Economics Report

Farm Credit Administration
Office of Regulatory Policy
Agricultural and Economic Policy Team

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Summary

The current downturn in the farm economy has some similarities to the crisis that occurred in the 1980s. But there are also important differences. These differences make it highly unlikely that the current downturn will evolve into a crisis of the magnitude experienced in the 1980s.

Prior to both periods, commodity prices, farm incomes, and farmland values boomed in response to a sharp increase in the demand for farm commodities. The boom periods were then followed by substantial declines in prices, incomes, and farmland values. The adjustments in the current downturn have been less extreme thus far than in the 1980s.

Several factors suggest a more modest correction this time around. For one, the interest rate environments are vastly different. In the 1980s, interest rates were extraordinarily high; today rates are very low. And oil prices soared in 1979/80, but they are relatively low today. Also, in the 1980s, we had two recessions compared to the long, slow expansion we are experiencing today. Today ethanol absorbs over a third of the U.S. corn crop compared to a very small amount in the 1980s. Finally, farm real estate mortgage underwriting has been far more conservative during the recent run-up in farmland values, providing lenders and farmers with more of an equity cushion. Risks remain, but the System appears to be well positioned to face more stress.

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Why we are not facing another 1980s-style farm sector crisis

Net farm income in 2017 is forecast by USDA to decline for a fourth consecutive year. Global supplies of many grains and oilseeds are burdensome, leading to low prices. Farm debt continues to climb while Midwestern farmland values continue to decline. These conditions are leading many observers to ask whether agriculture is heading for a crisis akin to the crisis experienced in the 1980s.

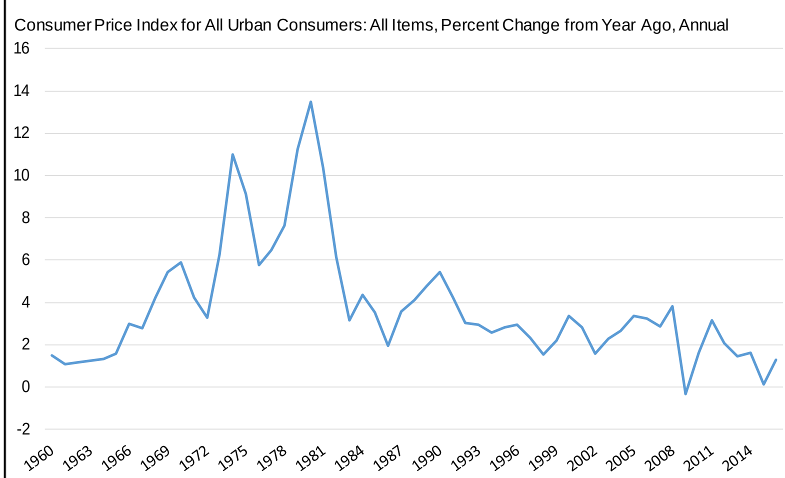
Although today's conditions display some similarities to the crisis of the 1980s, there are also many important differences. See Appendix A. Indeed, it is possible that financial conditions in the farm economy may deteriorate further, but it is unlikely that we will see conditions deteriorate to anything remotely resembling the 1980s crisis.

The Golden 1970s

The crisis was preceded by what might be considered the golden era of the 1970s. Farm exports surged in the 1970s due to, among other reasons, a weak dollar, unexpected demand from the Soviet Union (the Russian wheat deal), and a shortage of fishmeal, which is a protein supplement for animal feed, due to a poor Peruvian anchovy catch. Grain and soybean prices soared as a result. Livestock prices also jumped as production sagged because cattle ranchers were retaining heifers to expand their herds and hog herds were contracting due to low prices in 1971. As a result, farm income surged, reaching a peak in 1973.

