December 2018

Recessions and U.S. Agriculture

By Thomas Halverson
President and Chief Executive Officer, CoBank

Thomas Halverson

How would a domestic recession in the United States impact American agriculture? It's a question that has been pondered on and off over the years by academics, economists and policymakers alike – but which remains quite difficult to answer with any kind of precision.

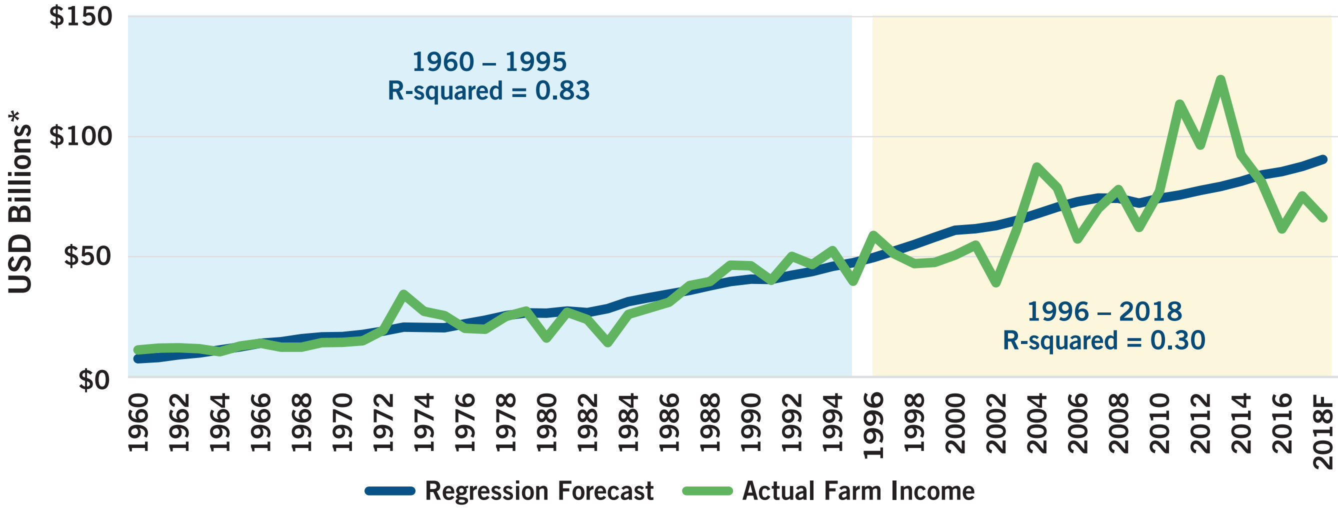
This is perhaps surprising on its face – but less so when one factors in the complex nature of the 21st century farm economy. Consider the following:

- The number of variables that drive U.S. farm income from year to year is immense, including everything from crop yields and weather events to input costs, currency valuations and trade policy;
- Ag commodities vary greatly in their degree of exposure to U.S. consumer spending;
- American farmers are, in aggregate, far less dependent on domestic demand than they used to be, given the tremendous growth in ag exports that has occurred in recent decades;
- Recessions usually involve offsetting impacts that are both good and bad for agriculture. For instance, a weaker dollar (a typical byproduct of a recession in the U.S.) benefits agricultural exports, mitigating declines in domestic demand. In addition, agriculture relies heavily on credit, and therefore benefits from the lower interest rates experienced in recessionary periods;
- Finally, recessions themselves also vary significantly in terms of their causes, effects, severity and duration.

In light of the above, it is no wonder there has not been a definitive paper published on the cause-effect relationship between recessions and agriculture.

And yet the question bears examination nonetheless, especially today. The current U.S. economic recovery dates to July 2009 and is already the second-longest since World War II, and by the middle of next year will become the longest on record. At some point the expansion will end. Given the difficult operating environment that already exists for most of U.S. agriculture, we should be trying as hard as we can to anticipate the impact a recession will have on this vital sector of the economy.

EXHIBIT 1: U.S. FARM INCOME – RELATIONSHIP TO REAL GDP



*Chained 2012
Source: CoBank Knowledge Exchange

I recently asked our staff of CoBank economists to analyze the historic relationship between real GDP and farm income, which is arguably the best available proxy for the overall performance of the ag sector. They conducted a regression analysis from 1960 to 2018, the results of which are illustrated on the above chart.

The analysis shows that, over the course of the time period studied, there has clearly been a positive correlation between real GDP and farm income. This relationship has weakened over time, however. From 1960 to 1995, the so-called "R-squared" value of real GDP as a predictor of farm income was 0.83 – indicating a strong correlation between the two variables. From 1996 to 2018 the R-squared was only 0.30 - still positive but significantly lower than the correlation indicated by the 1960-1995 regression.

What accounts for the decline in correlation over the past 20-plus years? The success that American farmers and ranchers have had growing export markets around the world must certainly be near the top of the list. American agriculture has mitigated some of its exposure to the domestic economy by building a larger export market not directly linked to U.S. GDP growth. The growth of China as a major consumer of U.S.-produced agricultural commodities has been first and foremost in this regard.

No one knows when the next recession will hit, though many economists and other knowledgeable observers currently expect one to commence in the next several years. Those of us who work in, serve and care about agriculture will be watching to see how a general economic contraction actually redounds on farmers and ranchers. ■

CoBank's Knowledge Exchange Division welcomes readers' comments and suggestions.
Please send them to KEDRESEARCH@cobank.com.