



## Farmland Values: Growth Slows, Soft Landing Still in the Offing

### AgriThought

AgriBank provides financial solutions to meet the needs of production agriculture in America's heartland. We feature our research and analysis in AgriBank Insights as part of our AgriThought initiative to help inform the financial decisions among those we serve.

*A year ago, AgriBank Insights asked whether years of rising land prices would result in a bubble. Farmland values across the United States, including the 15-state AgriBank District, had been on the rise for more than a decade. Yet commodity prices were starting to fall, and interest rates were expected to rise. We predicted land values would begin to moderate toward a “soft landing”—without repeating a 1980s-type farm crisis. Given the events of the past year, our analysis still holds.*

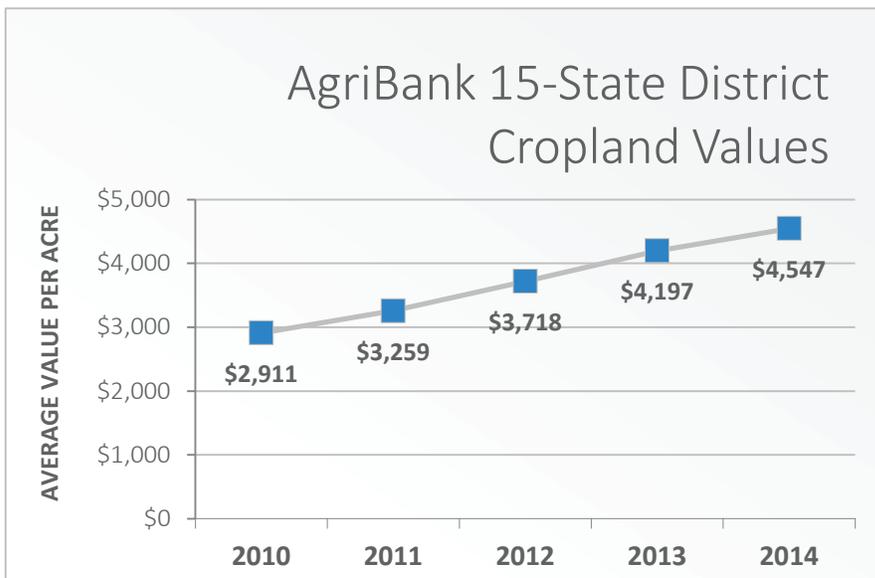
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### Highlights

- **LAND VALUES MODERATING.** Cropland and pastureland values across the AgriBank District increased in 2014, according to USDA 2014 survey data. Cropland values grew at a slower rate than a year earlier as most crop prices began to fall, while pastureland values rose at a faster pace due to strong livestock profit margins.
- **NET FARM INCOME FALLING.** The USDA is significantly bearish on real net farm income (NFI), projecting a total decline of 42.1 percent from 2013 to 2018—but still above the long-term average.
- **FARM DEBT LEVELS MANAGEABLE.** For the farm sector, both asset values and equity are projected to set new 50-year records in 2014—with their growth more than double the growth in debt for more than a decade.
- **SOFT LANDING IN PROGRESS.** Given current trends among a variety of key indicators, U.S. agriculture is well-positioned to handle a significant decline in land values without having to endure the financial stress and hardship experienced during the 1980s farm crisis.

# AgriBank District Land Values: Slower Growth in 2014



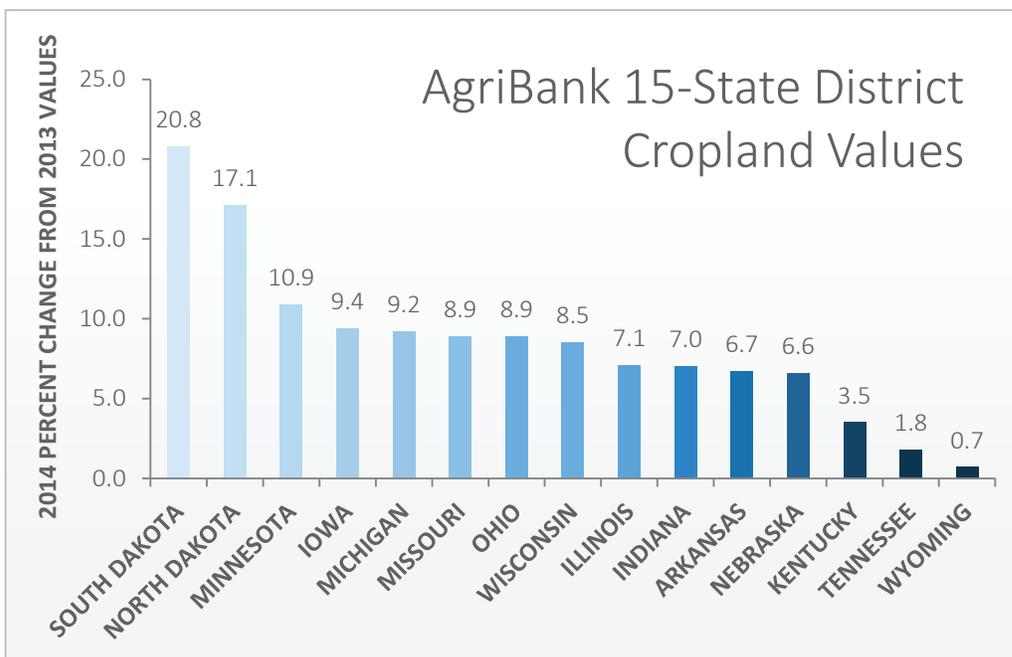
In recent years, factors such as increasing commodity prices and farm incomes, combined with lifetime low long-term interest rates, have helped fuel higher land values. However, given natural economic and market cycles, these factors are reversing course, as crop prices and farm incomes moderate, and interest rates begin to rise. Not surprisingly, land values also face a correction. However, most agricultural producers across the AgriBank District and the nation are in a strong financial position that will help keep the correction from becoming a crisis.

