methodology

Only a small fraction of the transfer return records reported each year are large bare land tracts between non-related parties. This report includes only sales of bare land between non-related parties. Sales less than \$400/acre and more than \$17,000/acre were excluded – assuming they are not used for agricultural purposes.

Land in villages or cities was excluded. All parcels were greater than 35 acres and less than 2,000 acres and currently assessed for agricultural use. Properties with water frontage or more than 10 acres of managed forest acreage were excluded. No sales with seller retained property rights were allowed. In addition, sales to buyers containing references to forestry or mining and land purchased by municipalities or religious groups were removed from the dataset.

Finally transfer return records with miscellaneous use notes referencing hunting or recreational uses and records listing water frontage were also deleted from the database. These methodological changes have been applied to the entire period covered and reported averages should supersede values reported earlier staff papers.

While the transfer return data is less than from perfect, it is an objective and relatively timely method of measuring changes in agricultural land values over time.

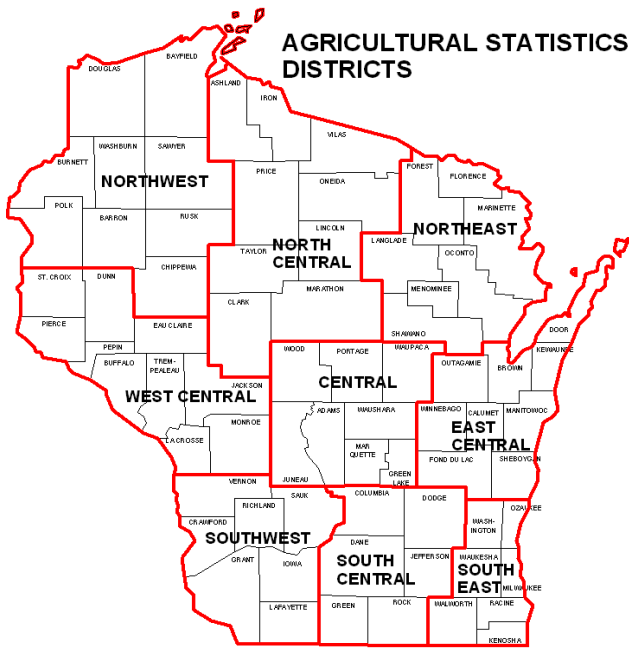


Figure 3. Wisconsin NASS Reporting Districts

Between 2009 and 2014 more than seven thousand bare agricultural land transfer returns were used to compute weighted average sale prices per acre.

All reported sale prices are weighted averages. Weighted averages reduce the influence of sales with unusually high or low sale prices. Weighted averages are computed by summing the dollars paid for all sales and the total acres sold in the county or NASS unit and then dividing the totals. For example, if four 100-acre tracts sold for \$2000/acre and a 5th sold for \$4000, but was only 50 acres - the weighted average would be $(400 * \$2,000) + (50 * \$4,000) / 450$ or \$2,222/acre as opposed to the simple average of \$2,400.

Location is an important determinant of value. In addition to the state-wide averages, land prices are reported for National Agricultural Statistics Service districts. The map (Figure 3.) displays the borders of the various National Agricultural Statistics Service (NASS) districts.

