

The 2008 Cotton Price Spike and Extraordinary Hedging Costs

Colin A. Carter and Joseph P. Janzen

Dramatic futures price movements in 2008 caused the demise of a number of U.S. cotton merchants. We outline the events that led these firms to exit and explain how the 2008 price spike resulted in unusual costs of using futures markets for hedging.

Because of the financial crisis, the U.S. Congress has moved to further regulate trade in derivatives, including those used to manage price risk in agriculture. These new regulations would subject most financial derivatives to more stringent capital requirements and margin calls. An October 25, 2009 *New York Times* editorial criticized industry efforts to lobby for regulatory exceptions for commercial hedgers who now trade over-the-counter derivatives. It stated that: “There is no compelling evidence that exchange trading will drive up costs (of hedging).” But the aftermath of the recent boom and bust in cotton prices suggests there may be unusual costs associated hedging on futures exchanges when prices move as dramatically as they did in 2008. This article examines how the 2008 price spike affected cotton merchants who were hedged.

Some of these merchants paid the ultimate price and closed their doors.

The Cotton Market

The United States, China, and India produce two-thirds of the world’s cotton, with China and India the largest source of mill demand. There has been strong yield growth in all major production regions due to the adoption of improved agronomic practices and *Bt* varieties. Until recently, global cotton use had grown dramatically, increasing by 45% from 1998 to 2007. However, the 2008/09 crop year saw the largest year-over-year decline in global cotton use in over forty years; cotton use fell nearly 10%.

Cotton processing in the United States has been in decline since 1997, as U.S. mills have closed in the face of foreign competition. As a consequence, the U.S. cotton industry now relies heavily on exports and is the largest cotton exporter in the world. Cotton is grown throughout the southern United States and California. Upland cotton,

which has relatively short staple length, is produced in all regions. California produces approximately 6% of all U.S. cotton. Due to competition from tree crops and the declining availability of irrigation water, California cotton acreage has declined since the mid-1980s, as shown in Figure 1. As California produced less cotton, it shifted acres to higher quality Pima cotton, a market that is segmented from Upland cotton.

The 2008 Price Spike

Cotton futures are traded on the Intercontinental Exchange (ICE) futures market. This contract has traditionally served as the primary price discovery and hedging tool for U.S. Upland cotton, though merchants also use ICE to hedge purchases outside of the United States. ICE cotton delivery points are located throughout the cotton-producing region, with the exception of California.

Cotton futures prices began to move higher in late-2007, concurrent with a general commodity price boom. Bullish

Figure 1. California Cotton Acreage and Share of Pima Cotton, 1985–2009

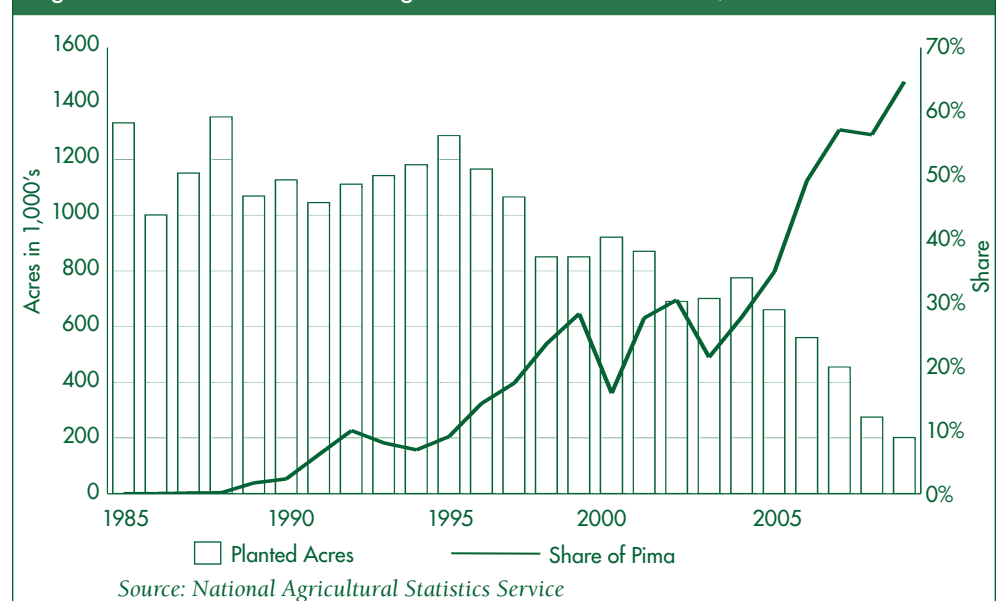
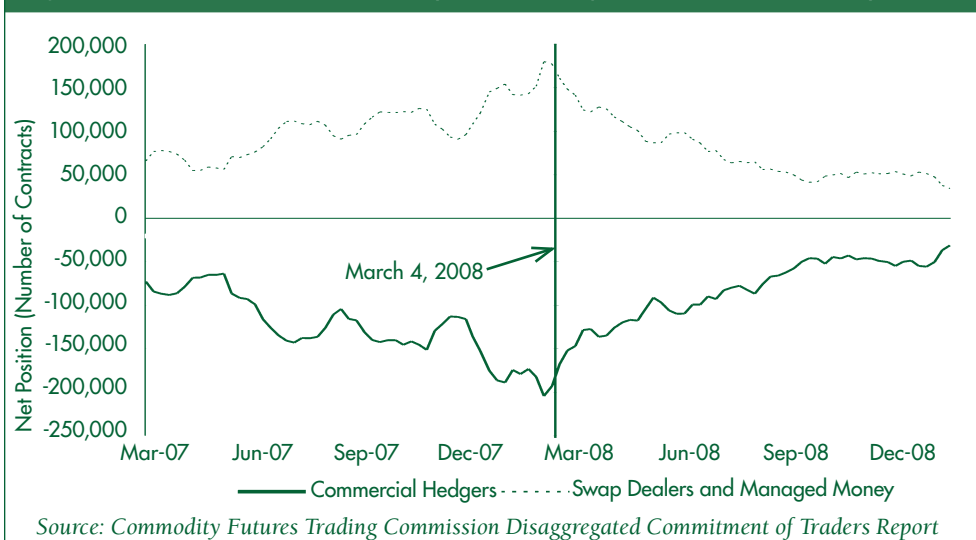