Source: USDA 2014 Survey

## USDA Land Value Surveys: Cropland Growth Slows, Pastureland Strengthens

The average value of cropland across the 15-state AgriBank District rose by 8.3 percent to \$4,547 per acre, according to the U.S. Department of Agriculture 2014 Survey. The District growth rate was slightly higher than the U.S. average

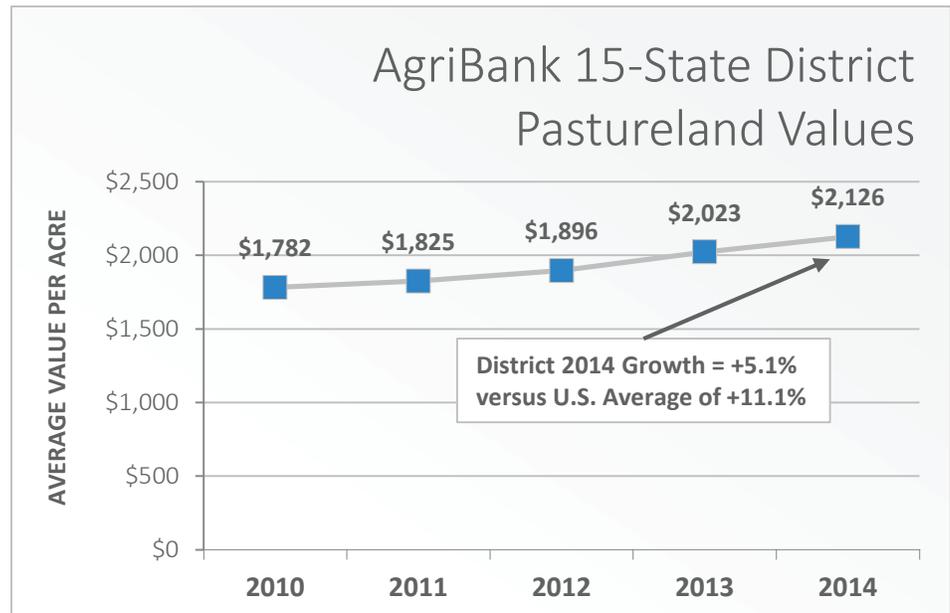
of 7.6 percent. However, the 2014 growth rate represents a notable slowdown from 12.9 percent in 2013 and 14.1 percent in 2012. Lower actual and expected corn and soybean prices started to weigh on valuations in the summer of 2014, when the survey was conducted.



Source: www.federalreserve.gov

cropland value growth, North Dakota, finished second this year, followed by Minnesota, Iowa and Michigan.

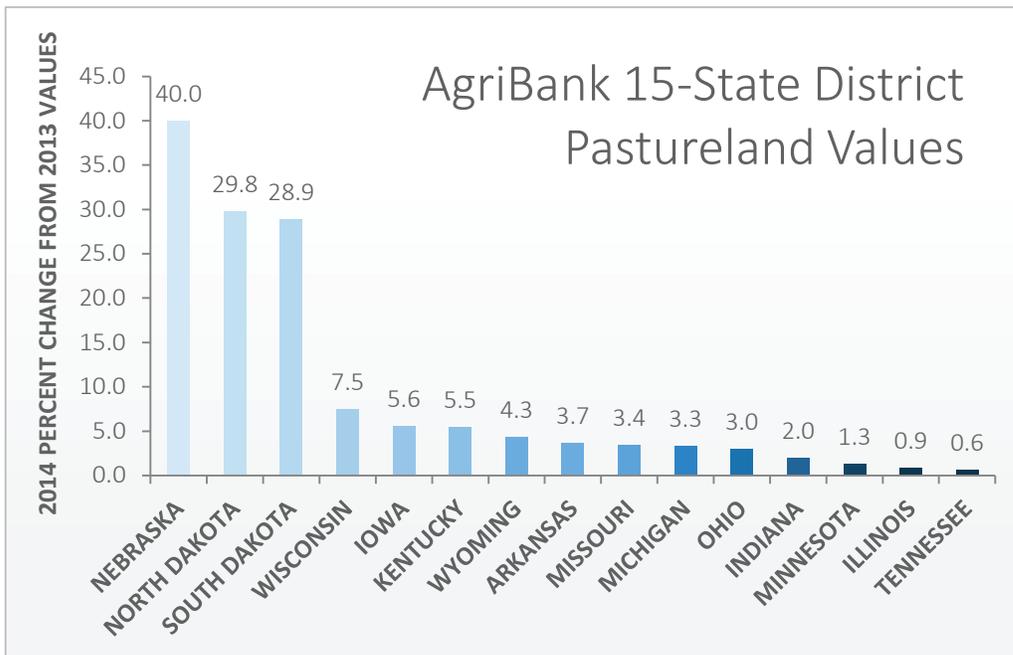
## AgriBank 15-State District Pastureland Values



