5-28-1986

Chernobyl: An Opportunity to Exploit Futures Market Speculators

Brian H. Schmiesing
South Dakota State University

COOPERATIVE EXTENSION SERVICE

Economics Newsletter

Editor: Donald C. Taylor

Economics Department SDSU, Box 504A Brookings, SD 57007 Tele: (605) 688-4141

No. 236 May 28, 1986

CHERNOBYL: AN OPPORTUNITY TO EXPLOIT FUTURES MARKET SPECULATORS

Brian H. Schmiesing
Assistant Professor
Grain Marketing
Agribusiness Management

The recent meltdown of the Russian reactor at Chernobyl resulted in a major improvement in futures market prices. The emotionality of the futures market reached a peak when the announcement was made that a second reactor may have melted down.

This newsletter examines how a producer could have implemented a strategy to exploit the overreaction that developed in the futures markets. Although this opportunity has passed, unusual weather developments or unexpected circumstances can again develop to upset the price relationships between the cash and futures markets. What might be learned from the Chernobyl experience?

Prices Used in Analysis

The movement in soybean futures contract prices--as a result of Chernobyl--was dramatic. To study the soybean price patterns, three basic time periods must be analyzed: the pre-meltdown period April 21-25, the meltdown period of April 28-May 2, and the post-meltdown period of May 5-9.

The futures market reaction to the meltdown affected futures contract prices for both soybeans already in storage and soybean production that will become available this fall. The Chicago Board of Trade July 1986 and November 1986 futures contracts are used in the analysis.

The July 1986 futures contract is an "old crop" contract. Actual deliveries of soybeans at the specified cash delivery point markets can be made during July 1986. Therefore, market factors that will affect the cash market prices during July 1986 will be reflected in the July 1986 futures contract prices. It is impossible to deliver soybeans produced in the fall of 1986 to meet the contractual obligation of the July 1986 contract.

The November 1986 futures contract is a "new" crop contract. Actual cash grain deliveries to meet specifications of this futures contract will be in November 1986. This is the first contract for which 1986 soybean production is available for delivery.

South Dakota soybean producers must be concerned with the basis relationship between the futures contract prices and their local cash prices. Sioux City soybean cash prices after the close of soybean futures contract trading were used as the daily soybean cash prices in the analysis.

The Pre-Meltdown: April 21-25

During the week prior to the meltdown, the soybean futures contracts were trading in a fairly narrow price range (Table 1). The highest price for the July contract was $5.28, while the lowest price was $5.18. The trading range for the November contract was $5.00 to $5.08.

Table 1: Chicago Board of Trade Soybean Futures Prices, Sioux City Cash Prices, and the Sioux City Basis for April 21, 1986 Through May 9, 1986.*

Date	Sioux City Cash Price	July Futures Contract Prices				November Futures Contract Prices			
		High	Low	Close	Basis	High	Low	Close	Basis
Pre-Meltdown: April 21-25									
April 21	$5.15	$5.22	$5.18	$5.21	-0.06	$5.04	$5.00	$5.04	0.11
22	$5.16	$5.28	$5.21	$5.24	-0.08	$5.08	$5.02	$5.08	0.08
23	$5.15	$5.26	$5.22	$5.23	-0.08	$5.08	$5.05	$5.07	0.08
24	$5.15	$5.24	$5.21	$5.22	-0.08	$5.08	$5.05	$5.07	0.08
25	$5.16	$5.24	$5.22	$5.23	-0.07	$5.08	$5.06	$5.08	0.08
Meltdown: April 28-May 2									
28	$5.18	$5.25	$5.21	$5.25	-0.07	$5.10	$5.04	$5.10	0.08
29	$5.22	$5.38	$5.25	$5.34	-0.11	$5.20	$5.12	$5.22	0.01
30	$5.25	$5.62	$5.33	$5.51	-0.26	$5.52	$5.23	$5.41	-0.16
May 1	$5.09	$5.50	$5.33	$5.35	-0.26	$5.40	$5.22	$5.24	-0.15
2	$5.12	$5.37	$5.31	$5.34	-0.22	$5.24	$5.17	$5.18	-0.06
Post-Meltdown: May 5-9									
5	$5.19	$5.38	$5.34	$5.38	-0.19	$5.24	$5.21	$5.25	-0.06
6	$5.17	$5.38	$5.31	$5.36	-0.19	$5.28	$5.19	$5.27	-0.10
7	$5.17	$5.36	$5.31	$5.33	-0.16	$5.28	$5.21	$5.23	-0.06
8	$5.21	$5.54	$5.37	$5.39	-0.18	$5.52	$5.30	$5.38	-0.17
9	$5.25	$5.44	$5.37	$5.42	-0.17	$5.44	$5.34	$5.40	-0.15

* By May 23 the July basis had narrowed to - 6 cents and November basis to + 12 cents. The closing prices for the July and November contracts were $5.33 and $5.15, respectively. The Sioux City cash price was $5.27.