NASS District	2009			2010			2011		
	Sales	Acres	Wt \$/Acre	Sales	Acres	Wt \$/Acre	Sales	Acres	Wt \$/Acre
1 NW District	50	4,238	\$2,064	100	6,823	\$1,735	119	8,296	\$1,978
2 NC District	78	6,042	\$2,004	114	7,860	\$1,862	109	7,558	\$1,943
3 NE District	51	3,648	\$2,685	67	5,125	\$2,463	68	4,227	\$2,534
4 WC District	130	10,215	\$2,962	229	17,388	\$3,014	295	22,923	\$3,200
5 C District	78	6,413	\$2,459	133	10,883	\$2,849	131	9,198	\$2,442
6 EC District	120	8,613	\$4,210	156	10,366	\$3,986	186	14,658	\$4,615
7 SW District	119	9,025	\$3,286	206	18,127	\$3,277	179	15,315	\$3,198
8 SC District	113	8,277	\$4,303	188	18,488	\$4,510	198	16,153	\$4,905
9 SE District	27	1,950	\$5,556	45	3,691	\$5,257	49	3,716	\$5,659
Grand Total	766	58,421	\$3,236	1238	98,751	\$3,301	1334	102,044	\$3,474
NASS District	2012			2013			2014		
	Sales	Acres	Wt \$/Acre	Sales	Acres	Wt \$/Acre	Sales	Acres	Wt \$/Acre
1 NW District	162	12,032	\$2,244	134	11,397	\$2,593	108	9,332	\$2,374
2 NC District	153	11,997	\$2,031	131	9,284	\$2,255	139	9,834	\$2,672
3 NE District	88	5,939	\$2,882	57	3,668	\$2,993	87	6,013	\$2,799
4 WC District	329	24,195	\$3,198	269	20,804	\$3,377	212	17,376	\$3,744
5 C District	160	11,716	\$3,263	146	11,087	\$2,853	142	10,752	\$2,969
6 EC District	264	18,350	\$5,309	163	12,053	\$5,201	150	10,604	\$5,876
7 SW District	285	24,958	\$3,901	186	13,989	\$3,534	169	13,834	\$3,739
8 SC District	235	17,445	\$5,252	162	12,178	\$5,264	171	13,320	\$5,662
9 SE District	65	5,205	\$5,194	65	5,123	\$6,346	39	3,394	\$5,882
Grand Total	1741	131,837	\$3,774	1313	99,583	\$3,736	1217	94,459	\$3,935

Table 1. Weighted Average Wisconsin Bare Ag Land Sales 2009-2014.

Table 1 reports the number of sales, the acres exchanged and the average \$/acre in each of the nine NASS reporting districts. (Complete county details are included in Appendix I.) In 2014 there were fewer acres transferred in 6 out of the 9 NASS districts. Even within districts or counties with mostly homogeneous soil types and topography there are wide variations in the value of individual parcels.

East Central Wisconsin saw the fastest percentage increase in land values over the past six years. This is also the fastest growing milk production region in the state. The average price per acre for bare land was nearly the same in Southeast, East Central and South Central districts in 2014. The Southwest, Northeast and Central districts experienced declines in average sale prices in 2014. The West Central district sold the most acreage and the Northeast district sold the fewest acres.

The total number of acres transferred was actually down about 5% from 2013 levels and more than 30% less than the peak in 2012.

The highest average prices have been recorded in the 4th quarter in four out of the last six years. Uncertainty about commodity prices and interest rates going forward may mean that even less land may be sold in 2015.

