Grain market mystery solved

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Something extraordinary happened in the futures grain market beginning in 2005. The cash price and futures price, which normally converge by the time a grain contract matures, weren't coming together. Instead, they were moving farther apart—and not by just a little. By September 2008, the wheat futures price was an unprecedented $2 higher per bushel than the spot price in Toledo at delivery. What caused this unusual non-convergence was a simple difference in the storage rate, but discovering that took several researchers almost three years of hard work and quite a bit of anxiety.

"Agriculture and producer groups went ballistic," said University of Illinois agricultural economist Scott Irwin about the non-converging price incident. "It looked like someone was really getting taken advantage of. There were hearings. There was an official Senate investigation. The phone calls and emails I received were representative of the firestorm about this issue."

Irwin said that because the phenomenon happened at exactly the same time that grain prices were spiking, people began to put the blame on futures speculators.

"The argument was that index funds and speculators were pushing up futures, causing a bubble, and one piece of evidence of the bubble was the fact that cash and futures didn't converge," Irwin said. "The belief was that the cash market was reflecting the right fundamentals and the futures were badly overvalued by the bubble."

After Irwin and his colleagues first noticed the price discrepancy, they were approached by the Chicago Mercantile Exchange and began working on solving the mystery.

"We had already been studying the spike in grain prices and whether this could be considered a bubble," Irwin said. "But when you have the futures market two dollars above the cash market, your intuition is that the market is just broken. That was what almost everyone in the world argued. The market was broken."

Irwin referred to a popular view at the time as the "Masters Hypothesis," named for testimony by Mike Masters that commodity index investments were to blame for the non-convergence. Irwin and his colleagues refuted the claim, saying that the size and length of time involved in this episode of non-convergence were different from similar price bubbles that were caused by market manipulation.

So, if not an actual market bubble then what was it?

"We got connected with a colleague at the University of California - Davis and together built a theoretical model to try to figure out how these pieces, these arcane specifications in a contract, really fit together and how one affected the other," Irwin said. "It turned out that it was a storage rate that was built into the contract and the rate had been set too low. It was a eureka moment. The Chicago Board of Trade futures market took our recommendation, and it fixed the problem."

Irwin explained that the Chicago Board of Trade had set the contracts storage rates for almost 30 years at 5 cents per month per bushel.

"Everyone knew that the rate could be adjusted and might need to be adjusted as market conditions changed. The smart traders bid the storage rate into the price."

"Our model conclusively shows how the rate-per-month difference properly explained that two dollar gap," Irwin said. "The model finally made sense of it all."

More information: "Futures Market Failure?" was published in an issue of the *American Journal of Agricultural Economics* and written by Philip Garcia, Scott H. Irwin, and Aaron Smith.

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