

What's Happening with U.S. Land Values?

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According to USDA's February 2017 farm income forecast, the U.S. net farm income is forecasted to decline by another 9 percent to \$62.3 billion, the fourth consecutive declines after the 2013 peak and if realized, the lowest in net farm income since 2002, in inflation-adjusted terms. Persistent weakness in farm income continue to put downward pressure on farmland values in multiple areas across the country: for example, Iowa farmland values have seen a third year decline for the first time since the 1980s farm crisis. While there is plenty alarming sings, the U.S. farmland market is heading towards a gradual downward correction, as opposed to a sudden collapse as in the 1980s.

There are plenty of alarming signs in the U.S. agricultural economy: current corn prices are half the 2013 peak level of US \$7/bushel; farm income has declined for major commodities (corn, wheat, cattle), falling from the previous year to levels well below recent years; weak farm income and worsening credit conditions continue to trim farmland values, which are expected to trend lower in the months ahead, thus weakening the equity position of producers and the collateral value for lenders.

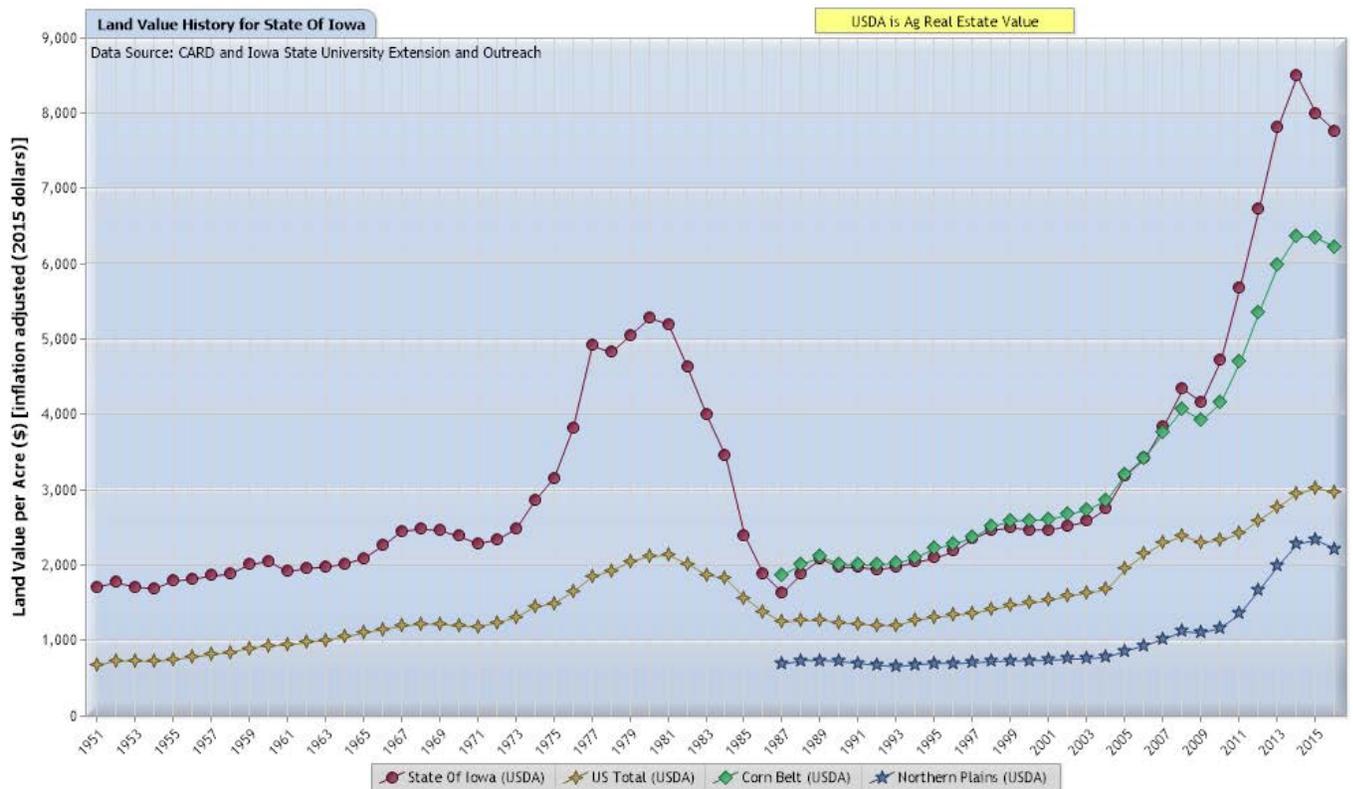


Figure 1. Average Inflation-adjusted U.S. and regional farm real estate values (2015 dollars)