Inflation was raging in the 1970s, exceeding 6 percent in most years. The inflation rate (based on the CPI for all urban consumers) hit 11 percent in 1979 and 13 percent in 1980. Consequently, real interest rates were very low, even negative at times. During this time investing in farmland was considered a good hedge against inflation so farmland values soared. The

Figure 1. Inflation exceeded 13 Percent in 1980; it's under 2 percent today



Source: U.S. Bureau of Labor Statistics

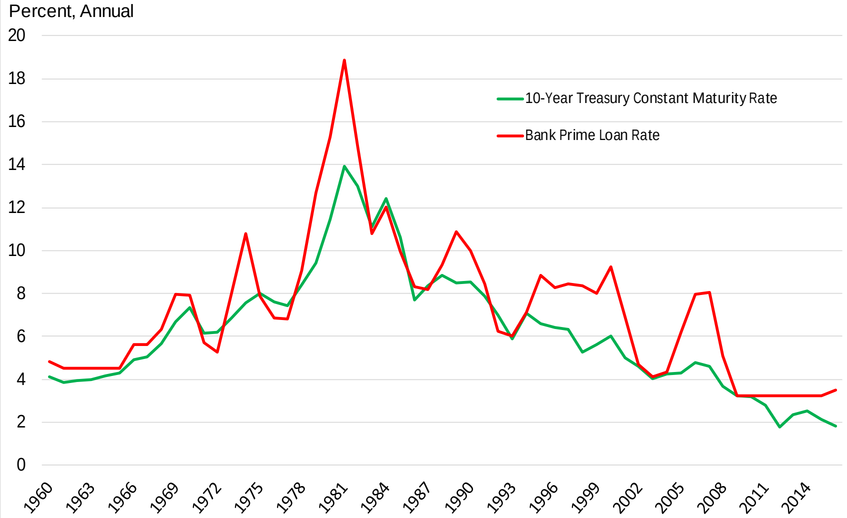
value of Iowa cropland increased more than 3-fold between 1972 and 1981. Farm debt also swelled as high incomes and low real interest rates encouraged borrowing.

A confluence of adverse factors hammered the farm sector in the 1980s

Taming inflation led to soaring interest rates

The Federal Reserve, led by Board Chairman Paul Volcker, took steps in 1979 to snuff out the "Great Inflation" that had been raging for much of the decade. The resulting tight monetary policy caused interest rates to climb to historic heights. The bank prime rate averaged 19 percent in 1981 and exceeded 20 percent on several occasions in 1980 and 1981. The 10-year Treasury bond yield averaged 14 percent in 1981. These interest rates wielded a crushing blow to the many farmers who had taken on debt to finance farmland purchases and other expenses. Real interest rates were also record high during the early to mid-1980s, making borrowing unattractive.

Figure 2. Interest rates were very high in 1981; they are historically low now



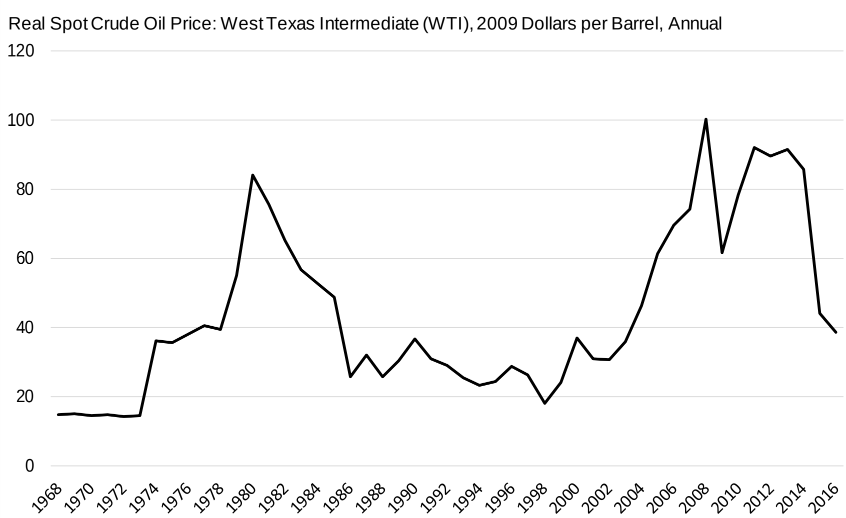
Source: Federal Reserve

Today interest rates are at historically low levels. In response to the Great Recession of 2008 and 2009, the Federal Reserve implemented a very accommodative monetary policy with the goal of reducing both short- and long-term interest rates. Though interest rates are now on the rise, their increases are expected to be measured. These low interest rates have been very supportive of the farm economy, helping to prevent farmland values from falling too quickly and keeping interest expenses in check.

