



What the future holds for commodities

Nobody has a crystal ball. But an examination of the drivers of commodity returns can help, writes Hilary Till.

Commodities have had superior performance over the past four years. From December 2001 through February 2006, the Goldman Sachs Commodity Index (GSCI) returned 20.9% per year, in sharp contrast to the S&P 500, which returned a more modest 4.5% per year.

But while it is useful to review the past performance of commodities, investors are most concerned about what to expect going forward. And unfortunately, one cannot look in the rear-view mirror to see what is coming up ahead. Instead, it's worthwhile to review the drivers of commodity returns to make observations about what the future may hold.

Term structure of commodities futures contracts

The history of inflation-adjusted commodity prices has largely been one of secular decline with a great deal of cyclicity around this trend. Until very recently, commodity investments could *not* rely on a commodity boom for profitability and instead had to take into account the largely mean-reverting nature of spot commodity prices.

In the past, even if spot commodity prices declined, there was an additional way that a commodity investor could have a positive statistical expectation of profit, and that was through the "roll yield" embedded in certain commodity futures contracts.

Typically, when there are low inventories for a commodity, its commodity futures contract trades in "backwardation": consumers are willing to pay a premium for the immediately deliverable contract relative to deferred-delivery-month contracts. When a commodity futures contract is in backwardation, an investor has two potential sources of returns. Since backwardation typically indicates scarcity, one is on the correct side of a potential price spike in the commodity by being long at that time.

The other source of return involves a bit more explanation. In a backwardated futures market, a futures contract converges (or rolls up) to the spot price. This is the "roll yield" that a futures investor captures. The spot price can stay constant, but an investor will still earn returns from buying discounted futures contracts, which continuously roll up to the spot price.

Over very long time frames, a number of authors have shown how the shape of a commodity futures curve has been the dominant driver of returns in futures investing. In other words, trends in the spot price of a commodity have generally not been a meaningful driver of returns over long periods of time.

For example, in joint work with Barry Feldman of Prism Analytics, I extended the curve-shape framework in "Separating the Wheat from the Chaff: Backwardation as the Long-Term Driver of Commodity Futures Performance; Evidence from Soy, Corn, and Wheat Futures from 1950 to 2004."

We found that the power of backwardation to explain commodity futures returns is indeed valid, but requires the investor to have at least a five-year investment time horizon when relying on this indicator.

Excessive monetary stimulus: The 1970's revisited

While we found that backwardation has been a driver of returns over long time horizons for three agricultural futures markets, there is another noteworthy feature of our historical results. While normally over five-year periods, an agricultural futures contract's curve shape has been the driver of returns, there is one exception, and that is the 1970-to-1974 period.

What this means for an investor is that there can be an additional fundamental rationale for a long-term, passive investment in a commodity futures contract besides predicting structural backwardation for the contract. The second rationale would be to predict that the factors are in place to repeat the 1970-to-1974 experience. For example, Stephen Roach of Morgan Stanley has characterized the current economic environment as a "super liquidity cycle," which is pushing the "asset economy to its limit," of which one manifestation is the boom in prices of certain commodities.

Inadequate spare capacity in crude oil

Historically, crude oil futures contracts have typically traded in backwardation, and this has been a reliable indicator of scarcity in this market. In the past 12 months though, market participants have witnessed a surprising contradiction: crude oil futures prices have rallied to record highs while the futures curve shape has traded in persistent "contango." When a futures curve shape is in contango, the near-month contract is trading at a discount to the more distant contracts; this is the opposite of backwardation.

It appears that there been a structural change in the crude oil markets.

One significant change in the oil markets has been the recent reduction in spare capacity in the global production of oil. In the past when there was significant spare capacity, it was acceptable for refineries to hold minimal stocks of oil because there was a safety valve of swing capacity that could be drawn upon during any disruption in the oil markets. This supply cushion is currently not present. As a result, there has been a large increase in precautionary stock building, leading to a persistent contango in the crude oil futures markets.

In the absence of oil producers building up a spare capacity cushion and in the absence of alternative energy sources effectively replacing oil usage, the only lever to eventually balance supply and demand is demand destruction, as reasoned by Goldman Sachs researchers. Last spring, analysts from Goldman Sachs examined the experience of the late 1970's and early 1980's to see what price spikes would be required to create demand destruction, and they referred to their predictions as a "super spike" range.

The implication of this structural change in the oil markets is that the returns to energy-focused commodity futures investments could become ever more long-option-like. The investor will pay away an option-like premium in the form of the negative carry from the persistent contango in the oil markets, but will simultaneously be positioned for periodic (and entirely unpredictable) price spikes until an adequate supply cushion reemerges in the oil markets.

That said, a December 2005 Goldman Sachs report did predict that eventually a supply cushion would re-emerge, either through behavioural changes on the part of consumers or through new infrastructure finally being constructed by producers. These changes may not occur until the end of the decade, given the very long lead time for large-scale energy projects. It is at that point which one may see oil spot-prices dramatically mean-reverting, which would then confirm that curve shape is only a reliable driver of returns over long time frames.

In the meantime, until excess capacity in the oil markets is built up again, oil markets may be in continuous crisis, as predicted by Peter Fusaro of Global Change Associates, resulting in a "major bull market (that is) sustainable for ... years."