The deteriorating agricultural credit conditions and weakening farm income continued to weigh on U.S. farmland values: figure 1 reveals that the National Agricultural Statistical Service of the U.S. Department of Agriculture released their estimates for land values on August 5, 2016, which shows an average of 1% drop in U.S. cropland values from June 2015 to June 2016. The *Ag Credit Survey* from the Federal Reserve Bank of Kansas City reported that non-irrigated, irrigated farmland and ranchland values in Northern Plains and Mountain states all reported a loss compared to a year ago. In particular, there was a 13% sharp decline in Kansas's fourth-quarter non-irrigated farmland values compared to a year ago, while Nebraska and Oklahoma saw greater slumps in irrigated farmland values in corresponding time period than the non-irrigated land values. The *AgLetter* through the Federal Reserve Bank of Chicago also revealed that after adjusting for inflation, the average farmland values in the 7th district were down 2 percent for the first quarter of 2017 relative to a year ago. This year-over-year decline in the real values of District agricultural land was the 11th in a row (stretching back nearly three years). In particular, Indiana experienced its sharpest year-over-year decrease (-5 percent) of the current downturn. In addition, the average cash rental rates in the 7th district decreased 9 percent since 2016 – the fourth consecutive negative result and the longest-streak of declines since 1990-94.

However, there are several good news regarding U.S. farmland market as well: despite continuous declines in farmland markets across the Corn Belt, the magnitude of the declines are much modest compared to the 1980s farm crisis. The Federal Reserve Bank of Chicago's April 2017 *AgLetter* reported a 2-percent and 5-percent year-over-year increase in farmland values for Iowa and Wisconsin, which is the first year-over-year increase for Iowa since the third quarter of 2013. Realtor Land Institute also reported a 0.9% rise in Iowa cropland values over the last six months since September 2016, for the first time since 2013. Amid all declines in other states, the Federal Reserve Bank of Kansas City also reported a modest increase in non-irrigated land values in western Missouri. USDA's 2016 Land Value Survey also showed a modest uptick in cropland values in the Southeast, Delta, and Southern Plains from June 2015 to June 2016. Although these may not be as promising as some hoped to "stop the bleeding" of the land market, this hopefully might be indicating that at least farmland markets in some parts of the country will turn around soon.

Put simply, land value is the net present value of all discounted future income flows. With certain assumptions imposed, one could think of land value being net income divided by interest (discount) rate. In particular, the net income tends to be localized, often influenced by local livestock-crop mix and related commodity market fluctuations, while the interest rate tends to be universal across districts and states. To understand how the land values will change in the future, it is critical to understand how the interest rates will change as well as how the net income will change for your particular area. For example, for a dairy-intensive area, dairy price movements matter for net farm income, while corn or soybean price changes are more relevant for the land market fluctuations for areas with heavier reliance on crop production.

Preliminary Iowa State University cost of production estimates for 2017 show that after more than three years of operating loss, Iowa farmers finally on average will have a break-even crop production for both corn and soybean. Lower costs bring cautious optimism among the agricultural community. Despite the Federal Reserve's recent moves to raise interest rates, the interest rates in general are still at very low levels, which allow debt restructuring possible for troubled producers. In addition, many landowners are holding onto their land and the limited supply has buoyed the farmland values in many states. Purdue University and CME Group's

monthly Ag Economy Barometer shows that while more producers surveyed expect farmland values to decline over the next year than those forecasting a rise, producers were more optimistic about farmland values in the year ahead than they were in May 2017 – 19 percent of respondents expect an rise, the highest since November 2015 expect for July 2016 (Figure 2). The farm managers and rural appraisers surveyed at Iowa State University’s Soil Management and Land Valuation conference are forecasting the stabilization in Iowa farmland values within the next year and a bounce back before 2020.