Oil prices spiked in 1979 and 1980

The price of oil increased 167 percent from 1978 to 1980. The principal cause of the rise in oil prices was political turmoil in Iran, which ultimately led to the revolution that overthrew the Shah of Iran in 1979. The beginning of the war between Iran and Iraq in 1980 was another contributing factor. High oil prices provided substantial headwinds for the U.S. economy during the early 1980s. They also led to higher production expenses for farmers by driving up fuel and fertilizer prices.

Figure 3. The oil price jumped in 1979/80; the price is down sharply today



Source: Federal Reserve Bank of St. Louis

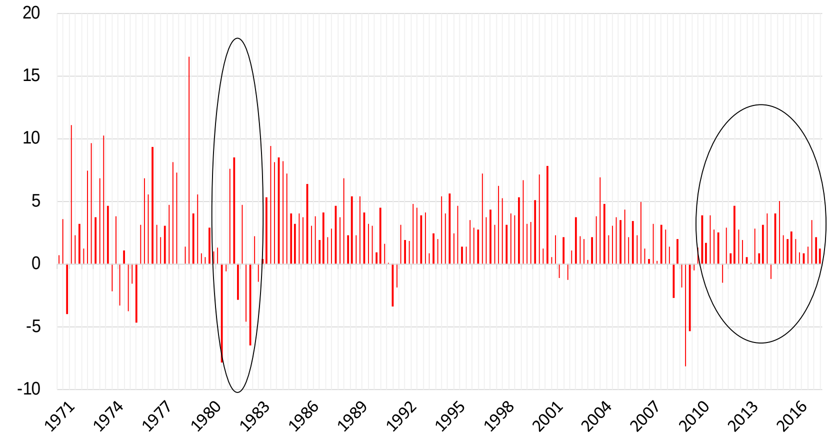
Today oil prices have been falling because of a glut of global supply and the successful use of advanced hydraulic fracturing and horizontal drilling in the United States. Since 2013 the price of oil has come down over 50 percent. In fact, after adjusting for inflation, the price of oil is lower today than in the early 1980s.

Two recessions in the 1980s sapped demand and destroyed jobs

The U.S. economy could not withstand the forces that were pitted against it in the early 1980s. Tight monetary policy, high interest rates, and a spike in oil prices sent the economy into a recession that lasted from January 1980 to July 1980. Then a year later, the economy stumbled again, entering another recession in July 1981. This recession lasted 16 months, ending in November 1982. The unemployment rate peaked at 10.8 percent in November and December 1982, the highest unemployment rate recorded in the post-World War II period.

Figure 4. U.S. recessions in 1980 and 1981/82; now, we're in the 3rd longest post WWII expansion

Real Gross Domestic Product, Percent Change from Preceding Period, Quarterly



Source: Bureau of Economic Analysis

As the principal engine of global economic growth, the U.S. recessions caused growth in the rest of the world to falter as well. World GDP growth slowed substantially in 1980, 1981, and 1982. This would have an adverse impact on global demand for U.S. agricultural exports.

Today, the U.S. economy is in the third-longest expansion in the post-World War II period. Although the expansion has been lackluster, it has been consistent and has contributed to somewhat steady growth for the world economy.

A strengthening dollar in the 1980s made U.S. exports less competitive

The U.S. dollar strengthened significantly during the 1980s, making U.S. agricultural and other exports less attractive to foreign buyers. The high real interest rates in the United States during the early 1980s attracted a large amount of foreign capital, boosting the value of the dollar. From September 1980 to March 1985 the real trade-weighted U.S. dollar index increased about 46 percent.

Figure 5. Dollar strenthened in the early 1980s; also strengthened in recent years

