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Speculation of Cash Grain Inventories: Is there an Alternative?

by

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Grain marketing has become an increasingly difficult task. Numerous uncertainties surround the grain storage decision. High interest rates have lowered the return to storing the physical commodity. Producers carrying grain inventories in on-farm storage experience moisture shrink as the grain dries in the bin. Also, the possibility of spoilage or insect damage exists. Add these costs and uncertainties to grain price uncertainties and one must conclude that a strategy of carrying cash grain inventories involves substantial risk and speculation.

In this newsletter, the economics of speculation in the cash market and an alternative are discussed. Although the traditional grain marketing objective has been to obtain the highest price, producers are also using marketing strategies to improve their cash flows and limit risks.

Storing Grain in a Bin is Speculation

Grain inventory prices can be protected from adverse price movements by forward contracting, hedging on the futures market, price support loans, and the purchase of put options. A producer carrying grain inventories not protected by these marketing tools is a speculator.

An alternative form of grain price speculation involves the futures market. A producer could sell the grain

inventories at harvest and buy grain futures contracts. The following discussion will assume an initial futures transaction to purchase futures contracts. This implies speculation based on the expectation of high futures market prices. Cash inventory speculation also involves an expectation for higher prices. What are the differences between futures and cash market speculation?

Advantages of Futures Market Speculation

Futures market speculators have five basic advantages over the cash inventory speculators. The futures market speculator does not have to pay storage charges to an elevator. S/he does not have the risks that the grain will deteriorate in the bin, or suffer moisture or handling shrink. The futures market speculator only invests the capital required for the margin account, not the entire dollar value per bushel. The margin account requirements have ranged recently between 10 and 15 percent. For example, if the margin requirement is \$750 on the 5,000 bushel Chicago Board of Trade corn futures contract, this represents only 15 cents per bushel. Therefore, the interest expense associated with the speculative position is lower.

The futures market speculator receives a constant reminder in the form of margin calls that price declines are actually reducing the speculator's equity. The losses are real and can not be ignored by the speculator.

The buyer of a futures contract can withdraw money from his/her margin account if prices do go up. This profit from the speculation can be placed in an interest bearing account. The speculator has the ability to remove capital from the speculation.

A final advantage is the liquidity of the futures market and the ability to use specific market orders to achieve price objectives. The speculator can change his/her speculative position rapidly. Also, specific market orders can be used for buying or selling at a specific futures contract price. This advantage enables the speculator to minimize losses and also take advantage of brief upward price movements.

Advantages of Cash Inventory Speculation

Cash inventory speculators have five advantages over the futures market speculators. The futures contract price is a forecast of where cash prices will be during the delivery month. If the futures contract prices are trending upward, this is referred to as a positive carry market. For example, in November of 1981 the corn market had a positive carry (Table 1). The March futures contract was higher than the December contract and this pattern exists for all the futures contracts. If as time passed the futures prices would have stayed the same, the cash market prices would have increased. The cash inventory speculators would obtain higher prices, while the futures market speculator would have not benefited from the price change. In a positive carry market, the futures market is providing an incentive to store the commodity.

Table 1: Chicago Board of Trade Closing Prices for the Corn Futures Contract on Specified Dates.

Delivery Month	Positive Carry On 11/2/81	Negative Carry On 11/1/83
December	\$2.89	\$3.47
March	\$3.07	\$3.44
May	\$3.20	\$3.42
July	\$3.28	\$3.38
September	\$3.34	\$3.09

However, this advantage does not exist when the futures market has a negative carry. A negative carry refers to a futures market, where the prices of later futures contracts are lower than earlier futures contracts (Table 1). In

November of 1983 the futures market was indicating an expectation for lower future prices. If as time passed the futures market prices would have stayed the same, the expectation would have been for falling cash prices. The futures market speculator would not receive a lower price, but the cash inventory speculator would have received a lower price.

The cash inventory speculator's second advantage is that the amount of speculation is limited to the physical amount of the commodity. This limits the ability of the speculator to "over" speculate his or her capital base. The producers typically do not buy corn in the cash market for speculation in their storage facility. If they have expectations for higher prices, they store a larger portion of their own production.

The cash inventory speculator's third advantage is that the speculator does not get into a selling position more than once. Once the commodity is sold, the cash inventory speculator does not submit to the temptation to again buy the commodity.

Unlike the futures speculator, the cash inventory speculator does not pay any commission for trading in the cash market. However, this cost advantage is small with commissions being in the range of 1 to 2 cents per bushel.