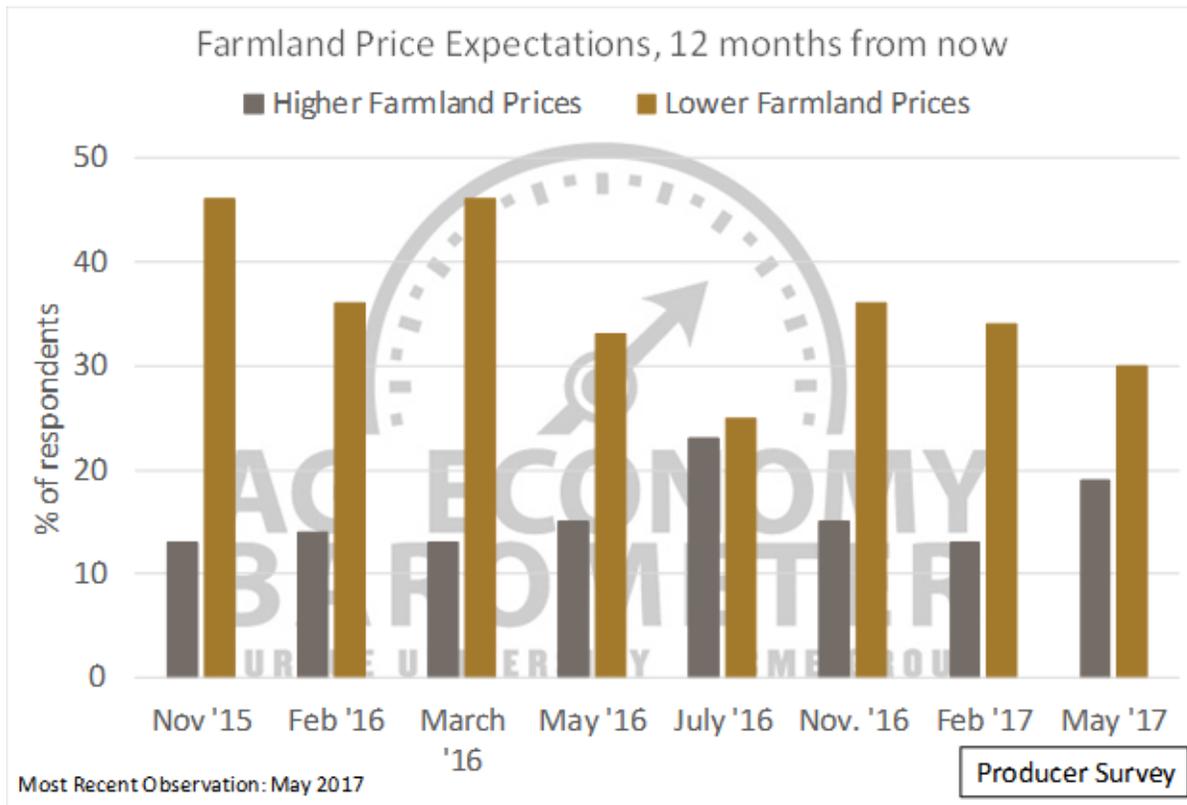


Figure 2. Producers’ Farmland Price Expectations from Ag Economy Barometer

Many people are concerned about a potential farmland bubble burst, or a replay of the 1920s economic depression or even the 1980s farm crisis. There are legitimate reasons to be cautious, especially with the rising uncertainty in agricultural exports and likely rise in interest rates. I argue that there is four economic and legal reasons why this farm downturn is unlikely to slide into a sudden collapse of the agricultural markets: first, a comparison between this third golden era during 2000s and the previous two reveal that farmers accumulated much more income, especially cash, during the most recent decade than what they have in the 1910s and 1970s before those farm crises (Table 1); second, the laws and regulations governing agricultural credit markets has become more stringent: increasing collateral needed for loans for asset acquisitions like farmland, which leads to a sizeable reduction in loan to value ratio from 85% in the 1980s to less than half nowadays, as well as enhancing compliance requirement. Third, despite recent moves by the Federal Reserve which raised interest rates three times over the past 12 months, farmers and other agricultural businesses still enjoy a very low interest rate

which limits the amount of debt in the agricultural sector. To this day, the balance sheet of the U.S. farm sector is still very strong and the delinquency rates for agricultural loans are still fairly low. Finally, it is very important to point out the strength of the agricultural safety net: in 1987, the total acres insured in the Federal Crop Insurance program was only 50 million acres for the entire U.S., and now just total cropland insured in Iowa already exceeded 93% of Iowa's corn and soybean production acres.

Average % change in inflation-adjusted values per year			
Golden Eras			
	Land	Gross Income	Net Income
1910-1920	1.2%	0.8%	0.2%
1973-1981	9.7%	0.9%	-3.2%
2003-2013	11.1%	4.5%	8.1%
Crises and Declines			
	Land	Gross Income	Net Income
1921-1933	-5.8%	-1.9%	-1.0%
1981-1987	-15.0%	-2.5%	2.6%
2013-2017	-4.5%*	-4.5%	-9.8%

Table 1. Average Annual Percentage Change in Inflation-adjusted Iowa Land Values and Farm Income

Note: The average land value change from 2013 to 2017 is approximate because 2017 land values are unknown. The 1910–1933 gross and net farm income changes are for the whole

United States due to limited data at the state level. Land values are based on USDA Census of Agriculture and USDA NASS Land Value and Cash Rent Survey, while the data on farm income is from the USDA Economic Research Service Farm Income and Wealth Statistics database.

Despite the deteriorating agricultural financial conditions and continued decline in farm income, the current farm downturn is more likely a liquidity and working capital problem, as opposed to a solvency and balance sheet problem for the entire agricultural sector. Rather than an abrupt farm crisis, we are likely to a gradual, drawn-out downward adjustment to the historical normal return levels for the agricultural economy. The U.S. farmland market are likely headed towards stabilization and potentially slightly more modest downward adjustments before bouncing back in the near future.