Real Trade Weighted U.S. Dollar Index: Broad, Index Mar 1973=100, Monthly

Source: Board of Governors of the Federal Reserve System

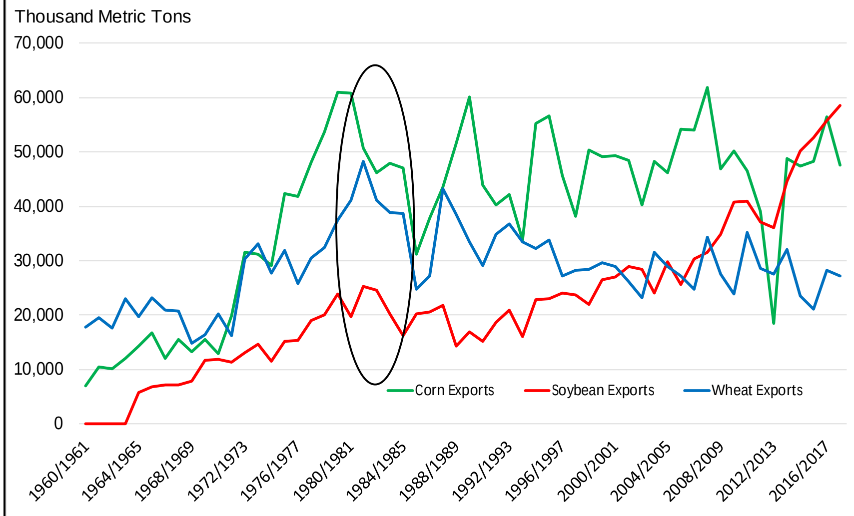
The dollar also strengthened significantly in the more recent period, with the real trade-weighted U.S. dollar index rising 22 percent from July 2014 to December 2016. However, the dollar has been weakening throughout the first half of 2017, dropping about 7 percent during that time.

U.S. Agricultural exports were hit hard in the early 1980s

A strengthening dollar, combined with weak world economic growth, caused corn, soybeans, and wheat exports to drop sharply after a decade of considerable growth. Also, U.S. price supports were above world prices, which reduced export competitiveness. Corn exports declined 49 percent from 1980 to 1985; soybean exports fell 36 percent from 1981 to 1984; and wheat exports were down 49 percent between 1981 and 1985.

Meat exports were also affected by the adverse economic environment. Exports of broilers fell 43 percent from 1981 to 1984, while pork exports declined 72 percent from 1981 to 1986. Beef exports, however, continued to rise during this period.

Figure 6. Exports were down sharply from 1981-86; exports are doing well in recent years



Source: USDA, FAS

Exports have held up reasonably well in the past few years. Soybean exports have been strong thanks to China's seemingly insatiable demand for the oilseed. Both corn and soybean exports benefited from a drop in production in South America in 2016. Wheat exports have been facing pressure from large global supplies and declining U.S. production.

Meat exports have performed well in 2016 and 2017. However, disease issues have been occasionally disruptive in recent years. In 2013 and 2014 the U.S. hog industry was hit by the porcine epidemic diarrhea virus (PEDv). And the turkey and chicken layer sectors were seriously affected by the avian flu in 2015. Even though the broiler sector was not affected by the virus, a number of markets were closed to U.S. broiler exports.

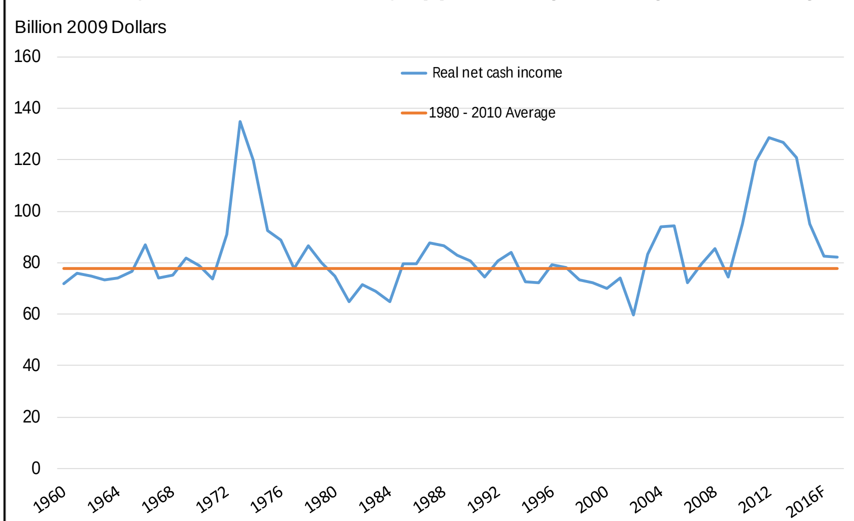
Real net cash income declined sharply in the 1970s and remained depressed in the early 1980s

Real net cash income surged in the early seventies, rising 83 percent from 1971 to 1973 and then proceeded to decline 52 percent over an eight-year period, hitting bottom in 1981. Real net cash income remained depressed for the next three years, below the 30-year average (1980 – 2010).

