



Comparing Current and 1970 Farm Prosperity: Crop Prices

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Overview

It is common to hear references to the farm prosperity of the 1970s during the current period of farm prosperity. Therefore, this post is the first of a series that will examine various aspects of these two periods of U.S. farm prosperity. The series starts with U.S. crop prices since both periods are clearly associated with large increases in U.S. crop prices.

Analysis

This article uses 3 variables: (1) the index of prices received by U.S. farms for all the different types of crops they produce, (2) the index of prices U.S. farms paid for farm production inputs, interest, taxes, and wage rates, hereafter simply referred to as farm inputs; and (3) the U.S. Gross Domestic Product (GDP) price deflator. Economists commonly use the GDP price deflator as a broad measure of price inflation in a nation's economy. The data on prices are from the U.S. Department of Agriculture (USDA), National Agricultural Statistics Service while the data on GDP deflator are from the Federal Reserve Bank of St. Louis.

To facilitate comparison of the two periods, the various price measures are indexed, also called benchmarked, to a year that predates the start of the period of prosperity. These benchmark years are 1972 for the 1970 period of farm prosperity and 2005 for the current period of farm prosperity. The latest calendar year for which price information is available is 2012, the 7th year after 2005. As a result, the 1970 period ends with 1979, the 7th year after 1972. There is no definitive way to decide when to start either period and other alternatives exist, but these are reasonable benchmark dates. As more data becomes available for the current period, the periods can be extended, but 7 years provides a long enough period for an initial comparative examination.

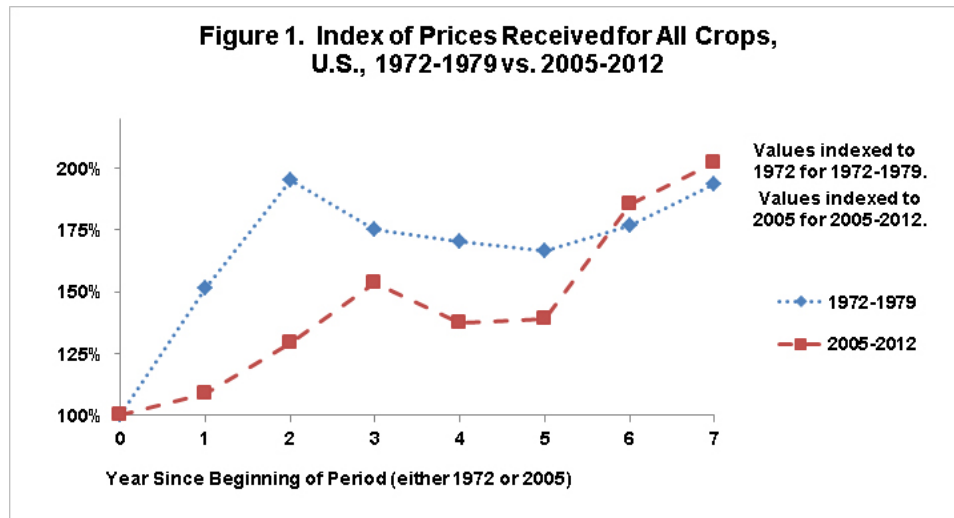
Prices paid for farm inputs are measured for the U.S. farm sector, which includes livestock. A prices-paid index for U.S. crop inputs is available, but only since 1992. Since 1992, the correlation between the index of prices paid for U.S. crop inputs and the prices paid for inputs by the entire U.S. farm sector exceeds +0.95, both for the indexes measured in levels and for the year-to-year change in the indexes (+1.0 is a perfect correlation). Hence, available evidence suggests that the results of this examination will likely not be affected by using the prices paid for inputs for the entire U.S. farm sector as opposed to the prices

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paid for inputs by the U.S. crop sector.

Crop Price Path

By both 1979 and 2012 (year 7 of each period), the index of prices that U.S. farms received for the crops they raised was appropriately double (200%) the index of crop prices at the start of the period (see Figure 1). However, the time path of prices during the two periods differs. Price increases were larger earlier in the 1970s. In contrast, price increases have been more consistent over the current period of prosperity, at least through 2012.



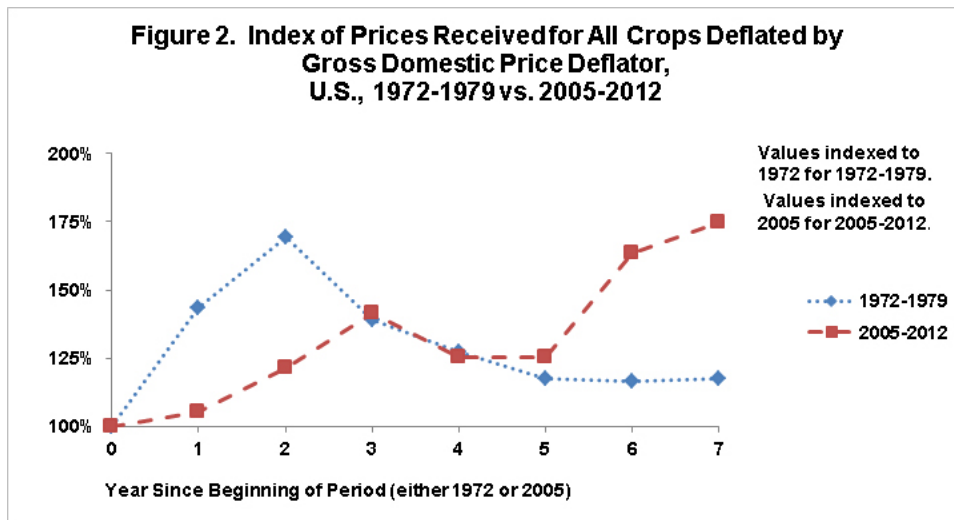
The crop price increases of the 1970s were generated by a number of factors, including large Soviet Union purchases of U.S. public stocks of grains, failure of the anchovy catch in South America, and poor crop growing weather in the U.S. and around the world. The current period of crop price increases are also attributed to a number of conditions, including the increase in biofuels from crops, growth of income demand for food in China and other developing nations, and poor crop growing weather in the U.S. and around the world.