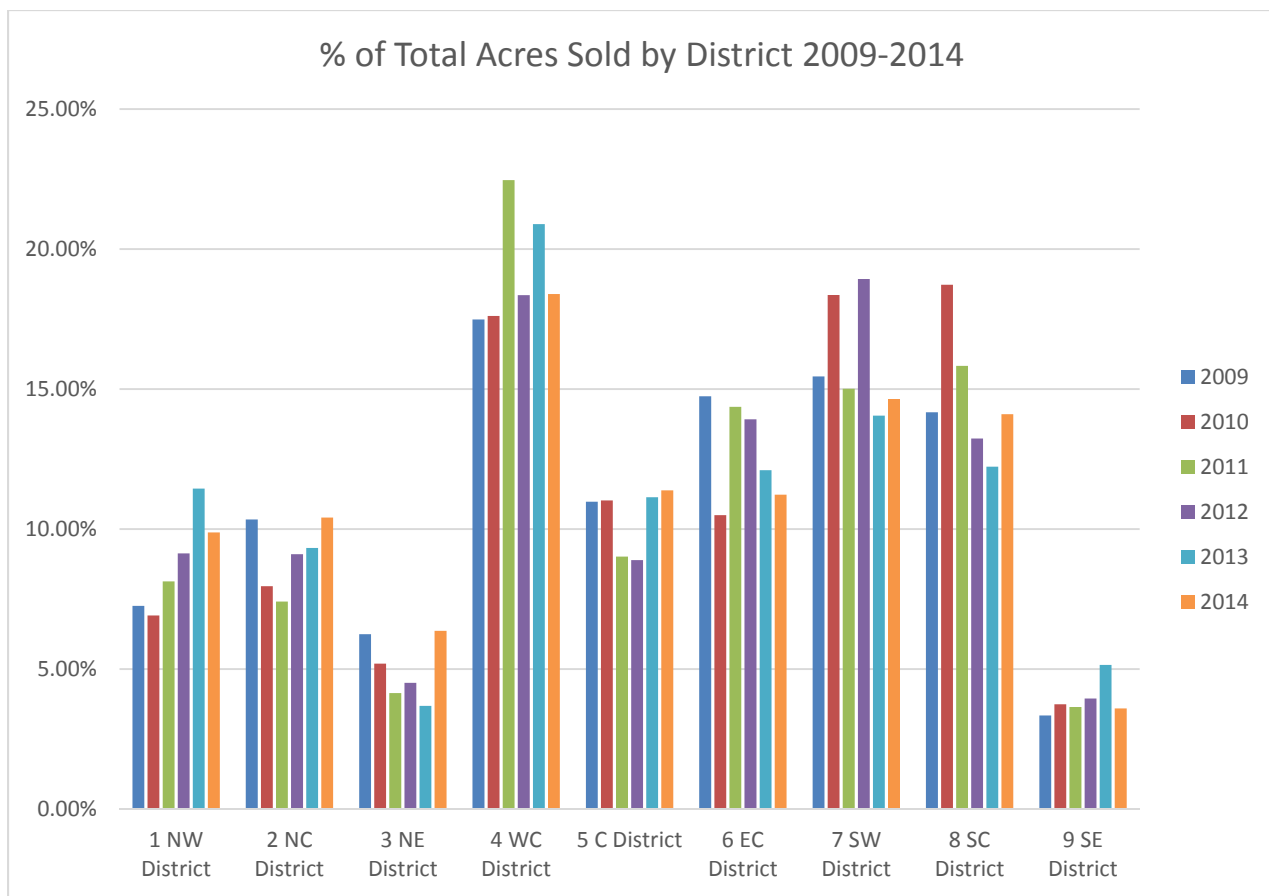


Figure 3. Relative % of Land Sold by District

Figure 3 depicts the percentage of total land area sales by NASS District. Southeast and Northeast districts have had the least agricultural land sold. Southeast WI is influenced by Milwaukee, Racine and Kenosha population centers. The small acreage in Northeast Wisconsin reflects the larger amount of forest and recreation land in that district.

