

## **Inverted Cotton Futures Markets**

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Cotton futures markets affect the marketing and pricing of cotton in many ways. Most often these futures markets have very desirable effects for those who use them for hedging purposes. These same markets can have very adverse affects on the hedger when the markets take on the characteristics known as "inverted markets." Hedging works very effectively when the March futures price exceeds the December futures price by more than the hedgers full cost of storing cotton from December to March. Under these conditions the hedger can place his initial hedge using the December futures contract and then "roll the hedge forward" to the March contract before the end of trading on the December contract by buying December futures contracts and selling March futures contracts. This process of rolling the hedge forward is not feasible when the March futures price is not above the December futures price by more than the full cost of storing cotton from December to March. The latter situation is known as the "inverted market."

Hedgers usually want to place their initial hedge by selling futures contracts in the next futures contract that will mature and then roll the hedge forward by buying the initial futures contract a few days before the end of trading on that contract and selling the next contract that will mature. These contracts that are nearest to maturity usually have the greatest volume of trading, and therefore it is more likely that favorable prices can be obtained. The disadvantage of this process of hedging is that if inventories of actual cotton are to be hedged for long periods of time it is necessary to roll the hedge forward several times. Each time that the hedge is rolled forward there is risk that the futures markets will be inverted, and it will not be feasible to continue the hedge.

Why do futures markets become inverted? Futures markets become inverted basically because the actual commodity is expected to be in very short supply in the near-term and in ample supply at some point in the future. In effect the market that is inverted is sending a signal to the hedger that not only will it not allow the hedger to safely earn the normal cost of storing the commodity, it will penalize him by paying a lower price if the hedge is continued. In this way the market provides a very strong economic incentive to the hedger to sell his commodity to someone who needs it as an input toward producing a consumer product rather than continuing to hold the commodity off the market in storage.

Why are inverted markets of interest to cotton growers? Some farmers actually hedge their cotton after harvest by selling futures contracts. Many farmers participate in programs available to them through their marketing cooperatives in which the cooperative effectively hedges for the farmer by selling futures to fix an approximate price to the farmer. Farmers owning unhedged bales of cotton should be aware of the existence of and consequences of inverted futures markets. These latter farmers need to look very closely at selling their cotton immediately rather than continue to own it until the future time when the futures market is telling them that the price will be lower.

A research study has been completed that looks at the frequency that positive carrying-charge rather than inverted markets occur at crucial time periods. Futures contracts in cotton usually end trading on the fifth busi-

ness day of the month that the contract matures. These markets are frequently very hectic and somewhat erratic in the last few trading days. Hedgers will usually avoid the last few trading days by closing their position by buying contracts several days before trading ends. For the research study it was assumed that the buying of futures contracts to roll the hedge forward would take place anytime in the month preceding the month of maturity.

Specifically, markets were counted as inverted any day that the more distant futures contract month closed trading for the day at a price below the nearby futures contract. Following days were counted as inverted until the distant contract closed at a price 25 points (.0025 dollars per pound) above the nearby contract. The study focused on the period since July of 1972 because prior to that time government programs largely fixed the price of cotton, and futures markets were relatively unimportant.

**Table 1. Percentage of Days with Positive Carry-Charge in Roll-Over Months Of November, February, April and June**

Spread	1972-78 period	1978-84 period
March-December (November roll-over)	59.8	99.2
May-March (February roll-over)	51.3	93.0
July-May (April roll-over)	59.8	78.0
December-July (June roll-over)	33.1	30.8

The table shows a dramatic improvement in the availability of positive carry-charge markets when the March-December and May-March roll-over in November and February between the 1972-78 and the 1978-84 periods. Therefore, extending hedges as far as the May futures contract has been relatively certain in recent years. The April roll-over from the May to July contract has been somewhat more successful in the 1978-84 period. The success in extending the hedge to the new crop period of December continues to be available about one of every three years.