FARMLAND Insights

SPRING 2018 | Volume 1 | Issue 1

Don't Bet On the Turn of the U.S. Land Market Yet

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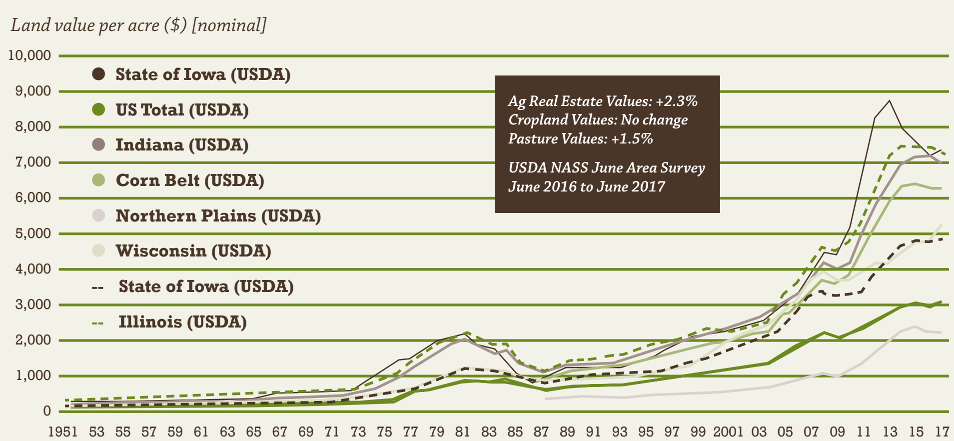
Farmland is arguably the most significant asset in the typical landowner's investment portfolio. The total value of all U.S. land and buildings consistently accounts for more than 80% of total U.S. farm assets. As a result, the strength of the farmland market is critical to maintaining a strong equity position for producers and landowners, as well as providing robust collateral for lenders during the current downturn in the agricultural economy.

Mainly due to limited land supply, many Midwestern states, such as Iowa, reported a modest increase in land value during the past year. I would, however, caution the optimistic interpretation of this as the turnaround of the farmland market. Given rising interest rates and continued declines in U.S. farm income, this recent bump could likely be just a temporary break in a continued downward adjustment in the farmland market.

Figure 1. Ag Real Estate Values for U.S., the Corn Belt and Select Corn Belt States from 1951 – 2017



Source: CARD and Iowa State University Extension and Outreach

According to the Iowa State University Land Value Survey, after three consecutive declines since its 2013 peak, the average land value for all qualities of farmland in Iowa saw its first increase. The estimated $7,326 per acre statewide average for all qualities of land represents a 2.0% increase from November 2016.

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Soybean planted area may surpass corn in 2018/19, a first

The area of soybeans planted in the United States may exceed the area planted for corn in 2018/19, a first for the United States, according to the U.S. Department of Agriculture (USDA). Corn and soybeans are the most widely produced crops in the U.S., accounting for more than half of all acres planted.

Many reasons support the growth in soybean acres relative to corn acres.

- Corn production has benefited from sustained growth in the yield per acre, allowing farmers to dedicate less land to corn while maintaining the same output.
- Soybean yields also improved, but the relative gains are not as large.
- As corn yields grow, overall area planted to corn is projected to trend lower.

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This survey echoes many other surveys:

- *The Ag Credit survey from the Federal Reserve Bank of Chicago reported in February 2018 that good quality land in Indiana, Wisconsin, and Iowa increased 2%, 2%, and 3% respectively from January 2017 to January 2018.*
- *The U.S. Department of Agriculture (USDA) June Area Survey reported a 2.3% increase in U.S. agricultural real estate values (land and building) from June 2016 to June 2017, no change for cropland values, and 1.5% increase for pasture land values during the same period. As shown in Figure 1, almost all major agricultural production regions reported stable or higher agricultural real estate values from June 2016 to June 2017, according to USDA survey.*
- *The Federal Reserve Bank of Kansas City also noted a slowdown in the decline in the land values in the Northern Plains and the Mountain States in their February Ag Credit Survey, with about a 3% decrease from a year ago compared to the last three years' 5% – 7% percent annual drop.*

Market Factors

Many supply and demand factors were behind the recent increase in the land market. First, the farmland market has always been a thin market with few farmland sales, but the past four years the farmland market has been extremely tight. For four consecutive years, more respondents to the Iowa State University (ISU) survey reported fewer sales in their county compared to the previous year. In 2017, only 150,000 acres of land sold in Iowa, which represents only half of one percent of all 30 million acres in the state. This is a low agricultural turnover ratio for an inherently thin market. Across the Midwest, the limited farmland supply helped buoy market prices.