Deflated Crop Price Path

Another factor that affected crop prices in the 1970s was general economic price inflation. For example, the U.S. GDP price deflator was 64% higher in 1979 than in 1972. Thus, when examining data from the 1970s, it is common to deflate the data. For the sake of consistency, crop prices since 2005 are also deflated even though general economic inflation is much lower. The GDP deflator is only 15% higher in 2012 than in 2005.

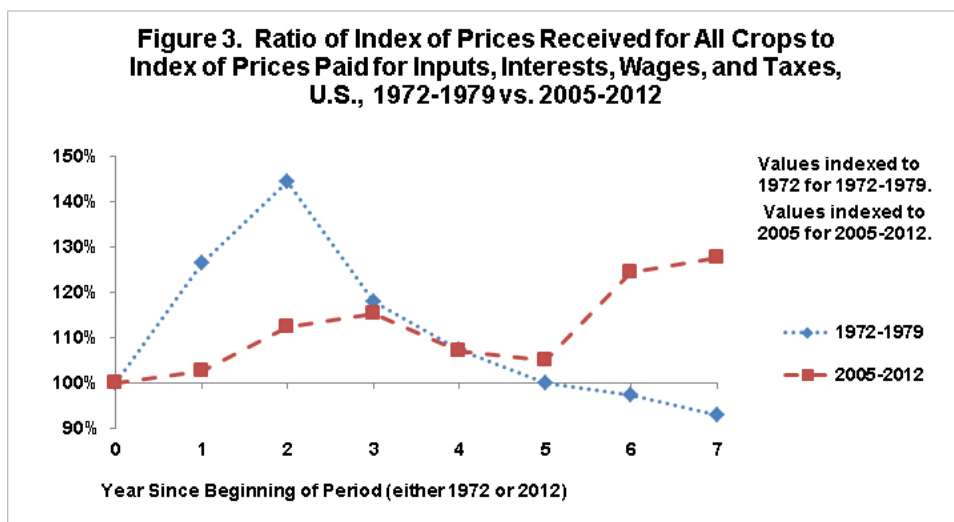
As expected, deflation reduces the magnitude of crop price increases during the 1970s relative to the price increases of the current period (see Figure 2). Thus, deflation makes the time path of crop prices in the two periods even more different. In particular, the increase in U.S. crop prices during the 1970s is concentrated in the first few years, followed by a sharp decline and leveling off.

It is worth noting that the index of all U.S. crop prices in 2012 was 133% higher than in 1974. However, after adjusting for general inflation, the index of U.S. crop prices was 38% lower in 2012 than in 1974. In other words, despite the large increases in U.S. crop prices since 2005, deflated prices remain below the deflated prices of 1974.



Ratio of Crop Prices to Farm Input Prices

Figure 3 presents the ratio of the index of all crop prices received by U.S. farms to the index of prices U.S. farms paid for farm inputs. This ratio is an indicator of the profit margin in the U.S. crop sector. The higher is this ratio, the more favorable is the crop sector's economic situation. It would be useful to adjust the index of prices paid for farm inputs for input productivity, but 2009 is the latest year for which U.S. farm sector productivity is available. For a discussion of this adjustment and its impact, see the *farmdoc daily* post, "Prices Paid for Farm Inputs vs. Prices Received for Crops: Implications for Managing Risk and Farm Policy," available [here](#).



The ratio of crop prices to farm inputs was 48% higher in 1974 (year 2) than in 1972. It then began a decline that continued through 1979 and beyond. By 1978, the ratio was less than the ratio in 1972. The decline did not end until the drought and large government acreage reduction programs of 1983.

In contrast, during the current farm prosperity period, the ratio of crop prices to farm inputs has remained above the ratio for 2005. Moreover, the highest ratios have occurred in 2011 and 2012. Relative to the period's base year, the ratios in 2011 and 2012 are not as high as the ratio for 1974, but they are comparable to ratios for 1973 (year 1) and 1975 (year 3).

Summary Observations

Both the period of U.S. farm prosperity during the 1970s and the current period of U.S. farm prosperity

experienced sizeable increases in crop prices, whether measured in nominal prices, real deflated prices, or relative to crop input prices. However, notable differences exist between the time paths of prices during each period. The differences become more pronounced if crop prices are adjusted for general economic inflation or examined relative to farm input prices.

The 1970 period of farm prosperity is characterized by a sharp initial increase in crop prices. Prices then decline if deflated and especially if crop prices are compared with input prices. In contrast, the current period of farm prosperity is characterized by a continuing increase in both deflated prices and in the ratio of crop prices to farm input prices. Moreover, from the perspective of the ratio of crop prices to farm input prices, only in 2011 and 2012 has the prosperity of the current period approached that of 1973 through 1975.

The different time paths suggest caution in using the 1970 period of farm prosperity as a guide to understanding the current period of farm prosperity. This does not mean that the current period of farm prosperity will continue forever. Economic incentives, behavior, and analysis all suggest that such will not be the case. But, by the same token, the current period has already taken a different path and thus may continue to take a different path. In particular, this post has pointed out that the timing of the increases in crop prices and the role of general price inflation are different. To continue our examination of the similarities and differences between these two periods, the next post in this series will compare the trends in farm income and real estate values over these two periods of farm prosperity.

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