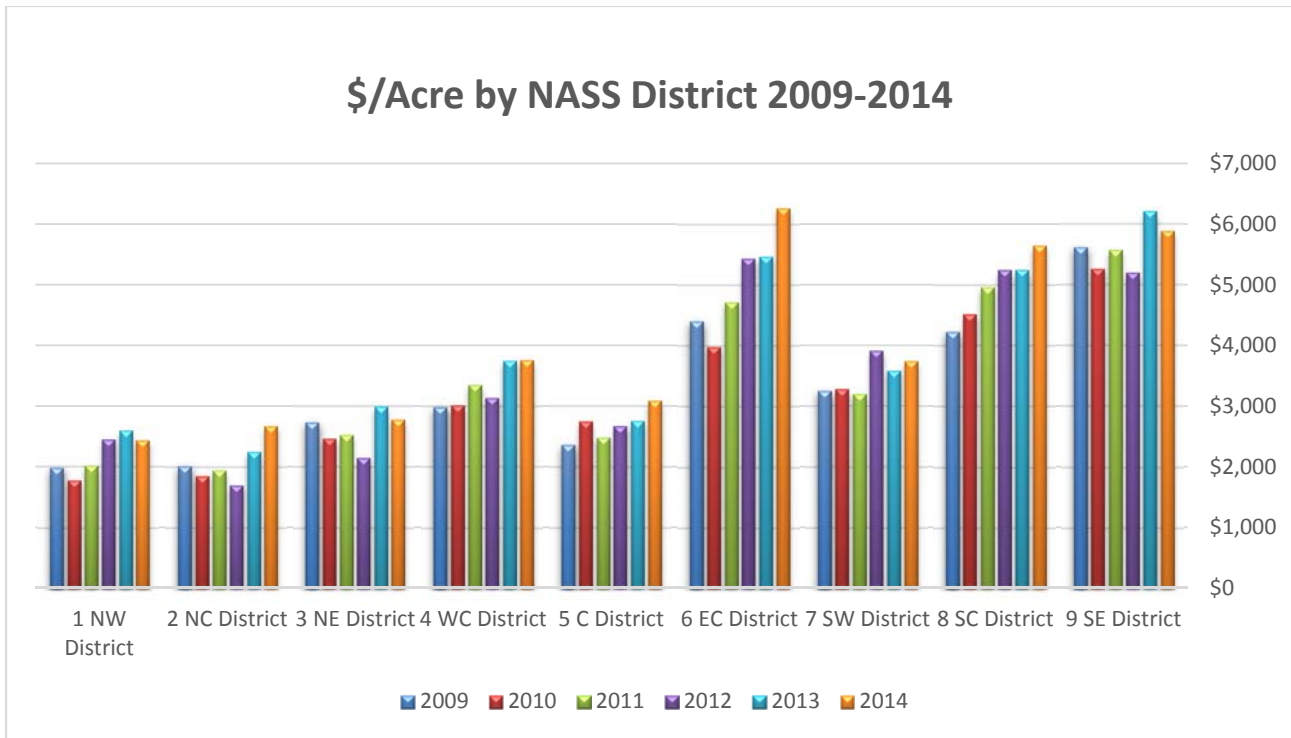


Figure 4. Change in weighted average price/acre by NASS district.

Figure 4 illustrates the changes in the weighted average sale price/acre within each of the nine statistical reporting districts over the six-year span. Average land values have been increasing in most parts of the state, but the highest prices paid for land are in South Central, East Central and Southeastern Wisconsin. There have been very few bare land sales in Southeastern Wisconsin in recent years - which makes it difficult to gauge market value trends. East Central sales saw the largest weighted average price increase in 2014 as a strong dairy industry and land auctions in this case helped to drive up sales prices.

Land Values vs Rental Rates

State-wide land rental rates are reported annually by NASS. Figure 5 page eight compares the state average land values with reported average rental rates. Even within a county, rental rates are highly variable. Some of the factors which affect rental rates are soil quality, field size, social contracts and demand for nutrient management. The 2014 NASS average rental rate was \$130/acre which is about 3.3% of the state-wide average sale price.

There has been a high demand for additional rented land in recent years and tenants bid up rental rates as a result. The following Wisconsin corn budget for 2015 illustrates the tight profit margins that are likely to exist this year if yields and harvest time prices are typical.³

Table 2 on the following page is an example of the input costs associated with producing an acre of corn in 2015. Note that nearly 46% of these costs are inputs and purchased seed, fertilizer and chemicals and another 32% are machinery related expenses like fuel, repairs and depreciation costs which are typically fixed costs and may be hard to estimate for a given year.

³ This budget was prepared by Mr. Jim Leverich, UWEX On-farm Research Coordinator.

2015 Corn Budget					
Variable Costs					
Input	Pounds Applied	Cost/ Unit	Cost/Ton	Cost/lb	\$/Acre
NH3	140	\$0.44	\$725.00	\$0.44	\$61.89
AMS	125	\$0.19	\$375.00	\$0.19	\$23.44
K2O	100	\$0.24	\$475.00	\$0.24	\$23.75
Starter	100	\$0.38	\$750.00	\$0.38	\$37.50
Lime	1000		\$15.00		\$7.50
Seed	30,000	Plant Pop/Acre	Cost/Bag		\$93.75
			Cost/Acre		
Chemicals			\$35.00		\$35.00
Insurance			\$20.00		\$20.00
Testing & Scouting			\$10.00		\$10.00
			Subtotal	\$312.83	46%
Field Operations			Fixed & Variable Cost / Acre		
Nitrogen Application				\$15.00	
Spreading Fertilizer				\$5.00	
Primary Tillage				\$15.00	
Secondary Tillage				\$15.00	
Planting				\$25.00	
Spraying				\$15.00	
Combining				\$35.00	
			Subtotal	\$125.00	18%
Trucking, Drying and Storage Costs					
Trucking				\$30.00	
Drying				\$35.00	
Storage				\$30.00	
			Subtotal	\$95.00	14%
Rent				\$150.00	22%
			Total Costs	\$682.83	100%

Table 2. 2015 WI Corn Budget

Table 3 on the following page displays the dollars remaining for operator labor and management after all other budgeted costs are paid. As an example, an operator would net only \$17.17 /acre with a yield of 175 bu. and average price of \$4.00/bu. (above current market projections for both price and state average yields).