Source: USDA 2014 Survey

In 2014, the average value of pastureland in the AgriBank District rose \$103 per acre, or 5.1 percent, which was a slower growth rate than the U.S. average of 11.1 percent. However, the 2014 growth rate was still notably higher than the previous three-year average of 4.3 percent. This may be indicative of strong livestock profit margins starting to factor into the value of pastureland.

## AgriBank 15-State District Pastureland Values



Source: USDA 2014 Survey

When looking at the growth in pastureland value by state, the Plains states of Nebraska, North Dakota and South Dakota dominate over others. This is indicative of very strong feeder cattle prices and their impact on cow-calf margins over the past year. The dairy-dominant state of Wisconsin comes in at a distant 4th place. The 2014 ranking differs slightly from 2013, when North Dakota and South Dakota came in at No. 1 and No. 2, respectively, with Nebraska placing a distant 9th.



## AgriBank District Benchmark and Fed Surveys: Wide Variations in Land Values by Region

The AgriBank District continues to monitor agricultural land values through its own annual Benchmark Survey. The survey is completed by licensed real estate appraisers based on benchmark farms selected to represent the lending footprint of affiliated Associations throughout the District. The District's most recent real estate market value survey indicated that District real estate value changes varied widely by region, generally ranging from -6 percent to 16 percent over the 12-month period ending June 30, 2014. Real estate values in one region surveyed increased above that range at 26 percent.

Note that the USDA procedure differs substantially from the AgriBank District Benchmark Survey. The USDA data is based primarily on producer surveys with statistical validity checks and final revisions based on some benchmarking data from the Census of Agriculture. AgriBank District Benchmark Survey land value estimates are based on actual appraised values of selected benchmark farms that remain mostly constant over the lifetime of the survey.

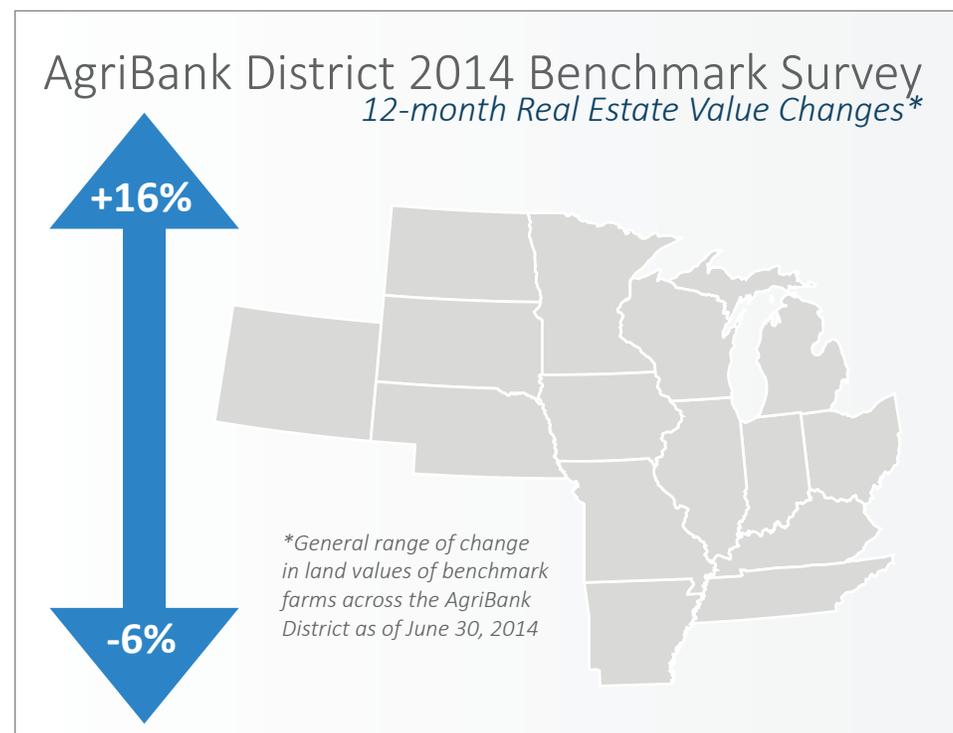
Qualitative surveys of lending officers compiled by the Federal Reserve Banks of Chicago, Kansas City, Minneapolis and St. Louis as of the end of the second quarter 2014 also indicated moderating farmland values. The Federal Reserve Bank surveys cited year-over-year changes in the average value of non-irrigated cropland of -3.5 percent to 6 percent, with respondents indicating that the rate of growth in farmland values appears to be slowing, and in some cases, declining.

