Commodity markets are attracting a new class of participant. *Hilary Till* of Premia Capital Management looks at what's drawing them in

Evolving markets

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★ In the recently published *Intelligent Commodity Investing*, Joseph Eagleeye and I collected authors from across the globe in order to provide a comprehensive view of commodity investing.

We have always enjoyed our active participation in the commodity markets. These markets are like a big tent that comfortably encompasses a wide variety of talented professionals from global-macro strategists, street-smart practitioners and careful fiduciaries, to brilliant quants.

These markets have recently attracted new classes of participants such as algorithmic high-frequency traders, sophisticated product structurers and Chinese entrepreneurs. *Intelligent Commodity Investing* identifies three main fundamental changes that have facilitated the entry of new participants to the market:

- the move to electronic trading;
- innovations in the commodity-structured-product arena; and
- the impressive growth in futures trading in China.

This article excerpts from authors who discuss each of these fundamental changes.

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Dowd (2007)

The move from open-outcry to electronic trading

The following section is excerpted from Dowd (2007).

The commodities markets for natural resources have been among the last futures markets to convert to electronic trading.

At a certain point in time, open outcry may have been the most efficient means of price discovery, but to say that it remains that way today would be like arguing that the abacus is the most efficient way to add large numbers. A look at the logistics involved in open-outcry order execution explains why.

I had the opportunity in 1991 to work for a few months in the grain room of the Chicago Board of Trade (Cbot). As of October 2006, not much had changed since that time. I remember my first impression being one of surprise at how antiquated the entire process seemed to be. To say that no changes had been made since 1851, when the first forward contract for corn traded, would not be too far from the truth.

Let's look at an example of how the grains market functioned right up until 2006. Let's say a customer wishes to buy 5,000 bushels of corn with a stop order to sell at a certain price, which is just below where the market is trading.

The customer calls the upstairs order desk of his/her futures clearing firm and places the order. The upstairs order desk calls the trading floor phone desk to relay the order. The phone clerk writes the order on an order slip, time-stamps it and hands it to a runner who then makes his/her way over to the corn pit – sometimes quickly, but sometimes at a pace that better reflects the fact he/she is making five dollars an hour with no fringe benefits.

Upon arriving at the corn pit, our intrepid runner looks for the filling broker who executed orders for his/her firm. If it were a market order, the filling broker would take the order, fill it at the best price possible and then return it to the runner. In this case, our customer is trying to sell corn on a stop at a price that was just below the current price. In this situation, the filling broker would place the order into his/her 'order deck' to be filled if the market trades down to the designated price.

Let's assume that the market trades lower and our customer's stop order is elected and filled. Our customer sees on their screen that their order should be filled and calls to see what price it was filled at. The entire process now repeats itself. The runner is directed by the phone clerk to go over to the corn pit and see "if that guy's order has been filled".

Upon his arrival at the corn pit we see something they typically do not mention on the Cbot tour. In the Grain Room, when the filling broker fills an order, he writes the prices on the order slip and then throws it on the floor along with the dirty Kleenex, ripped-up newspapers and gum wrappers to be retrieved at some point by the runner. All of this refuse, including our corn fill, is being kicked by every person who walks by. Eventually the order slip is located, and the fill is relayed back to the customer.

The entire process is time-consuming and labour-intensive. My point in relaying the journey of our corn stop-loss order is to emphasise exactly how inefficient this is in the present day. The futures markets are not the only culprits in trying to hold onto these antiquated procedures. From inter-bank foreign-exchange trading to equity trading, the established and typically profitable brokers have always viewed change as threatening to their business and have been reluctant to embrace it. I think it should come as no surprise that, when given similar costs and liquidity, most customers prefer to execute in the electronic markets.