Projected Net/Acre Remaining for Operator Labor & Management

Yield/Acre

Corn Price	100	125	150	175	200
\$3.00	-\$382.83	-\$307.83	-\$232.83	-\$157.83	-\$82.83
\$3.50	-\$332.83	-\$245.33	-\$157.83	-\$70.33	\$17.17
\$4.00	-\$282.83	-\$182.83	-\$82.83	\$17.17	\$117.17
\$4.50	-\$232.83	-\$120.33	-\$7.83	\$104.67	\$217.17
\$5.00	-\$182.83	-\$57.83	\$67.17	\$192.17	\$317.17

Table 3. Projected net revenue per acre with alternate yield and price assumptions

Rental rates and land values tend to move together historically. In recent years rental rates have averaged between 2.4 and 3.3% of average land sales prices. Many more acres are rented than sold each year. Because of the weather and price uncertainties going forward, there has been an increased use of flex lease contracts in the Midwest. Flex leases allow the owner and tenant to share the risks and rewards in good years and bad. (Examples of several types of agricultural leases can be found at <http://www.aglease101.org>.)

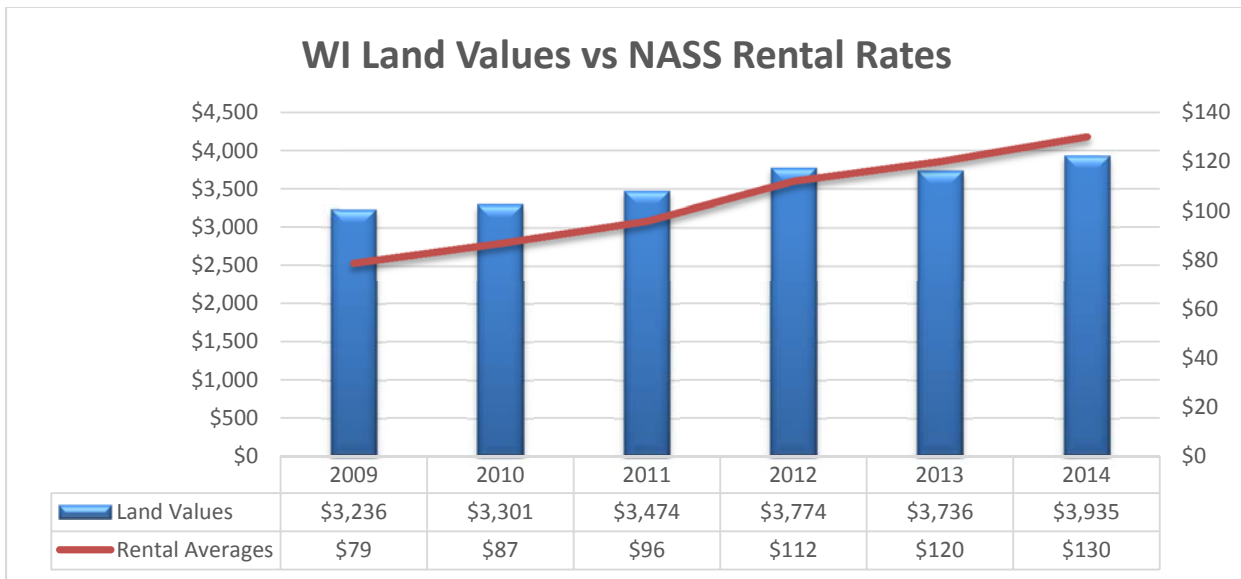


Figure 5 Land Values & NASS Reported Rental Rates

When the average cash rents are combined with land value appreciation, the returns to owning land look better than many other investment alternatives. Cash rental rates tend to lag behind land values during periods of strong commodity prices. Rental rates tend to be “sticky” when commodity prices soften – as we’ve seen in 2014. With the lower commodity prices experienced in 2014, competition for rental land – especially poor quality rental acres - will soften in 2015.