### Land Data Glossary

Different surveys gather and report farmland data differently. Major land categories surveyed may include:

- **CROPLAND** – land used to grow field crops, vegetables, or harvested for hay. Idle cropland and cropland enrolled in government conservation programs is also counted as cropland in the survey.
- **FARM REAL ESTATE** – all land and buildings used for agricultural production, including dwellings
- **PASTURELAND** – any land normally grazed by livestock

The USDA considers any land that switches back and forth between cropland and pastureland to be cropland.



Source: AgriBank

# Net Farm Income: Lower Crop Prices Contribute to Drop

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Agricultural producers across the AgriBank District and the nation have enjoyed strong net farm income in recent years. However, a variety of factors, primarily a reduction in crop prices, are expected to contribute to lower net income for crop producers over several years.

## *USDA and FAPRI: Significant Declines in Net Farm Income Through 2018*

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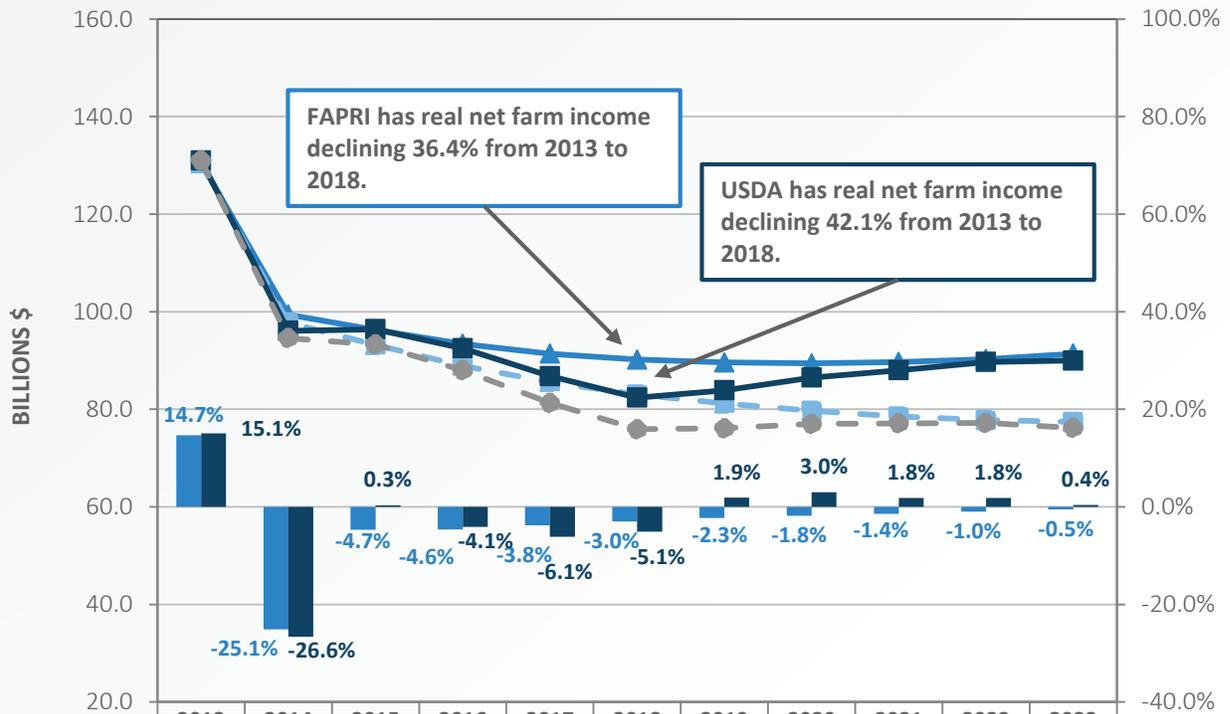
In its November 25, 2014 farm financial indicator release, the USDA projects 2014 total U.S. net farm income at a forecasted value of \$96.9 billion, a decline of \$25.9 billion from the record \$122.8 billion in 2013. This decline can be primarily attributed to a large decline (-\$27.2 billion) in crop receipts due to lower prices, a \$4.6 billion projected decline in other farm-related income, and an increase of \$19.4 billion in farm cash expenses. Partially offsetting this decline is a \$25.7 billion forecast increase in livestock cash receipts due to record high prices for most meat livestock and dairy. Inventory values of both crops and livestock are projected to decline by \$1.3 billion, but this is more than offset by a \$2.9 billion increase in non-cash farm income. Non-cash farm expenses are projected to increase by just \$0.4 billion.