The late 2000s boom was precipitated by two major developments.

The first was the creation of the renewable fuel standard (RFS) program, which was authorized under the Energy Policy Act of 2005 and expanded under the Energy Independence and Security Act of 2007. As a result of this program, the percentage of the U.S. corn crop being utilized by the ethanol industry for use as a feedstock has increased dramatically. And the second major development was the rapid growth of

Figure 7. Real net cash income sunk below the long-term average in the early 1980s; it is currently approaching the long-term average



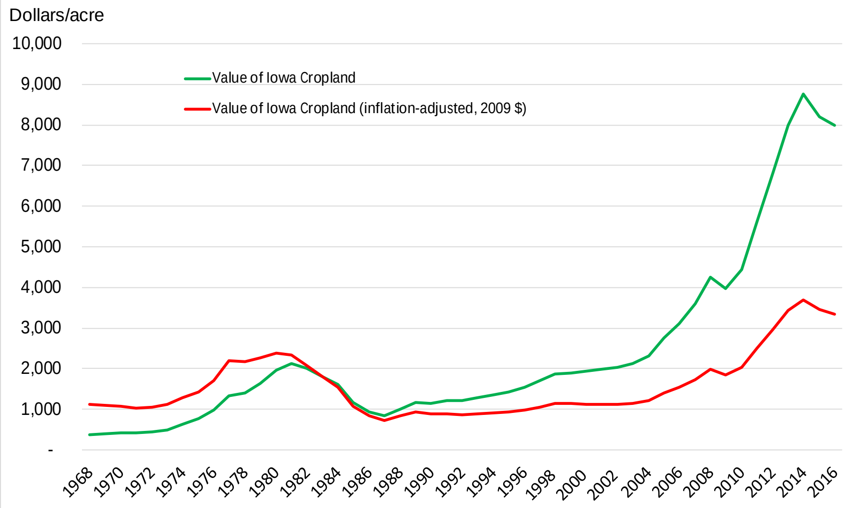
Source: USDA

soybean exports to China for use as feed as their livestock industry expanded to feed a growing middle class.

Real net cash income peaked in 2012 due to drought-induced record high grain and soybean prices. Crop prices then began a four-year slide due to large supplies globally and an end to the rapid growth in corn use by the ethanol industry due to the 10 percent “blend wall.”

Real net cash income increased 73 percent over three years (2009 to 2012) and declined 36 percent over four years (2012 to 2016). While we can’t predict if real net cash income will decline further, it currently remains above the thirty-year average (1980 – 2010).

Figure 8. The average price of Iowa cropland dropped 61 percent from 1981 to 1987