An electronic exchange is very effective in addressing the physical limitations of the open-outcry model. It also removes the one-person, one-market limit. Whereas in a physical open-outcry pit, a market-maker can be physically present in only one trading pit, in electronic trading an off-the-floor market-maker can make markets in multiple products at the same time. Furthermore, the number of these market-makers is not limited by the pit-size constraint. An off-the-floor trader has seen this as a benefit because it decreases the granularity of the prices shown. In other words, I consider a market that has a bid quantity of 1,000 contracts and an offered quantity of 1,000 contracts to be of better quality if it is 100 market-makers showing a two-way price in 10 contracts each, as opposed to a market with two market-makers showing a two-way price in 500 contracts each.

Because electronic trading enables lightning fast execution, a whole new class of traders is starting to participate in the commodity markets, as very short-term algorithmic trading has finally become possible.

Commodity structured products

An additional significant innovation in the commodity markets has been the development of sophisticated structured products, which in

Few changes took place in the trading process at Cbot between 1851 and October 2006

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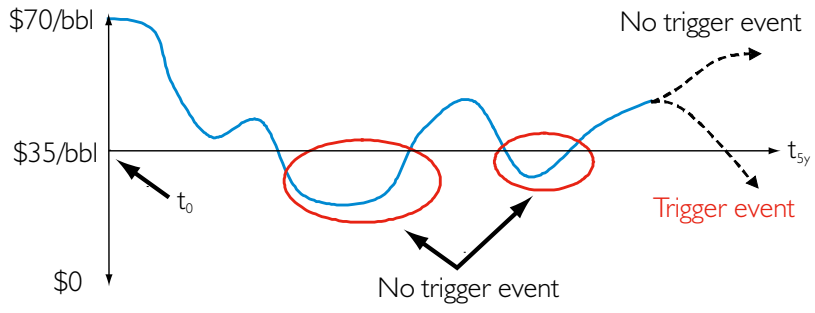


F1. Payout profile of a commodity trigger swap

Source: Schwab (2007)

turn have built on innovations from the credit-derivatives markets.

The following section is excerpted from Schwab (2007).

One new investment vehicle for obtaining commodity exposure is through collateralised commodity obligations (CCOs). These instruments repackage commodity price risk in a rated fixed-income format akin to a collateralised debt obligation.

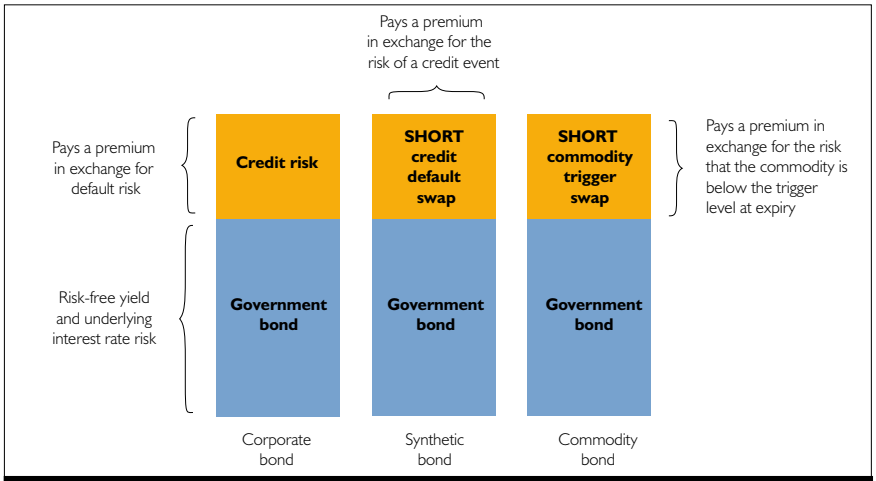
In exchange for taking this risk, purchasers should theoretically earn a positive risk premium. In a CCO, this forms part of the coupon paid to investors.