The accompanying net farm income chart shows the long-term NFI (nominal and real) projections from the USDA and Food and Agricultural Policy Institute (FAPRI) long-term baseline projections released earlier this year (USDA in January, FAPRI in March). Both show significant projected declines in real NFI over the next five years with some leveling off thereafter.

FAPRI has real NFI (2013 dollars) declining by 36.4 percent from 2013 to 2018. The bulk of the decline is projected to occur in 2014 (down 25.1 percent). Further significant declines are projected for 2015 (-4.7 percent) and 2016 (-4.6 percent), with an average annual decline of 2 percent per year thereafter. Unlike USDA, the FAPRI forecast does not show any increase in real NFI in any of the years from 2014 to 2023.

# FAPRI and USDA Net Farm Income Forecasts, 2014 Baseline

*Real Values in 2013 Dollars*



	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
FAPRI Real % Change	14.7%	-25.1%	-4.7%	-4.6%	-3.8%	-3.0%	-2.3%	-1.8%	-1.4%	-1.0%	-0.5%
USDA Real % Change	15.1%	-26.6%	0.3%	-4.1%	-6.1%	-5.1%	1.9%	3.0%	1.8%	1.8%	0.4%
FAPRI Nominal	130.5	99.4	96.3	93.4	91.4	90.2	89.6	89.4	89.7	90.3	91.4
FAPRI Real	130.5	97.8	93.2	88.9	85.6	83.0	81.2	79.7	78.5	77.8	77.4
USDA Nominal	131.0	96.1	96.4	92.5	86.8	82.4	83.9	86.5	88.0	89.7	90.0
USDA Real	131.0	94.6	93.3	88.0	81.3	75.9	76.1	77.0	77.1	77.2	76.2

Source: FAPRI and USDA

USDA is significantly more bearish on real NFI in the near term, with a total decline of 42.1 percent from 2013 to 2018. As was the case with the FAPRI forecast, USDA has NFI coming down significantly in 2014 (-26.6 percent) but forecasts a slight rebound in 2015 (0.3 percent) before entering a second wave of significant downturns in 2016 to 2018, averaging a decline of 5.1 percent per year over this three-year period. Thereafter, USDA estimates real NFI actually recovering slightly and growing at an average rate of 1.8 percent from 2019 to 2023.

Both forecasts have real NFI declining to just below 60 percent of the record 2013 value. This paints a quite bleak picture for farm incomes over the next 10 years. However, even if real NFI falls to \$76 billion in 2023, as predicted by USDA, this is still above the long-term average of approximately \$71 billion (in 2009 dollars) since 1929.

# Aggregate U.S. Farm Sector Balance Sheet: Manageable Debt

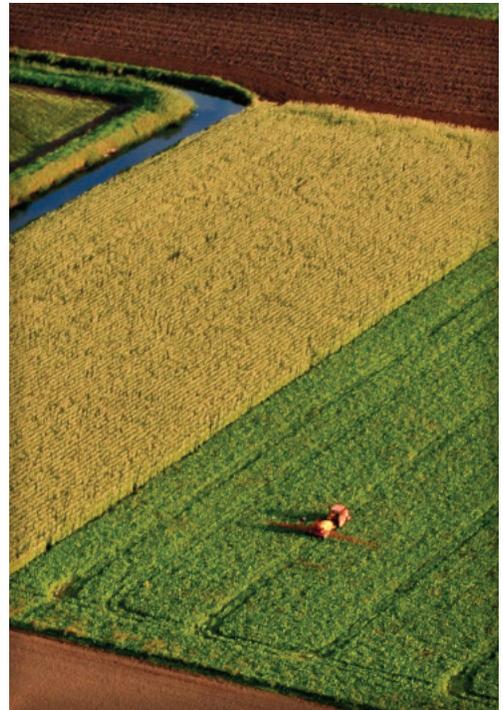


Assets and equity are near 50-year records and growing at a far greater pace than debt. The U.S. farm sector is financially strong and well-positioned to take on declining land values.

