

Why have corn prices been so low?

With less than two months to go in the 2001 crop year for corn, it looks like last fall's corn crop will be the fourth one in a row with a season average price received by farmers of below \$2.00 per bushel. Why are prices so low? We know that with the availability of loan deficiency payments, prices are not supported with non-recourse loans like they used to be. Neither are there set-asides to reduce production. Are stocks excessive?

In the case of corn and other storable commodities, the quantity of stocks left over at the end of the marketing year as percent of the corn actually consumed is often used as a predictor of price. So are corn prices so low because corn stocks are so large or has there been a change in the relationship between corn prices and the stocks-to-use ratio?

To answer this question, we set out to determine if the relationship between corn price and corn stocks-to-use ratio measured during the pre-Freedom-to-Farm days still works today.

We estimated the pre-Freedom-to-Farm relationship between the U.S. season average corn price received by farmers and the ending year U.S. corn stocks-to-use ratio using statistical regression for years 1986 to 1995. Stocks-to-use explained about 70 percent of the variation in corn prices during that period. Next, using the equation just estimated, we predicted the 2001 corn price by plugging in the 2001 stocks-to-use number. What we found was that the 2001 corn stocks-to-use level implies a corn price of \$2.25, using the pre-Freedom-to-Farm estimated relationship, 35¢ cents greater than USDA's estimated corn price for the 2001 marketing year. Does that mean that it takes less ending-year corn stocks to drive prices down to current levels compared to pre-Freedom-to-Farm days?

Well, how did the estimated equation do for other years since 1995? For the first two years of the 1996 Farm Bill (1996 and 1997), the formula showed that the price farmers received was eight to fourteen cents above the expected level. For the next three years, 1998, 1999, and 2000, the average price received by farmers was 21¢, 38¢ and 26¢ respectively below the expected price based on the earlier pattern. Those three years plus 2001 were the same four years in which the U.S. Congress appropriated

Emergency Payments to help supplement net farm income. A look at the data suggested to us that the first two years of the '96 legislation operated much like the earlier period while the last four years did not seem to follow the same pattern.

It appears that stocks have not been so large in recent year as to generate the low prices of late, based on the relationship between corn prices and corn stock-to-use prior to the 1996 Farm Bill. That would seem to imply that corn prices now react differently to stocks-to-use levels, that is, a new relationship/equation is now in force. But is there a statistically significant difference in how price reacts to stocks-to-use in the "pre" compared to the "post" 1996 Farm Bill? In a word, yes.

Using regression and standard hypothesis testing procedures we found that there is a statistically significant shift in the relationship beginning in 1998. From 1998 on the test showed that between prices and stocks-to-use a given level of stocks now generates a price averaging 32¢ lower than it did between 1986 and 1997.

We then ran the same tests using the stocks-to-use ratio for five feed grains, corn, grain sorghum, barley, oats and rye. We did that because in some parts of the country there is substantial substitution among the feed grains. This is particularly true in Kansas-Oklahoma area where there are both large numbers of feeder cattle and a supply of grain sorghum that can be used in the place of corn. The use of the five feed grains increased the significance of the price/stocks-to-use ratio relationship and showed a 33¢ difference between the two periods.

Why did the relationship between corn prices and stocks-to-use ratio change during Freedom to Farm? That's the \$64,000 question. Before taking on that question, we will look at the soybean and wheat markets to see if a similar shift has occurred for them; soybeans next week, wheat the week after that.

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