Cash soybean prices and the basis were also stable. The Sioux City cash soybean price after the futures market close ranged between $5.15 and $5.16 for the week. The July basis--the cash market price minus the closing futures contract price--ranged between - 6 cents and - 8 cents.

The Meltdown: April 26-May 2

The Russians indicated that difficulties with Reactor #4 began on Saturday, April 26 at 1:23 AM. Actual knowledge of a potential meltdown by other nations did not occur until Monday, April 28, when Swedish monitoring devices detected increased radioactivity. On that Monday, the futures contracts continued to trade in a range similar to that of the previous week.

On Tuesday, April 29, however, the futures markets began to climb rapidly. The rumors of the meltdown and its potential damage on Soviet agriculture circulated in the media and at the futures exchanges. The closing July futures contract price increased 9 cents over the Monday close, while the November futures contract closed 12 cents higher.

However, cash prices increased only 5 cents, to $5.23, at Sioux City. Because the futures contract prices had strengthened relative to the cash price, the July basis had widened to - 11 cents.

During Wednesday morning, April 30, the futures markets surged to much higher levels. A rumor had begun circulating that a second reactor had experienced a meltdown. This fueled the market to a high of $5.63 for the July contract and $5.52 for the November contract. But by early afternoon, the existence of the second meltdown was being questioned. Also, preliminary estimates indicated that perhaps only a small percentage of the Russian crop would be damaged. By the close of Wednesday's trading session the futures market prices had fallen from their daily highs but were still above the previous day's close. The July and November contracts closed at $5.51 and $5.41, respectively.

Wednesday's cash price only increased 2 cents over Tuesday's price. The July basis had widened from a - 7 cents to - 26 cents between Monday and Wednesday. The cash market was not participating fully in the rally.

The Hesitant Cash Market

The futures market rally resulted in farmers selling soybeans to local elevators. This marketing activity depressed the rally in the cash and futures markets. Why?

When an elevator purchases soybeans from a farmer, the elevator will frequently hedge the purchase on the futures market. When an elevator hedges purchased soybeans, it sells futures contracts. If farmers market a larger bushel volume of soybeans, the elevators will sell a larger volume of futures contracts to hedge. This hedging activity will put downward price pressure on futures contract prices.

Also, because of uncertainty about the market direction of the following day, elevators would be "taking protection" in their cash bids. Elevators lower their cash bid to protect themselves against decreases in cash and futures soybean prices in a volatile market.

If grain exporters had been selling an increased volume of soybeans to the Russians or other countries during the rally, the exporters would have been bidding for grain in the cash and futures markets. Instead, we saw the cash price weaken relative to the futures market.

By Thursday, May 1, the rally faltered as more detailed information became available about the actual situation. The closing July futures price dropped 16 cents and the November contract price dropped 17 cents. The cash price followed the futures prices downward and was 16 cents lower on Thursday.

On Friday, May 2, the futures contracts were trading in a narrower range as the market became more certain of the meltdown's "lack" of implications for soybean prices. The large potential carryover of soybeans once again came to dominate market outlook.

Even though the futures prices had dropped, Friday's cash price improved 3 cents over the previous day. The basis was beginning to narrow as the elevators

became more confident that the market had begun to stablizie at a new price level.

The Post-Meltdown: May 5-9

During the following week, the futures contracts again reflected a rather stable trading range. A partial exception occurred during Friday when Western European countries began to take actions to protect their food supplies from contamination by imported products from Eastern Europe and Russia.

The trading range was in the $5.30's for the July contract and $5.20's for the November contract. The November contract prices were closer to the July futures contract prices. The impact of the meltdown was being reflected more heavily in the "new" crop price than the "old" crop price. The expectation was not for a short-run surge in product demand.

Cash Marketing Strategies

Producers that depend on cash markets to establish prices for their soybeans would have gained little from the Chernobyl reactor meltdown. Cash prices increased over the pre-meltdown week low by 10 cents, while closing July futures prices increased 30 cents and closing November futures prices increased 37 cents.

Clearly the major price movement was in the FUTURES market--not in the CASH market. Exclusive dependence upon cash marketing would have precluded producers from taking advantage of a marketing opportunity.

An Old Crop Hedge

In hedging, producers must have a good knowledge of the basis. On April 30 and May 1 the July basis had widened significantly. Was this basis wide enough to justify hedging rather than simply selling old crop soybeans in the cash market? One strategy is to look at the basis for previous years.

South Dakota producers must market their soybeans to cash markets that are not delivery points for the futures contracts. The cash and futures contract prices converge at the futures contract delivery points during a delivery month. However, local supply and demand conditions will be different between Sioux City and the future market delivery points. Because of these differences, South Dakota producers are confronted with a more uncertain basis.