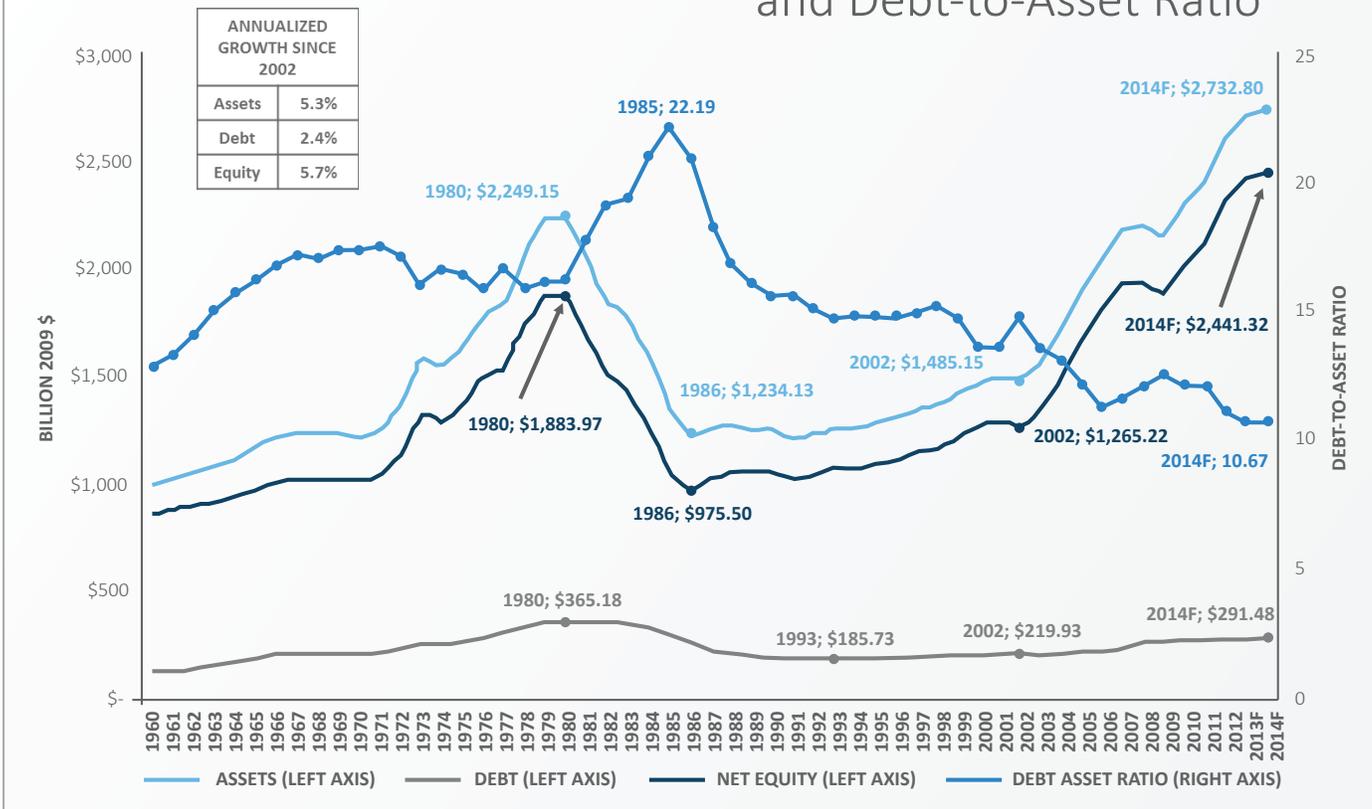
## *Debt: Not the Factor It Was in the 1980s Farm Crisis*

The overall net worth of the U.S. farming sector is projected to increase by 6.1 percent, or \$145.3 billion, in 2013 and 2.3 percent, or \$58.2 billion, in 2014. The farm sector debt-to-asset ratio is projected to reach a record-low 10.75 percent in 2013 and remain relatively flat into 2014. The same holds true for the debt-to-equity ratio for 2013 and 2014.

The accompanying Farm Sector Balance Sheet chart shows the real value of the U.S. farm sector balance sheet major components since 1960 (in 2009 dollars). In real terms, both asset values and equity are projected to set new 50-year records in 2014. Real farm sector net worth has increased consistently since the bottom of the 1980s farm real estate market in 1986, with slight one- to two-year pullbacks coinciding with the recessions in 1991, 2002 and 2008-09. Growth in both asset values and net worth increased at a higher rate starting in 2002. Since then, real asset values have grown at an annualized rate of 5.3 percent per year, while equity has grown at a 5.7 percent annualized rate per year. Over that period, real farm debt has grown at a much slower level of 2.4 percent annualized per year.



## Farm Sector Balance Sheet (Billion Real 2009 \$) and Debt-to-Asset Ratio



Source: USDA 2014 Survey

The balance sheet chart also plots the farm sector debt-to-asset ratio over the same time period. During the 1980s farm crisis, the ratio reached the 50-year high of 22.2 percent in 1985. Since then, the ratio has shown steady improvement through 2014, with the exception of the aforementioned recession time periods where there was a slight retracement in the long-term downward trend. A similar pattern would be seen with the debt-to-equity ratio. In addition, overall debt levels, measured in real dollars (2009), are currently significantly lower than in the early 1980s. Note the limitation of this data, which does not report on the concentration of agricultural debt and assets with individual agricultural producers.

Over time, farmland has become an increasingly important source of equity in U.S. agriculture. Cropland and pastureland average values in the 15-state AgriBank District have grown at an average annual rate of 7.6 percent since USDA started reporting separate cropland and pastureland values in 1997. District farmland values have grown steadily since the end of the farm crisis in 1987, with minor pullbacks coinciding with economic recessions.