Second, many areas in the Midwest actually enjoyed a much-stronger-than-expected yield last year due to improved precipitation before harvest. This helped lower per bushel production costs.

Third, the 2018 ISU Cost of Production Estimates revealed that soybean cost estimates fell by $10 per acre this year from 2017 levels, or about 2.1%. However, the cost of corn production is projected to decline by less than $5 per acre, or less than 1%. The average cash rent in Iowa also dropped about $4/acre to an average of $231/acre. Despite continued declines in commodity prices, the corresponding drop in production costs have resulted in a breakeven or positive production margin for many producers this year, which has a positive impact on farm income and asset values.

Cautious About Future

I would caution any immediate hail of the turn of the Iowa farmland market given the stagnant farm income and rising interest rates. The fundamentals of the U.S. farm economy have not improved significantly, so this recent increase in land value to some extent defies logic.

There are several reasons for my caution. First, despite the 2.0% increase in nominal average state land values, the inflation-adjusted Iowa farmland value on average actually saw a 0.2% decline. In other words, the growth in general inflation in the U.S. economy actually outpaced the seeming gain in the farmland market.

Second, the recent increase is largely influenced by very limited farmland supply. If more farmers are forced to liquidate a portion of their assets due to heightening farm financial stress, there will be more land parcels available on the market, potentially allowing the land market to go down in the future.

Results of an analysis by Dr. Alejandro Plastina, Assistant Professor and Extension Economist at Iowa State, using farm data from the Iowa Farm Business Association shows that the share of financially stressed farms (vulnerable liquidity or solvency ratings) increased from 38% in December 2014 to 47% in December 2016. The Federal Reserve Banks in Chicago and Kansas City also reported continued deterioration in agricultural credit conditions. As a result, the downward pressures on the farmland market are still present.

Third, the USDA Economic Research Service forecasted in February 2018 that U.S. net farm income, a broad measure of profits, is forecast to decrease $4.3 billion (6.7%) from 2017 to $59.5 billion in 2018, the lowest net farm income level in nominal dollar terms since 2006. In inflation-adjusted (real) 2018 dollars, net farm income is forecast to decline $5.4 billion (8.3%) from 2017 and, if realized, would be the lowest real-dollar level since 2002.

Finally, even with the shift in its leadership, the Federal Reserve Bank will likely continue its efforts to raise interest rates. During the past two years, the Federal Reserve Bank has made three hikes, each 25 basis points, to bring the short-term federal funds rate to more than 1%. The agricultural lenders responded by raising the fixed and variable agricultural loan rates to their highest level in five years at more than 5.5%. This trend will likely continue especially in light of the growing agricultural debt repayment problems experienced at some agricultural banks.

Land Value Calculation

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, trends in net income for a particular region will be reflected in the farmland market, which tends to be localized.

To understand the changes in land value over time and across space, it is useful to examine how net income and interest rates will change during the next few years. Given the income and interest rate projections, there are still significant downward pressures on the U.S. land market. The Purdue Ag Economy Barometer shown in Figure 2 reveals that 20% of producers expect a higher land value in their local area a year from

January 2018, 20% project declines, and about half expect stabilization.

Factors to Watch

There are several unique uncertainties worth watching during the next year or two. First, it remains unclear how quickly and by how much the Fed will raise interest rates.

Second, it is uncertain how the trade agreement renegotiations such as NAFTA and a potential trade war with China will affect agricultural exports and farm income. This is particularly relevant for Iowa as it is one of the few states that has a trade surplus with Mexico, and disruptions of NAFTA could have major negative implications for the Midwest agricultural economy.

Third, the agricultural sector is closely watching possible policy changes, especially the 2018 Farm Bill discussions and the impacts of new tax reform.

Fourth, it is critical to watch whether the improved farm income and land market lead to landowners' growing interest in selling land or to more stressed sales from financially stressed producers.

No replay of 1980s Farm Crisis

If we define a "golden era" in agriculture as a period when the inflation-adjusted value of farmland significantly exceeds the 1910 level, we can argue that there have been three major golden eras in modern U.S. agriculture during the last 100 years: 1910–1920, 1973–1981, and most recently, 2003–2013.

