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Risk Management in Energy-Focused Commodity Futures Investing

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12-1. Introduction

This chapter will discuss the practical issues involved in applying a disciplined risk management methodology to energy-focused futures investing. The chapter will show how to apply methodologies derived from both conventional asset management and hedge-fund management to futures investing. It will also discuss some of the risk management issues that are unique to leveraged futures investing.

12-2. Risk Is the Flipside of Return

In a number of derivatives trading strategies, an investor is paid to bear risks that others would prefer to lay off or not take on. What John Maynard Keynes (1935) wrote is just as true today: "The violence of the fluctuations which normally affect the prices of many individual commodities shows what a great risk the short-period speculator in commodities runs, for which he requires to be remunerated on a corresponding scale."

A number of derivatives trading strategies are well known and publicized, which does not prevent them from continuing to exist. For example, we have found that trades that have appeared in 1980s commodity brokerage recommendations and have been

published in the *Journal of Futures Markets* and other empirically oriented journals are still valid today.

In discussing consistently profitable grain futures trades, Cootner (1967) stated that the fact that they:

> persist in the face of such knowledge indicates that the risks involved in taking advantage of them outweigh the gain involved. This is further evidence that … [commercial participants do] not act on the basis of expected values; that … [these participants are] willing to pay premiums to avoid risk.

In a number of statistically significant futures trades, the investor who implements these trades assumes some specific event risk that others do not want to assume, which is why we believe that there is a return to efficiently bearing this risk in the first place.

12-3. The Most Important Element of an Investment Process

The key to a successful investment program is not in discovering proprietary investment strategies: a diligent literature search will turn up a great number of strategies, as noted above. Instead, the most important element of an investment process may well be how one implements the program's portfolio construction and risk management methodologies so that one can have somewhat smooth performance and stay in business during dramatic market moves. This point will be further elaborated on below.

12-4. Product Design Issues

In derivatives trading, one has a lot of flexibility in designing an investment program. Futures trading requires a relatively small amount of margin. For example, in some futures programs one only needs to set aside about $7 for each $100 of exposure. The result is that one can easily adjust one's leverage level to magnify gains (and, of course, magnify losses). Trade sizing is mainly a matter of how much risk one wants to assume. An investor is not very constrained by the amount of initial capital committed to trading.

With the use of options, one can also be very particular about the risks that the investor wishes to hedge away by paying option premia.

We believe that what leverage level is chosen for a program and which risks are hedged are product design issues. One needs to determine how the program will be marketed, and what the client's expectations will be. For example, a number of top commodity trading advisers have had losses in excess of 30%, which seem to have been acceptable to their clients since these investment programs sometimes produce annual returns in excess of 100%. Investors know upfront the sort of swings in profits and losses to expect from such managers. Another example is if an alternative investment program were advertised as an equity diversifier, then clients would expect that the program should not do too poorly in the face of a large equity-market decline.

The parameters of a program's risk management policy should directly flow from the return, risk, and correlation expectations of the program's client base. When attempting to adhere to these top-level parameters, the actual implementation of a program's risk management policy will rely heavily on the particular assumptions about the statistical properties of futures prices, as will be discussed later.

12-5. Viability of a Futures Program

As already touched upon, our belief is that a number of statistically significant investment opportunities exist because of the possibility of rare, but nonetheless, large losses. One can build a business or investment program around these positive expected-value opportunities, but the particular leverage level and hedging strategy chosen will determine the ongoing viability of the program.

The basic investment strategies employed by the following were and are backed by historical experience:

- the savings and loan industry in the 1980s in exploiting a persistently steep yield curve;
- Metallgesellschaft in 1993 in exploiting the persistently backwardated shape of several energy futures contracts; and
- Long Term Capital Management in 1998 in profiting from convergence trades in the fixed-income markets.

All the investment strategies noted above are statistically valid, yet resulted in billions of dollars of losses. Obviously, in retrospect, the leverage level and hedging strategies chosen by these institutions were flawed.

12-6. Standard Risk Management Methodology

The way that risk management has been applied by conventional asset managers is typically as follows:

- Translate the client's guidelines into return and risk targets with respect to an index or benchmark.
- Determine the active bets away from a program's benchmark.
- Make assumptions about the expected returns, volatility, and correlation of the active bets.
- Construct the client's portfolio so that the client's return and risk targets will be achieved if one's statistical assumptions are correct.
- Continually monitor the portfolio's actual return and risk performance for adherence to the established targets.

Litterman (1996) noted that: "The art of successful portfolio management is not only to be able to identify opportunities, but also to balance them against the risks that they create in the context of the overall portfolio."