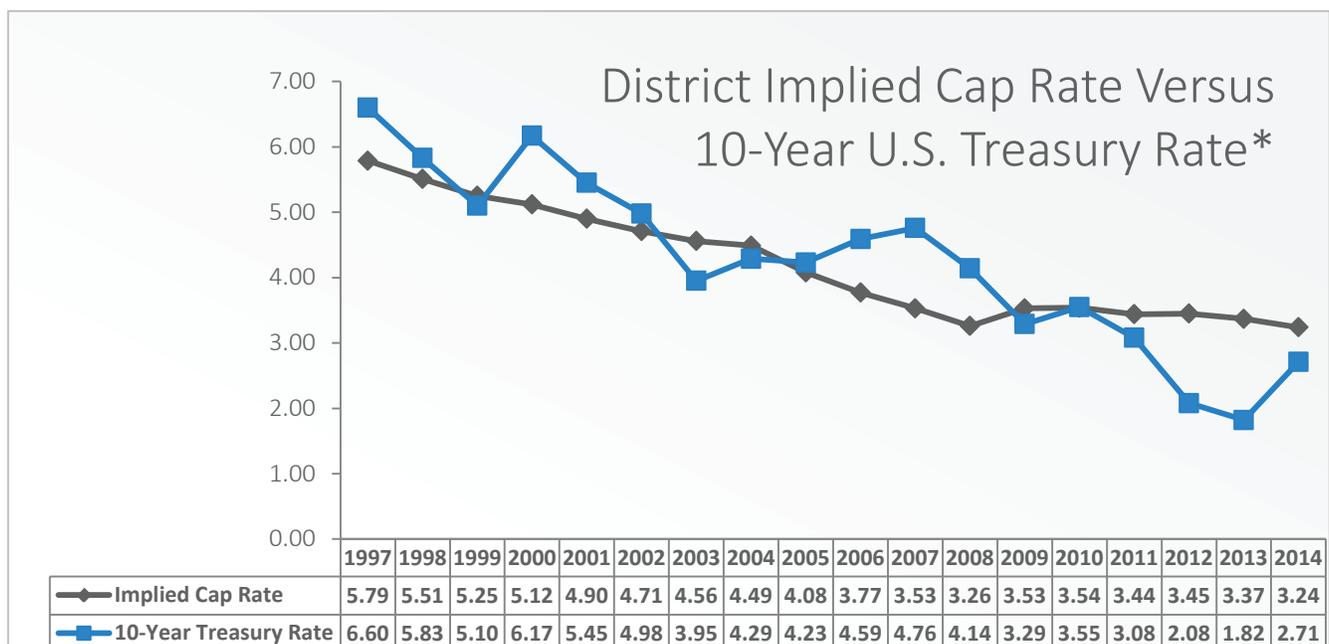


# Are District Land Values Still Headed Toward a Soft Landing?

A year ago, we expressed the opinion that AgriBank District cropland values likely were headed to a soft landing despite the low forecasts and bearish long-term outlook for corn and soybean prices. We based this prediction primarily on three observations. All three still hold true.

## Implied Cap Rate—Barometer of Farmland Values Shows Some Restraint in Decline

First, we noted that the AgriBank District “implied” cropland capitalization rate, which is calculated by dividing the USDA District average cropland cash rent rate by the average District cropland value, had stabilized in the 3.25 percent to 3.6 percent range since 2009 and had not followed the interest rate (measured by U.S. 10-year Treasury yield) to its record lows set in early 2013. This would indicate some restraint in setting the average District cropland value, as the market is building in a higher-risk premium compared to the projected growth rate in cash rents. The accompanying chart shows the plot of the implied cap rate versus the 10-year Treasury rate with the 2013 and 2014 observations added. The results show a slight decline over the past two years in the cap rate, but it still has held well above the 10-year Treasury rate, which started moving higher in 2014.



Source: USDA 2014 Survey

\*The 10-year treasury rate is the 12 month average from July of preceding year through June of current year. Cap rate is equal to the USDA cropland average rental rate (\$ per acre) divided by the USDA cropland average price (\$ per acre) from annual survey conducted in June of each year (see [http://www.nass.usda.gov/Surveys/Guide\\_to\\_NASS\\_Surveys/June\\_Area/Index.asp](http://www.nass.usda.gov/Surveys/Guide_to_NASS_Surveys/June_Area/Index.asp)).



## *Crop Price and Interest Rate Changes: Worst-Case Prediction Shows 25%-30% Drop in Cropland Values*

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Second, we observed, using linear regression and simulation analysis, that District cropland values tended to be more sensitive to changes in interest rates compared to crop prices (for District average cropland values, corn is the dominant price). With the major immediate factor looming over the market being the prospect of lower crop prices, our sensitivity analysis indicated a much smaller impact on cropland values, with a worst-case scenario of declines of 25 percent to 30 percent, compared to the 40 percent declines in the AgriBank 15-state District average farmland value (USDA) from 1981 to 1987. A re-estimation (adding the data from the last two years) and regeneration of forecasts (using current District average corn price and 10-year Treasury rates) from our District cropland value forecasting model confirms that the previous projection of a 25 percent to 30 percent pullback in cropland values still holds.