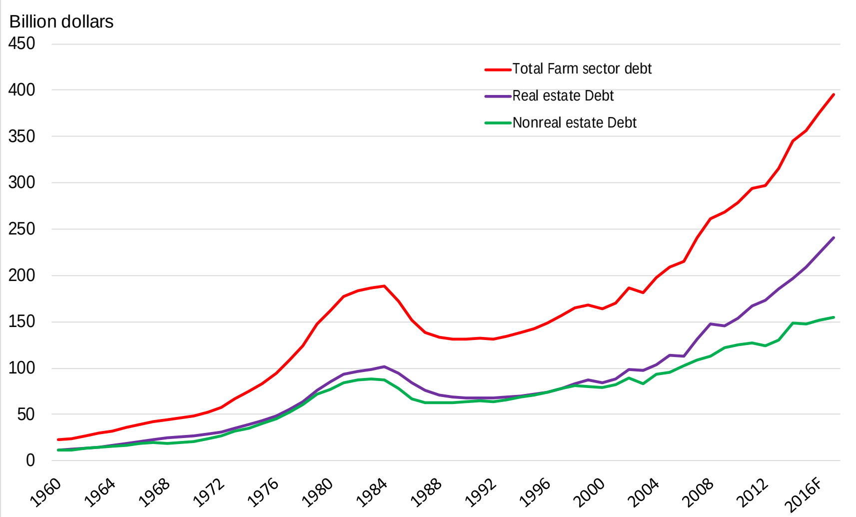
Source: USDA, NASS

Midwest farmland values plummeted in the 1980s

Midwest farmland values responded to the depressed farm incomes and sky-high interest rates by declining dramatically. For example, the value of cropland in Iowa fell 61 percent from 1981 to 1987, according to USDA data. Another factor contributing to the deteriorating farmland prices was the high incidence of forced farmland sales by highly leveraged farmers. The low real interest rates that existed during the run-up in farmland prices in the 1970s encouraged the excessive use of financial leverage to acquire farmland. When real interest rates rose and land values began to sink, any equity the leveraged farmer had in his or her land disappeared. Many of these farmers were forced to sell their land as bankruptcy loomed.

Today, Midwest farmland markets are also in correction mode. However, the current correction appears to be more like a soft landing than the crash that occurred in the 1980s. The USDA data indicate that the value of Iowa cropland peaked in 2014 and has dropped about 9 percent as of June 2016. Other surveys point to larger declines. Nevertheless, the adjustments seem to be measured, and nonfarm investors have maintained interest in farmland as an investment class. Two factors have helped farmland to maintain its value. First, the current low interest rate environment has kept capitalization rates low. Second, conservative underwriting has kept loan-to-value ratios comfortable. Consequently, there is little evidence that stress sales have had much impact on farmland prices.

Figure 9. Low real interest rates and high incomes led to rapidly growing debt in the 1970s



Source: USDA, ERS

Farm debt grew rapidly during the 1970s

Low real interest rates and high incomes provided incentives for farmers to acquire farmland and other farm assets with high levels of debt financing during the 1970s. Indeed, rapidly rising farmland values during that period led to underwriting that was more collateral based than repayment based. During the 1970s, total farm debt grew at an average annual rate of about 12 percent.

Farm debt also grew steadily during the most recent boom period. However, debt grew at a much more subdued rate. Between 2005 and 2012, total farm debt grew at an average annual rate of about 5 percent, less than half the rate of growth in the 1970s. Also, when adjusted for inflation, total U.S. farm debt at December 31, 2016, was still less than it was at its previous peak in 1981.

Measures of the debt burden soared in the early 1980s

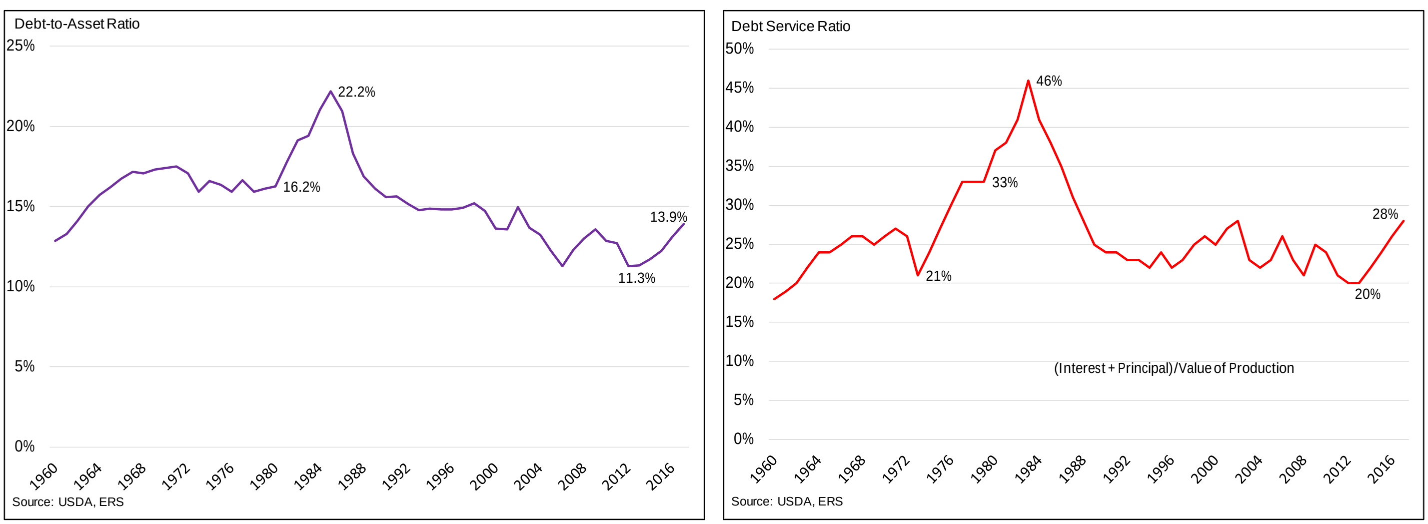
The farm sector's debt-to-asset ratio spiked during the early 1980s, rising from 16.2 percent in 1980 to 22.2 percent in 1985, the year the value of total farm sector assets reached its low point. The ratio then declined on trend for the next 21 years, reaching 11.3 percent in 2006.