Types of Ag Land Sellers

Ag land ownership structures are changing rapidly in many parts of Wisconsin. Up until the last decade, most property was bought and sold between individual owners or as tenants in common. Table 4 shows the changing percent of ag land which has been bought by corporations, limited liability companies and limited liability partnerships.

Grantor Entity Type	2009		2010		2011		2012		2013		2014	
	% of Sales	% of Acres	% of Sales	% of Acres	% of Sales	% of Acres	% of Sales	% of Acres	% of Sales	% of Acres	% of Sales	% of Acres
Corporation	5%	8%	6%	8%	5%	6%	4%	5%	4%	4%	3%	4%
Individual	75%	71%	69%	63%	69%	64%	70%	64%	69%	65%	70%	66%
LLCs, Trusts, Etc.	19%	19%	23%	26%	24%	27%	25%	28%	27%	30%	26%	29%
Partnership	1%	2%	2%	3%	2%	2%	1%	2%	1%	1%	1%	1%
Grand Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table 4. WI % of Transactions and % of Acres sold by various ownership entities.

Individuals are still the most common sellers while the percentage of acreage sold by LLCs and trusts has increased from 19% to 29% between 2009 and 2014. Land sold by corporations and general partnerships is only a small percentage of the total. As farming operations become larger and real estate ownership interests more dispersed, sole proprietorships will become less prevalent.

How are Sales Financed?

The percent of land financed by various methods has not changed much in the past 6 years. The largest percentage of acreage was financed by conventional mortgages. The next largest category was “no financing involved” – also known as “cash”. This is a testament to the strong financial position many buyers have enjoyed. Years of strong commodity prices have made this possible. Approximately ten percent of the acreage has been financed with seller assistance. Farm Service Agency financing is under-stated in this case because they are often participating with commercial lenders, but in a secondary position.

% of Sales Financed	2009	2010	2011	2012	2013	2014
Financial Institution - Conventional	48.48%	51.44%	48.25%	42.17%	49.73%	49.04%
Financial Institution- Government	1.06%	2.05%	2.59%	1.12%	0.70%	2.05%
No Financing Involved	37.99%	38.71%	36.59%	48.16%	38.39%	37.97%
Obtained From Seller	11.27%	7.38%	12.07%	8.22%	10.96%	10.36%
Other 3rd Party Financing	1.20%	0.42%	0.49%	0.33%	0.23%	0.58%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Table 5. Ag Land Finance Methods Reported

Implications for Farmers

Rising land values are a mixed blessing for established farmers. The appreciation in land value is only realized when the assets are sold. In most cases the ongoing business is neither directly responsible for nor directly benefited by changes in land values. High land values provide the retirement cushion for “last generation” farm businesses. However, high land prices make it more difficult for new entrants to get started without significant help from family members or other benefactors.

Dairy farming in Southeastern, East Central and South Central Wisconsin is under great pressure from competing land uses. If the trend continues, dairy production will continue to shift away from these parts of Wisconsin.

Dairy farming is a capital intensive business. A typical dairy cow and her replacement consumes approximately 7.5 tons of forage dry matter and 100 bushels of grain each year. Manure management and nutrient balancing are a growing challenge. The typical Wisconsin dairy farm requires 2-3 acres of cropland to grow the forages and grain consumed by each dairy cow. In recent years the demands for ag land have made dairy farm acquisition and expansion very difficult.

Farmland use value assessment has greatly reduced the costs of holding agricultural real estate. Record low interest rates and changing population demographics have also increased demands for open space. Expanding dairy businesses may need to rely on long term leases or manure trading arrangements to assure compliance with environmental regulations and land use constraints.

Although dairy farming is well suited to the climate, topography and infrastructure of Wisconsin, the continued survival of a viable dairy industry depends upon access to affordable land resources.

Few things are as illiquid as land. Unlike stocks, bonds and commodities, one can only estimate the value of real estate until a willing buyer and seller negotiate a sale. At least in recent years, agricultural land has been a much better investment than many other alternatives. However, past performance is not always a good predictor of the future!

Appendix I on the following page contains a more detailed breakdown of real estate sale prices on a county by district basis for 2009 - 2014. The reader is cautioned that limited numbers of sales in each county can cause wide variations from year to year, and the weighted average prices reported may not truly represent the local market. These figures should not substitute for an independent appraisal by a qualified professional.