CCOs are composed of multiple commodity trigger swaps (CTSs). These are the mechanisms that transfer commodity price risk from one party to another. In exchange for an upfront premium, the seller of the CTS takes the risk that a commodity price is below a preset level at the maturity of the swap. If this occurs, the CTS buyer receives a payment equivalent to the notional of the CTS; if not, no cashflows take place. The loss is thus binary: if the final price is above the trigger there is no loss; if below, the loss is 100% of the notional value of the CTS. The observation of this loss is only at maturity; thus prices can fall below the trigger level prior to expiry without resulting in a loss.

The payoff profile of a crude oil CTS with a trigger at US$35/barrel is set out in figure 1.

So in essence, an investor in a CCO is short multiple commodity put options. These put options in turn are digital options. This is illustrated in figure 2, which compares a CCO to corporate bonds and synthetic bonds.

The development of the commodity-structured-products market has allowed for an unprecedented expansion in the range of products, allowing investors to diversify their portfolios, reducing their overall risk. At the same time, this influx of risk capital has made commodity markets more liquid, allowing them to perform their primary function: the transfer of risk from producers to investors or speculators. As far as a copper mine may appear from a structured financial instrument, the transfer of price risk from the miner to investors is necessary for the miner to expand production to meet seemingly ever-growing global demand.



F2. From corporate to commodity bonds

Replacing credit risk with commodity risk *Source: Schwab (2007)*

Chinese commodity markets

Yet another dynamic factor in the commodity markets is the development of futures exchanges in China.

The following section is excerpted from Ronalds and Xueqin (2007).

Students of the markets can't have avoided a drumbeat of news about China in recent years. Its seemingly bottomless appetite for US Treasury securities has made it a major factor in debates over the level and direction of interest rates. Its stock markets are evolving and will eventually dominate Asian equity markets. China's pell-mell growth

has been 'driving' commodity prices. Chinese rogue traders have incurred spectacular losses in global oil and metals markets. China even has a modest slate of commodity markets of its own, to which it has cautiously been adding in recent years. Table 1 illustrates the volume of trading in major futures contracts in China's three futures exchanges.

Observers new to the China scene may understandably have the impression that it only recently took its first tentative steps into commodity markets. In fact, the early years of this century were a new, sober chapter in Chinese commodity markets after the decade of the 1990s, for which words such as *tumultuous* and *chaotic* might be too mild. China's domestic commodity markets during the 1990s were a bizarre collision between a nascent, as yet unregulated capitalism and a still predominantly centralised economy dominated by state-owned enterprises.

The Chinese futures industry and its chief regulator, the China Securities Regulatory Commission, have done a remarkable job in reforming what was, during 1990s, an industry out of control. Since two sets of reforms during the 1990s, abuses have been contained, volume growth has returned, and acceptance of listed futures as a risk-management tool is soundly rooted in both industry and government.

Given China's growing importance on the world stage, one would expect that its commodity markets will become extremely influential in the near-term future.

T1. Trading volume in futures contracts

For contracts introduced on Chinese futures exchanges after 1998

Figures below express the number of contracts

Source: Ronalds and Xueqin (2007)

Exchange/ Contract	Date of introduction	2004 volume	2005 volume	2006 volume
Dalian Commodity Exchange				
Corn	Sepember 2004	5,828,045	21,859,732	67,645,036
#2 Soybean	December 2004	114,347	541,093	1,925,226
Soybean oil	January 2006	--	--	10,333,006
Shanghai Futures Exchange				
Fuel oil	August 2006	2,818,855	9,809,550	12,734,045
Zhengzhou Commodity Exchange				
Cotton	June 2004	2,994,046	10,860,361	2,074,017
Sugar	January 2006	--	--	29,341,597
PTA*	December 2006			167,220

*** = Purified terphthalic acid or 1,4-benzenedicar boxylic acid**

Conclusion

Fundamental structural changes occur constantly in the commodity markets. As Dowd (2007) writes in his contribution to *Intelligent Commodity Investing*: "the only losers will be those who fail to embrace the changes at hand". CR

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