With current commodity prices and U.S. farm income and asset values declining significantly, many farmers and agricultural professionals worry about the current farm downturn deteriorating into another farm crisis. However, I would argue that despite the growing financial stress across the Midwest during the past few years, we are unlikely to see a replay of the 1980s farm crisis as evidenced by a sudden, precipitous collapse of the U.S. agricultural land market and mounting delinquent farm loans and foreclosures.

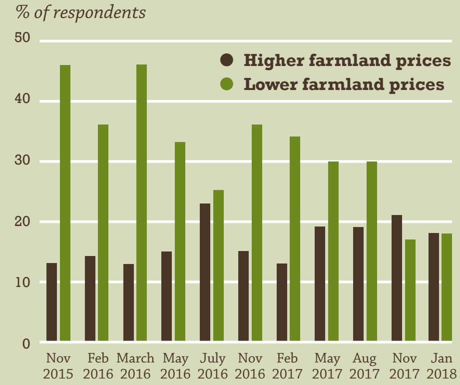
This somewhat optimistic outlook mainly stems from the strong farm income growth from 2003 to 2013, the historically low interest rate environment, and more prudent agricultural lending practices. In addition, our analysis suggests that the trajectory of the current farm downturn will likely be a gradual, drawn-out one more like that of the 1920s farm crisis, as opposed to a sudden collapse as in the 1980s farm crisis.

Looking Forward

Across the Midwest, there are signs of deteriorating agricultural credit conditions and a continued, prolonged downturn in the agricultural economy, although with a much slower pace. Given the rising interest rates and stagnant farm income, I would not be surprised to see a continued decline in land values in the future. This recent bump of Iowa and Midwestern farmland market, to me, seems more like a temporary break in a downward adjustment trajectory.

Figure 2. Producers' Farmland Price Expectations from Ag Economy Barometer, Purdue University

Farmland Price Expectations, 12 months from now



Most recent observation: Jan. 2018
Source: Producer Survey

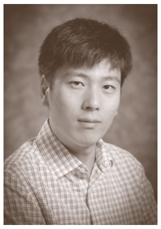
References:

Purdue University, Center for Commercial Agriculture, Ag Economy Barometer, https://ag.purdue.edu/commercialag/ageconomybarometer/

ISU Interactive Farmland Value Portal, https://www.card.iastate.edu/farmland/

Zhang, Wendong and Kristine Tidgren, 2018. *The Current Farm Downturn versus the 1920s and 1980s Farm Crises: An Economic and Regulatory Comparison.* CARD Working Paper 18-WP-577. https://www.card.iastate.edu/products/publications/synopsis/?p=1268

Dr. Wendong Zhang is an assistant professor in the Department of Economics at Iowa State University since August 2015. As an applied economist and extension farm management specialist, he is interested in land use, land management, land values and land ownership in the agro-ecosystem, as well as the interplay between agriculture and the environment. Dr. Zhang is also affiliated with Center for Agricultural and Rural Development (CARD).



Dr. Zhang is the leading researcher of the Iowa Land Value Survey, the Iowa Farmland Ownership and Tenure Survey, as well as the ISU Soil Management and Land Valuation Conference. He also led the development of the new, interactive Iowa Land Value Portal.

Dr. Zhang received his Ph.D. in Agricultural, Environmental and Development Economics from the Ohio State University in July 2015, and holds a BSc in Environmental Science from Fudan University in China.

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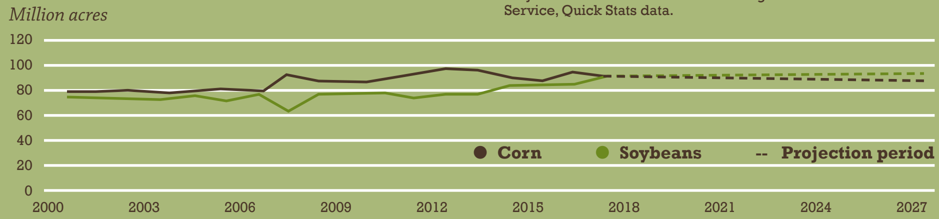
Soybean planted area continued from page 1

- **In addition, soybean demand is heavily tied to domestic and international demand for meat. Soybean meal is a primary component of animal feeds across species. Rising incomes in many emerging economies have translated to increased meat consumption and international demand for soybeans. This rising demand is expected to place upward pressure on soybean prices and increase producer return, incentivizing further plantings.**

U.S. corn and soybean area planted

Note: Data are reported in marketing years (September–August)
Source: USDA Economic Research Service, Agricultural Baseline Projections data and USDA National Agricultural Statistics Service, Quick Stats data.



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