A final advantage is that the cash commodity does not have a specific delivery date. The futures market speculator must either offset his or her position by selling their futures contracts or actually take delivery of the commodity.

An Alternative

Producers and the agricultural financial community need to recognize the costs of speculating in the cash markets. This does not mean that profitable opportunities never exist with cash inventory speculation. The problem is that the opportunity costs of carrying these inventories have increased considerably since the early 1970's.

A possible alternative is the development of a special arrangement, where the discipline of the cash inventory speculation is forced on the producer, lender and broker. Producers sell the grain that was going to be used in a cash inventory speculation. The revenue received is placed in a money market account, which has a special limitation on withdrawals. The withdrawals would be linked to the transactions that the producer would initiate in the futures market.

A special futures market account would be created, where the producer would be allowed to buy the identical number of bushels that was previously determined to be a speculative cash inventory. The purchase of the futures contracts would coincide with the sale of the physical commodity. For example, assume a producer was going to speculate on 20,000 bushel of corn. The producer would sell the 20,000 bushel in the cash market and buy enough futures contracts to represent a speculative position as 20,000 bushel.

Assume the cash corn market is at \$2.55 cents per bushel and the producer decides to buy Chicago Board of Trade corn futures contracts. Because the Chicago Board of Trade futures contracts are for 5,000 bushel, the producer would have to buy four futures contracts. The required margin would be \$750 per contract or \$3,000 margin deposit. The producer would put \$2.41 per bushel in the money market account. The \$2.38 equals the \$2.55 received in the cash market minus the 15 cent per bushel margin deposit and a 2 cent per bushel commission fee. The interest bearing deposit would be \$47,600.

Assume the futures price stayed the same and no additional money was deposited in the margin account. If the money market account earned 10 percent and the money was invested for a six month period, the interest earning would be 11.9 cents a bushel or \$2,380. In the cash marketing speculation, this interest income would not be earned.

Withdrawals from the special money market account would be permitted for

margin requirements of the futures market position. Initial margin deposits are required with the purchase of the futures position or through margin calls when the futures contract price drops. Downward price trends could not be as easily ignored as when the commodity is stored in a bin.

If the futures price goes up, the producer would be able to transfer the excess money above margin requirements to the money market account. The producer can therefore earn interest on gains in the speculative position, which is not possible in the cash market speculation. The producer would be allowed to withdraw interest earning at any time during the speculation.

If the producer sold a futures contract, the capital in the money market fund linked to these speculative bushels would be withdrawn. The margin money linked to the futures contract would also be withdrawn. The purpose of the withdrawals would be to directly link the reduction of the market position to the availability of equity for speculation. Cash inventory speculation limits the amount of speculative capital to the price per bushel. If a downward price decline develops, the producer would be less likely to maintain the speculative position when the available speculative equity is smaller.

The producer would only be allowed to buy and sell the speculative inventory once on the futures market. This would eliminate the problem of producers reestablishing speculative positions in the futures market. Producers would be forced to carefully evaluate the decision of entering or exiting a futures market position.

A Warning About Selecting Marketing Alternatives

Speculation in the futures and cash markets is a risky venture and should not be undertaken unless a producer understands all the marketing alternatives. Among these alternatives is using the futures market to hedge the crop in storage. The critical variable

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in this strategy is the basis, i.e., the cash market price minus the futures contract price.

For example, on November 2, 1981 the Minneapolis cash corn price was \$2.40 and the July 1982 corn futures contract was \$3.26. The basis was therefore at $-\$0.86$, a historically wide or large basis. By June 1, 1982, the Minneapolis cash corn price had increased to \$2.61 or a 21 cent gain. The July 1982 futures price had declined to \$2.70 or a $\$0.56$ loss. The basis increased to $-\$0.09$ or a gain of $\$0.77$ during the time period. A cash speculator would have gained 21 cents before interest expenses and storage costs. A futures market speculator would have lost $\$0.56$ before commissions and interest expense.

A basis hedge would have gained 77 cents before expenses. A wide basis at harvest is a signal for producers to hedge--not to speculate. If the basis is narrow, the basis hedge will have limited gain. In 1983, the basis narrowed only from $-\$0.14$ to $-\$0.02$ for similar dates used in the previous example.

Conclusion

In this newsletter, the economics of two marketing alternatives are discussed. An analysis of which is the best strategy to use in the current marketing year is not provided. Further marketing research would be required before such a recommendation could be made.