## *Borrowers and Lenders: Well-positioned for Land Value Correction*

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The third observation we made a year ago was that today's environment is not comparable to the 1980s due to more prudent lending practices (such as loan to appraised value limits), the greater ability of producers to lock in long-term interest rates on farmland mortgages, and the very strong financial position of U.S. agriculture. As indicated earlier, the predicted aggregate debt-to-asset ratios for 2013 and 2014 are at their lowest levels since 1960 at around 10.8 percent. For comparison, in 1981, the ratio was almost 18 percent and climbed to over 22 percent in 1985.

In addition, the USDA aggregate farm sector balance sheet data shows current real (2009 dollars) total farm debt is almost \$74 billion less (in 2009 dollars) than the peak value observed in 1980, just prior to the farm crisis years (\$291 billion versus \$365 billion). Since 2002, the real value of U.S. aggregate farm debt has increased at an annual rate of 2.4 percent, while the aggregate value of farm assets has increased at a 5.3 percent annual rate over the same time period.

Holding aggregate U.S. farm debt constant, a 40 percent decline in real asset values would result in the aggregate debt-to-asset ratio increasing to 18 percent—slightly above the pre-farm crisis values that were in the 15 percent to 18 percent range from 1973 through 1981. To get the debt-to-asset ratio up to the 1985 peak of 22.2 percent would require that aggregate U.S. farm asset values fall by over 51 percent, while holding debt constant.

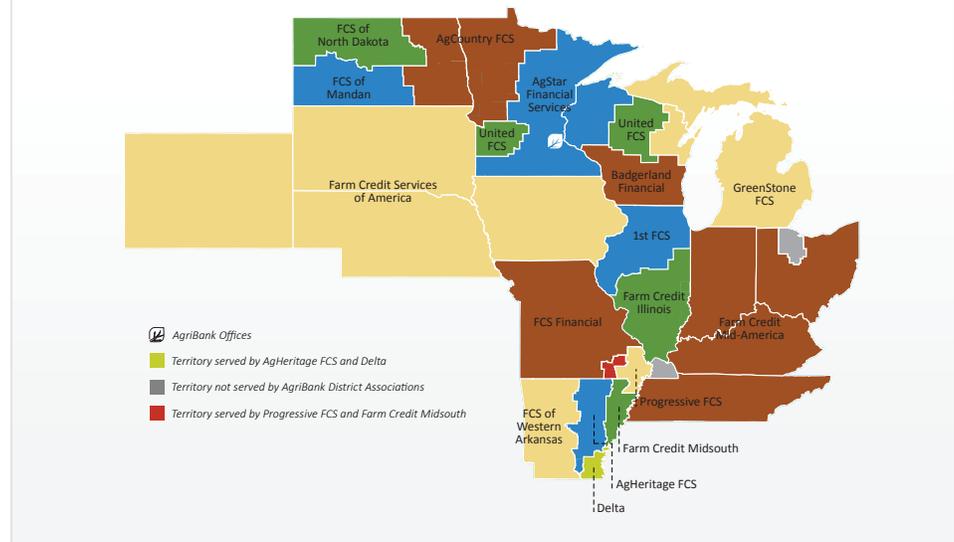
Approximately 85 percent of the aggregate U.S. farm sector asset value is held in the form of real estate. Holding the non-real estate real asset value constant, it would require more than a 60 percent decline in farm real estate values to get the 51 percent decline in total asset values required to push the real debt-to-asset ratio up to the 1985 high.

The bottom line is that the U.S. farm sector is in the best financial shape in over a generation. Some farming operations may face unique challenges that lead to unique financial difficulties. Given current expectations for crop prices, interest rates and farm real estate values, we don't foresee widespread conditions similar to the 1980s farm crisis.

## For more Information

Whether farmers, ranchers or other borrowers are looking to expand operations, take advantage of new opportunities or manage day-to-day operations, Farm Credit can help them access needed financing. Farm Credit offers a wide range of competitive agricultural loans — including operating, equipment, real estate and home mortgage — to help meet their operation’s unique needs. Offerings include multiple interest rate options and cash management solutions that can help hold down the cost of borrowing. Find a local Farm Credit Association at [www.AgriBank.com](http://www.AgriBank.com).

## Associations in the AgriBank District



## About AgriBank

AgriBank is one of the largest banks within the national Farm Credit System, with more than \$90 billion in total assets. Under the Farm Credit System’s cooperative structure, AgriBank is owned by 17 affiliated Farm Credit Associations. The AgriBank District covers America’s Midwest, a 15-state area from Wyoming to Ohio and Minnesota to Arkansas. More than half of the nation’s cropland is located within the AgriBank District, providing the Bank and its Association owners with exceptional expertise in production agriculture. For more information, visit [www.AgriBank.com](http://www.AgriBank.com).

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