



August 12, 2001

Alternative Investment Trading Strategies

Alternative Investment News

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Our systematic futures trading strategy, employs statistical techniques to detect opportunities for earning a return for the provision of liquidity in key derivatives markets. We also employ a set of statistical techniques to exploit a number of niche market anomalies. Although our strategies can be employed across asset classes, we have a particular focus on opportunities within the commodity futures markets.

Commodity Futures Markets

We attempt to identify opportunities in the commodity futures markets where we have a systematic edge. These opportunities can be briefly summarized as instances where either a commodity futures price or a commodity futures spread is a biased estimator for the future spot price or spread level. When this occurs, one can set up positive expected value investments, monetizing this bias.

We have found several classes of trades where a commodity's futures price embeds more than just a forecast of the future spot price. In each of these categories, the futures price also embeds some form of premia. We classify our commodity-futures strategies as the structural imbalance strategy; the weather fear premium strategy; and the structural rigidity strategy.

Structural Imbalance

One class of trades results from there being a structural imbalance among natural buyers and sellers. When there is a preponderance of natural commercial buyers, the futures price will be biased upward in order to induce speculators to take up the other side of the transaction. And similarly in the case of there being an imbalance of natural commercial sellers.

One example of this phenomenon is from the winter of 1999. At this point, there was no natural commercial seller of heating oil in the deferred (six to nine months out) sector of the futures curve in similar magnitude to the airlines. This caused deferred heating oil prices to be bid up relative to other petroleum complex products. Specifically, the deferred heating oil crack spread (long heating oil/short crude oil) started having a level which was higher than what it would likely converge to six to nine months forward, given refinery economics. With the crack sufficiently wide, marginal providers of liquidity entered the market, selling deferred heating oil and buying crude oil against this sale. By holding this spread at levels beyond what one would expect it to converge to, the spread traders earned a liquidity premium. One usually does not need to hold this spread through to the futures contracts' maturities in order to realize the liquidity premium. The expected repricing of the spread, in this case, occurred in about two and half months.

Weather Fear Premium

A futures price will sometimes embed a fear premium due to upcoming, meaningful weather events. One cannot predict the weather, but one can predict how people will systematically respond to upcoming weather uncertainty. In this class of trades, a futures price is systematically too high, reflecting the uncertainty of an upcoming weather event. We say the price is too high when an analysis of historical data shows that one can make statistically significant profits from being short the commodity futures contract during the relevant time period. And further that the systematic profits from the strategy are sufficiently high that they compensate for the infrequent large losses that occur when the feared, extreme weather event does in fact occur.

One example of this strategy occurs in the natural gas market. Starting about the end of July, there is fear of adverse hot weather in the U.S. Northeast and Midwest. Air conditioning demand can skyrocket then. From June to mid-July, a systematic trade is to short natural gas futures contracts. It appears that this commodity also systematically has a weather uncertainty premium embedded in its price.

Structural Rigidity

For some commodity markets, there can be such enormous structural rigidities that futures prices have to do a lot of work to encourage certain production choices. These rigidities may be so persistent that a futures price consistently undershoots the level it needs to go to in order for commercial participants to change their behavior to one required by the overall economy. This class of trades is found mainly in those markets subject to heavy governmental intervention. The returns to this strategy are for providing producers with sufficient incentives to implement a needed production choice, which may be impeded by non-economic forces such as government policy.

Systematically (as shown by historical data), farmers always intended to underplant soybeans relative to commercial needs. For now, U.S. government farm policy no longer focuses on supply management. Instead, the policy variable being explicitly optimized is stable income for farmers. Through a loan program, participating farmers are in effect guaranteed minimum prices for soybeans and corn. (The federal government pays the difference between the price received for grain and the minimum guaranteed level if prices are below the set minimum.) The guaranteed price for soybeans has recently been at a sufficient multiple to corn that the incentive has been to favor soybean planting (relative to corn) during low agricultural price environments. A final interesting thing is that once the futures prices dip below the guaranteed minimum levels, the futures prices no longer affect U.S. farmers' decisions; the worst price for them will be the minimum price. But the futures price still affects the planting decisions of other countries' farmers, particularly in Brazil and Argentina, key soybean producers.

Financial Futures Markets

We have elected to add a handful of highly statistically significant financial derivatives trades to our core portfolio of diversified commodity futures trades. Our rationale is that these additional trades will be portfolio diversifiers for the overall commodity portfolio.

We selectively add niche financial market opportunities to our core commodity portfolio in an effort to create a better Sharpe ratio. The financial trades satisfy the criteria of having statistically significant returns while being unrelated to the commodity positions in the core portfolio. Also, by making sure that the niche financial trades are constrained to a modest fraction of the total-return portfolio's risk budget, we attempt to ensure that our program maintains a lack of correlation to the dominant financial asset classes.

Portfolio Construction

Our portfolio construction process is explicitly centered on avoiding draw-downs (rather than minimizing volatility.) For each strategy we examine its maximum historical draw-down and then scale the size of each strategy accordingly. This risk measure is usually higher than one based on recent volatility to get an indication of risk. Each strategy's size is constrained so that its maximum risk will be an estimated 3% of portfolio value.

The strategies are then combined with the goal that a monthly loss as large as 7% will occur only once in about one and a half years. The monthly estimated maximum loss is based on measuring value-at-risk using recent position volatilities and correlations and also by performing portfolio-wide scenario testing using long-term historical data. Although our strategies continually evolve in line with our research breakthroughs, our process for allocating among investments consistently adheres to our outlined portfolio construction and risk management methodology.