The producer would hedge the old crop soybeans with July futures contract and the new crop soybeans with the November futures contract. Assume the producer hedging old crop soybeans felt that the basis might not return to a "normal" level until the week just prior to the July delivery month. For the producer hedging new crop soybeans, the planned cash delivery date was also the week prior to the November delivery month. For the July basis, the last 5 trading days in June and for the November basis the last 5 trading days in October are presented in Table 2.

Table 2: Sioux City Soybean Basis in Cents Per Bushel for the Last Five Trading Days Prior to the Delivery Month for 1981-1985.

Year	Number of Trading Days Prior to Delivery Month: Five	Four	Three	Two	One	Average for the Five Days
JULY FUTURES CONTRACT						
1981	(¢0.19)	(¢0.15)	(¢0.13)	(¢0.10)	(¢0.10)	(¢0.13)
1982	(¢0.19)	(¢0.20)	(¢0.19)	(¢0.19)	(¢0.16)	(¢0.18)
1983	(¢0.18)	(¢0.20)	(¢0.17)	(¢0.16)	(¢0.15)	(¢0.17)
1984	(¢0.13)	(¢0.13)	(¢0.14)	(¢0.15)	(¢0.13)	(¢0.14)
1985	(¢0.11)	(¢0.06)	(¢0.07)	(¢0.13)	(¢0.08)	(¢0.09)
NOVEMBER FUTURES CONTRACT						
1981	(¢0.68)	(¢0.64)	(¢0.61)	(¢0.61)	(¢0.61)	(¢0.62)
1982	(¢0.27)	(¢0.28)	(¢0.28)	(¢0.29)	(¢0.28)	(¢0.22)
1983	(¢0.45)	(¢0.37)	(¢0.37)	(¢0.33)	(¢0.33)	(¢0.37)
1984	(¢0.13)	(¢0.13)	(¢0.14)	(¢0.15)	(¢0.13)	(¢0.14)
1985	(¢0.25)	(¢0.25)	(¢0.25)	(¢0.20)	(¢0.25)	(¢0.24)

During the Chenobyl meldown rally, April 30 and May 1, the July basis widened significantly to -26 cents. Based on the historical bases for 1981-1985 our expectation would be for the basis to narrow between 6 to 20 cents by the July delivery month. Given the narrow basis prior to the incident, the basis would be expected to narrow by 10 cents or more. This is exactly what happened.

A producer that wanted to sell "old" crop soybeans would have been better off to hedge on the futures market. After the basis returned to a more "normal" spread, the producer would lift the hedge to sell the soybeans in the cash market.

For example, during the post-meltdown week, the basis had narrowed to - 16 cents. Because the cash market became stronger relative to the futures market, a producer would have gained 10 cents a bushel on the basis movement.

Address Correction Requested

Economics Newsletter

OFFICIAL BUSINESS
Penalty for Private Use $300

Cooperative Extension Service
U.S. Department of Agriculture
South Dakota State University
Brookings, SD 57007

BULK RATE
POSTAGE & FEES PAID
USDA
PERMIT NO. G 268

After the post-meltdown week, the basis continued to narrow. On May 23, the July basis was - 6 cents. A old crop hedge would have returned 20 cents per bushel because of the narrowing basis.

New Crop Hedge

When attempting to hedge new crop soybeans, producers must realize the November basis is much more unstable. The November basis ranged between - 68 cents and - 13 cents during 5 trading days prior to the delivery month (Table 2). Producers should talk to a number of elevator managers about what they expect the basis will be this fall, and analyze the forward contract bids offered by the elevator.

Assume the producer made a decision to obtain a price above the loan rate for soybeans for part of the 1986 production. Assume the elevator managers indicated expectations of a November basis of - 30 cents. Previous to the meltdown the producer, commodity broker and lender entered into a three-way agreement to insure that an adequate line of credit would be available to meet margin calls. The producer places with the broker a sell-limit order of $5.49 for the November 1986 contract. The sell-limit order implies that the broker must sell the futures contract at $5.49 or higher. Adjusted for the expected basis of -30 cents, this would imply a cash price of $5.19 before commissions.

The advantage of such an approach is the producer establishes a price objective and then can concentrate on the farming operation. By having a standing order placed with the broker, the producer increases the chance that his/her price objective will be achieved. The futures contract has to only trade briefly at the established order price for the order to be filled. This prevents the producer from suffering from the "I missed it" syndrome.

Using the Speculator

In the Chernobyl incident, the speculation in the futures markets resulted in an abnormally large basis during the price rally. By using a basis hedge, the producer could have sold an "overvalued" futures contract to a speculator. By having the objective of pricing the product after the market returned to a more normal basis relationship, a producer could have been able to increase the net price received.