The debt service ratio began rising — from 21 percent in 1973, the peak farm income year, to 33 percent in 1979, and eventually to 46 percent in 1983. The debt burden was truly crushing in 1983. Interest rates were high, farm debt was near its peak, and farm income was depressed. It couldn't get much worse.

Today, these measures of the debt burden are also deteriorating. And they warrant close monitoring. However, the degree of the burden is far less than what was experienced in 1985. USDA's forecast debt-to-asset ratio for 2017 is 13.9 percent. It's likely that the farm sector's debt-to-asset ratio will continue to rise slowly as asset values continue to adjust to the new economic environment. However, slower debt growth and the eventual stabilization of asset values will likely result in a debt-to-asset ratio significantly lower than the 1980s peak.

The debt service ratio is also rising. It has increased from 20 percent in 2012, when net cash income was near its peak and interest rates were extremely low, to 28 percent in 2017. However, it isn't likely to reach the debt service ratio of 1983. Barring an adverse supply/demand development or an international trade debacle that pushes U.S. commodity prices to very low levels, farm income is not likely to fall much further. Stabilized farm income, combined with slowly rising interest rates and slower debt growth, should keep the debt service ratio in check.

Figure 10. Measures of the debt burden soared in the early 1980s



Today's farm safety net is broader but not as deep as in the 1980s

Another comparison between the farm crisis of the 1980s and the current situation is the farm safety net's ability to mitigate farm-level stress and its effect on agriculture more generally. Today's farm programs and enhanced crop insurance cover more acreage and commodities, but price protection afforded to farm program crops is generally less than it was in the 1980s. This policy shift has created a crop sector that is arguably more competitive and resilient, although producers with high costs or debt remain at risk.

Conditions could deteriorate further

The farm economy could experience further deterioration without reliving the 1980s. Indeed, there are plenty of risks that bear watching.

Continued low grain and soybean prices could weigh on the grain/soybean segment of the farm economy. Eroding working capital and reduced borrowing capacity could adversely affect farmers' liquidity and financial resiliency, resulting in credit quality problems and the possibility of more forced sales of assets. Farmers who are unable or unwilling to make the operational adjustments necessary to shore up their cash flows may be forced to liquidate.

U.S. agriculture is heavily dependent on export markets. Exports account for anywhere from 20 percent to 70 percent of production for many commodities. A trade war or international hostilities that disrupt the flow of agricultural products to export markets would have serious adverse consequences for American agriculture and farm incomes.