Figure 2. Net Futures Positions Held by Trader Groups, March 2007–February 2009



sentiment for cotton prices was partly driven by the view that high prices for competing commodities would draw acres towards these crops and away from cotton. It was expected that the number of U.S. acres planted in cotton in 2008/09 would be the lowest of any of the previous 25 years. However, very high levels of end-of-year inventories, both in the United States and elsewhere, should have moderated prices.

In addition, there was new speculative activity in cotton futures. Swap dealers, index funds, and other managed money took a strong interest in all agricultural commodities in late 2007 and early 2008. The Commodity Futures Trading Commission (CFTC) facilitated this flow of new money into agricultural futures by relaxing position limits. It is standard practice for cotton merchants to hedge forward purchases of physical cotton by selling futures. In the presence of greater futures liquidity, merchants increased the size of their short position as they purchased more and more physical cotton. Figure 2 displays the net positions of commercial traders, swap dealers, and managed money, as reported to the CFTC. Commercial hedgers, mostly cotton merchants, were net short 204,443 contracts on February 26, 2008, representing about 21.3 million bales. To place this figure in context, U.S.

production was approximately 19.2 million bales in 2007/08 and 12.8 million bales in 2008/09. This means that open futures positions held by commercial hedgers exceeded the size of the U.S. crop. This was a very vulnerable position for cotton merchants.

Cotton futures prices are displayed in Figure 3. At the end of trading on February 29, 2008, May cotton futures closed near contract highs at 81.86¢/lb. On the next trading day, March 3, cotton prices spiked, hitting limit amounts that stopped trading for the day. Trade in options on these futures contracts continued and observed market volatility increased the risk premium priced into options. On March 4, prices spiked again, with May futures reaching 92.86¢/lb mid-morning. It is believed that the second increase was driven in part by merchants buying futures to unwind the short positions on which they had incurred large losses the previous day.

Futures trading is highly leveraged because traders post "margin" typically equal to 5–10% of the futures contract value. At the end of each trading day, futures positions are "marked-to-market." If prices move against the trader, more margin money must be posted. The amount of margin money required in ICE cotton in early March 2008 was based on volatility implied

by options prices. Continued trade in options after daily price limits were hit meant that cotton merchants faced unprecedented margin calls.

The cause of the price spike is still unclear, but we do know that cash prices remained far below nearby futures. Average transacted cash prices throughout the cotton belt, normally 4–6¢ under nearby futures, were 25¢ under on March 4. Adding to the uncertainty was the elimination of floor trading for cotton futures; March 3, 2008 was the first day that ICE cotton trading was completely electronic. Anecdotal evidence suggests that commercial firms relied on information relayed by floor traders and this was lost with the move to full electronic trading. After the spike, futures prices fell quickly to approximately 70¢/lb. Subsequently, futures prices declined further, falling below 40¢/lb in early November 2008.

Effects on Merchants

The price spike had significant, negative, and unexpected consequences for cotton merchants. Among others, three large family-owned merchants, all with a presence in California, exited the industry. In November 2008, Weil Brothers Cotton Ltd. announced that it would cease operations in 2010. They were one of the oldest cotton merchants in the United States, and were the exclusive marketing arm for California's San Joaquin Valley Quality Cotton Association. Dunavant Enterprises announced in August of 2009 that it was holding merger talks with Allenberg Cotton, a division of Louis Dreyfus. The conclusion of this merger would combine two of the three largest cotton merchants into one firm. Both Weil Brothers and Dunavant stated that cotton trading had become riskier than in the past and that drove their exit.

