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Commodity market volatility more perception than reality

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When grain and other commodity prices experienced explosive episodes between 2004 and 2013, the finger pointed toward index traders as the cause. University of Illinois researchers identified and date-stamped both upward and downward price bubbles for grain during that time period. They found that not only were index traders not to blame but that the bubbles didn't last nearly as long as many thought they did.

"To an economist, a bubble is a period when the price is either above or below its true economic fundamental value, which is determined by the market," explained U of I agricultural economist Scott Irwin. "During those nine years, we experienced painful increases in gasoline prices that were actually justified by the market fundamentals; there was just too much demand relative to supply, and price had to allocate.

"The controversy that began to surface was that index traders in commodity futures markets were charged with overwhelming the normal supply and demand in the markets and causing prices to dramatically spike upward. The argument was being made repeatedly to Congress and regulatory bodies that crude oil prices were as much as 50 percent overvalued," Irwin said.

Grain prices were also at record highs, particularly from 2007 to 2008—spring wheat was $25 per bushel and corn soared to the unheard-of level of $8 per bushel.

The researchers used a new test to determine when a bubble started and

when it ended. They found that the massive price spikes in crude oil and grain didn't line up with the bubbles they detected.

"When crude oil prices were spiking in the spring of 2008, for example, when we had that incredible run-up in wheat prices, we didn't find a single day of bubbles," Irwin said. "Bubbles in the grain markets occurred more often during the second half of the year rather than from February to May, which could correspond to periods of production problems. By our test, the prices were increasing dramatically (take corn prices up from $4 to $8 per bushel) but the move was not a bubble."

The longest bubble lasted only 17 to 18 business days. To investors, 18 days may seem like a long time, but when put in perspective, over the nine-year span of the study, bubbles occurred 2 percent of the time.

"Some may think that during price spikes the markets are excessively speculative, excessively volatile, or excessively hysterical," Irwin said. "People see a big price spike and then a rapid drop-off in price and call that a bubble without realizing that it was absolutely necessary to equilibrate supply and demand. This study says that there are some hiccups but overall the market is doing a very good job of accessing and getting the price right."

Irwin said he hopes that objective evidence like this could lead to more rational understanding of what's going on in the commodity markets, but he's not particularly optimistic.

According to Irwin, 99 percent of the conversations people have about market fluctuations are about the dramatic upward price spikes. In reality, when the researchers did find bubble behavior, about one-third of them were downward in price.

Another important implication of this research is on speculation, Irwin

said. "The new index investors are a new version of speculator. These investors have a lot of money, and they can hit the market in waves, so there is potential for excess price pressure. However, commodity futures markets are not the type of market one would suspect of being highly susceptible to price bubbles in the first place.

Irwin used the housing market in 2006 as a counter-example. "This is a market with slow turnover, and it is hard to short the market if you think it is overvalued," he said. "This was compounded by cheap credit and something of a social mania. But in this study there is really limited evidence that speculation was harming producers or consumers of grains."

Irwin said the data in this shorter nine-year time period is very representative of long-term results. He referred to another study that looked at 40 years of grain market data, beginning in 1970.

"The last comparable boom in prices was 1973 to 1976-77," he said. "We actually found evidence of more bubble behavior way back then, than we do now."

More information: "Price Explosiveness, Speculation, and Grain Futures Prices," written by Xiaoli Etienne, Scott Irwin, and Philip Garcia, appears in the *American Journal of Agricultural Economics*.

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