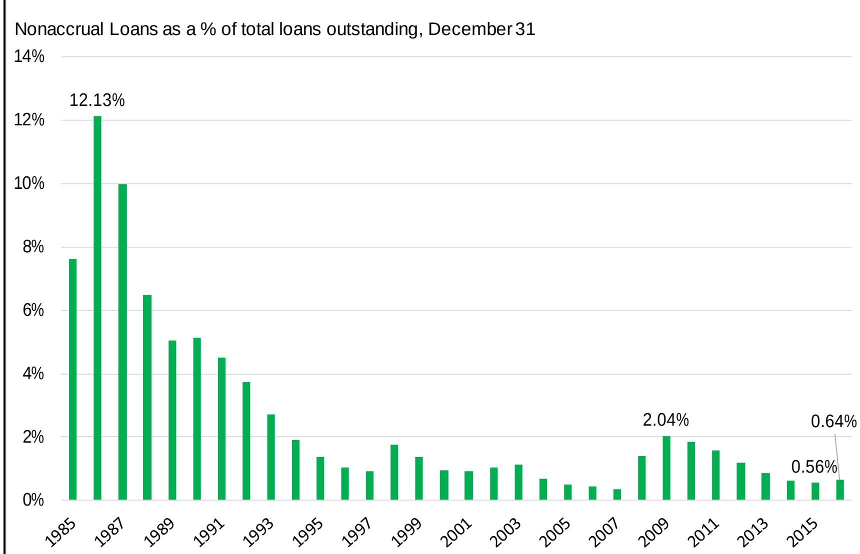
The United States is in the midst of the third-longest post-World War II economic expansion. Sooner or later, we will experience another recession. Because the United States is the largest economy in the world, a recession here usually affects the growth of the global economy. This poses a risk for global demand for U.S. agricultural exports. A serious global economic downturn could lead to reduced exports and lower commodity prices and farm incomes. A U.S. recession would also likely lead to higher unemployment rates, making it more difficult for farm families to find off-farm sources of employment.

U.S. interest rates are at very low levels, but they are rising. If interest rates increase faster and climb higher than expected, they could have an adverse effect on exchange rates, farmland capitalization rates, interest costs, economic growth, and ultimately farm incomes.

The Farm Credit System is well positioned to deal with more stress in its portfolio

If economic conditions in the farm economy worsen, the Farm Credit System would experience some difficulties, but it would enter this period of adversity from a position of strength.

Figure 11. Farm Credit System nonaccruals are at very low levels



Source: FCS Annual Information Statements

Generally, the System's real estate mortgage underwriting during the recent run-up in farmland prices was conservative. Institutions implemented lending caps and other measures to ensure that enough cash was provided up front to result in comfortable loan-to-value ratios.

Although the System's credit quality is expected to deteriorate over the next several quarters because of the current stress in the grain sector, it is currently very good. For example, nonaccrual loans as a percentage of total loans was just 0.64 percent at year-end 2016, up from 0.56 percent a year earlier. This compares with 2 percent in 2009 at the end of the Great Recession and 12 percent in 1986, reflecting the fallout from the 1980s crisis.

The Farm Credit System is in a much stronger capital position, both in terms of quantity and quality. At year-end 2016 the System's capital-to-total-assets ratio stood at 16.4 percent. This compares with just 7.2 percent in 1990 and 10.5

percent in 1985. Earned surplus, which is the highest quality capital, accounted for only about 26 percent of total capital in 1986, whereas it accounts for more than 82 percent today.

The System and other lenders have far more sophisticated risk management systems in place today. Widespread use of the Internet and advanced communications and data management systems enable today's lenders to monitor credit risk and other developments more effectively.

Finally, in the wake of the 1980s crisis, Congress improved the System's safety and soundness by making the Farm Credit Administration an arm's length regulator with specific enforcement authorities. The stronger oversight protects the System from practices that could jeopardize its ability to fulfill its mission. The result ultimately is a stronger and safer farm economy.

Conclusion

The likelihood of the current economic downturn evolving into a 1980s-style crisis is very low because of numerous differences in the economic environment and various institutional factors.

Conditions in agriculture could get worse than they are today, and there are numerous risks that warrant monitoring. However, the Farm Credit System is well positioned to handle additional stress.

Appendix A. Today's situation is similar to the 1980s, but there are important differences

Similarities
• Preceded by a demand shock
• Prices and Incomes rose sharply
• Value of the dollar strengthened
• Farmland values rose rapidly
• Strong growth in farm debt
• Prices and incomes declined sharply
• Farmland values declined
• Farm programs support farm income

Differences		
	Then	Now
• Interest rates	Very high	Very low, but rising
• Inflation	Very high	Very low
• Oil prices	Surged	Declining
• Recessions	Two recessions	Long, slow expansion
• Exports	Declined	Holding up
• Demand from biofuels	Low demand	Substantial demand
• Farmland values	Declined sharply	Controlled correction
• Crop insurance	Limited use	Widespread use
• Farm Safety Net	Narrower/Deeper	Broader/Shallower
• Farm program payments' share of farm revenue	Larger share	Smaller share
• Underwriting	Collateral lending	Conservative
• FCS regulator	Not arm's length	Arm's length