The third exiting firm, Paul Reinhart Inc., was the U.S. subsidiary of Swiss firm Paul Reinhart AG. Reinhart filed for bankruptcy protection on

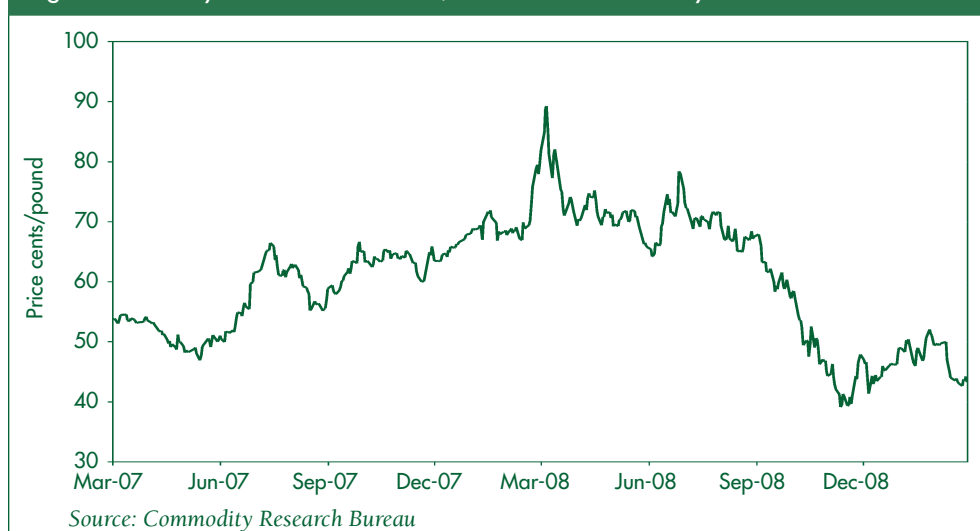
October 15, 2008. Like other merchants, Reinhart entered into forward contracts with growers in late 2007 and early 2008, hedging those purchases by selling futures. The run up in futures prices meant that Reinhart was faced with about \$100 million in margin calls. On March 4, Reinhart closed their futures positions and entered into “various options trades” to try to maintain hedges in an effort to reduce margin risk and free up liquidity. But Reinhart incurred further losses on these trades, causing it to default on its loans.

Reinhart restructured its credit facility, giving its lenders increased control over its operations, and began to seek takeover bids. In July 2008, it obtained a bid from Allenberg Cotton that would ensure performance on its existing forward contracts, but the lenders vetoed this bid. In the meantime, cotton prices fell and Reinhart made significant gains on the short futures positions it established following its restructured lending arrangement. Reinhart states in filed bankruptcy papers that its lenders swept \$180 million of these gains from its brokerage accounts. After being forced by its lenders to liquidate most of its futures positions in early October 2008, Reinhart filed for bankruptcy. Growers who held forward contracts with Reinhart are unsecured creditors in the bankruptcy proceedings; they may receive little or no compensation for their losses.

Implications for the Cotton Industry

The effects of the futures price spike on firms such as Reinhart, Dunavant, and Weil Brothers present new insights into extraordinary costs of using futures markets during unusual price activity. The Reinhart bankruptcy case provides evidence of how credit constraints can play out for hedgers, binding their operations. In this case, Reinhart was enabled by its creditors to

Figure 3. Nearby Cotton Futures Price, March 2007–February 2009



nominally continue operations, but its existence was as a ward of its lenders.

The mark-to-market margining process of futures exchanges does ensure that the risk of a counterparty failing to honor their contract is minimized, but margin calls may require more cash than merchants have on hand. If the futures positions of cotton merchants were not marked-to-market daily, the gains or losses on their positions would be offset by gains or losses on their physicals, once realized. This would be the case if they used over-the-counter derivatives such as swaps to manage risk because swap contracts settlement is generally synchronized with cash market gains and losses.

While several cotton merchants have exited because of the price spike in March 2008, most of the long-term impacts will be borne by growers. The consolidation of large firms like Allenberg and Dunavant and the departure of other merchants means less competition and fewer options for forward selling. Even in California, the exit of firms due to events in the Upland cotton market means fewer marketing options for Pima cotton.

If cotton merchants continue to face higher costs and greater risk in using futures as a hedging tool, it is likely that they will require higher profit margins

as compensation for bearing this risk. These higher margins manifest themselves to growers as weaker basis levels. Merchants may be less willing to maintain futures positions and may continue to offer fewer forward selling opportunities. The 2008 price spike for cotton suggests that risk management using exchange-traded derivatives may entail extraordinary costs that were not previously given much consideration. These costs may be relevant to the ongoing reform of derivatives regulation.

Colin Carter is a professor in the Department of Agricultural and Resource Economics at UC Davis and the director of the Giannini Foundation of Agricultural Economics. He can be reached at cacarter@ucdavis.edu. Joseph Janzen is a graduate student in the ARE department at UC Davis and he can be contacted by e-mail at janzen@primal.ucdavis.edu.