Risk management is therefore designed into the investment process. The conventional asset manager approach to risk management is a useful first step in designing a risk management program for leveraged futures trading. However, one still needs to add several layers of risk management to this approach because of the unique statistical properties of commodity futures contracts and because of the different way futures products are marketed.

A futures product typically does not have a benchmark so the conventional asset manager approach of translating a client's guidelines into risk and return targets with respect to an index does not directly apply. Instead, one needs to determine the acceptable trade-off between total return and total risk for a client. Given the ability to leverage, a number of commodity trading advisers offer 1-times, 2-times, and 3-times versions of the same program. A client can directly choose the leverage level for their investment based on their ability to tolerate losses of a given magnitude.

The second step in a conventional asset manager approach to risk management consists of making assumptions about expected returns, risks, and correlations of active bets. It is at this point that the unique behavior of commodity prices creates extra steps in a risk management program.

12-7. Understanding Price Behavior

Research from the 1970s showed that diversified portfolios of equities have returns that appear to be symmetrically distributed. It is a different matter for commodity prices.

Deaton and Laroque (1992) note the following about the empirical behavior of the prices of a number of commodities:

- "Commodity prices are *extremely* volatile."
- There exist "rare but violent explosions in prices."
- In normal times, there is a "high degree of price autocorrelation."
- "In spite of volatility, prices tend to revert to their mean or to a … trend" level.
- "There is substantial positive skewness" in the price distributions.
- There is "substantial kurtosis with tails much thicker than those of the normal distribution."

Commodity prices tend to exhibit positive skewness for the following reason. During times of ample supply, there are two variables that can adjust to equilibrate supply and demand: more inventories can be held *and* the price can decrease. But, if there are inadequate inventories, *only* the price can respond to equilibrate supply and demand, given that, in the short run, new supplies of physical commodities cannot be instantly mined, grown, and/or drilled.

12-8. Value-at-Risk

If a portfolio of instruments is normally distributed, one can come up with the 95% confidence interval for the portfolio's change in monthly value by multiplying the portfolio's recent monthly volatility by 2 (or 1.96, to be more exact). The portfolio's volatility is calculated from the recent volatilities and correlations of the portfolio's

instruments. This is the standard Value-at-Risk approach. But this approach alone is obviously inadequate for a commodity portfolio, which consists of instruments that have a tendency towards extreme positive skewness.

While this measure is useful, it has to be used jointly with other measures and actions. The measure is useful since one wants to ensure that under normal conditions, a commodity position has not been sized too large that one cannot sustain the random fluctuations in profits and losses that would be expected to occur, even without a dramatic event occurring.

Sizing a trade based on its volatility is especially important the longer the frequency of predictability is. For example, if a trade's predictability is at quarterly intervals, the trade has to be sized to withstand the daily fluctuations in profits and losses. In one extreme example, Lettau and Ludvigson (2001) have found that equities are predictable at business cycle frequencies. But that means that one cannot have a leveraged investment process to take advantage of this predictability.

12-9. Scenario Testing

Using long-term data, an investor should directly examine the worst performance of a commodity strategy under similar circumstances in the past. In practice, we have found that such a measure will sometimes be larger than a Value-at-Risk measure based on recent volatility.

We would recommend examining the worst performance of a futures trade over the entire time horizon of the trade rather than looking at what its worst performance was over a period of say, three days. We believe that markets are "learning systems." During a price shock, if a similar event occurred in the past, market participants know what the magnitude of the price move was during the past event. So an entire, dramatic price move may occur in a shortened timeframe compared to the past.

In practice, if a market only has limited historical data, it would be prudent to scale down the size of a position in such a market since one may not be able to get a complete idea of the range of possible outcomes. If one is relying on historical data to find pockets of predictability in the futures markets, then examining worst-case outcomes can also serve another purpose. If the loss on a particular commodity futures strategy exceeds the historical worst case, this can be an indication of a new regime that is not

reflected in the data. This would trigger an exit from a systematic trade since one no longer has a handle on the worst-case scenario.

A recent example of a fundamental structural change occurring in a commodity market was provided by Fusaro (2005). He reveals that in the summer of 2005, "the big Wall Street houses and some other hedge funds lost many … hundreds of millions [of dollars] on gasoline/heating oil spreads. They could not imagine that heating oil would go higher than gasoline in June. It just never happened before."

The conclusion from this discussion is that a commodity program will not experience the full brunt of a structural break if one exits a trading strategy after experiencing losses that are greater than have been the case in the past, as noted in Till (2006).

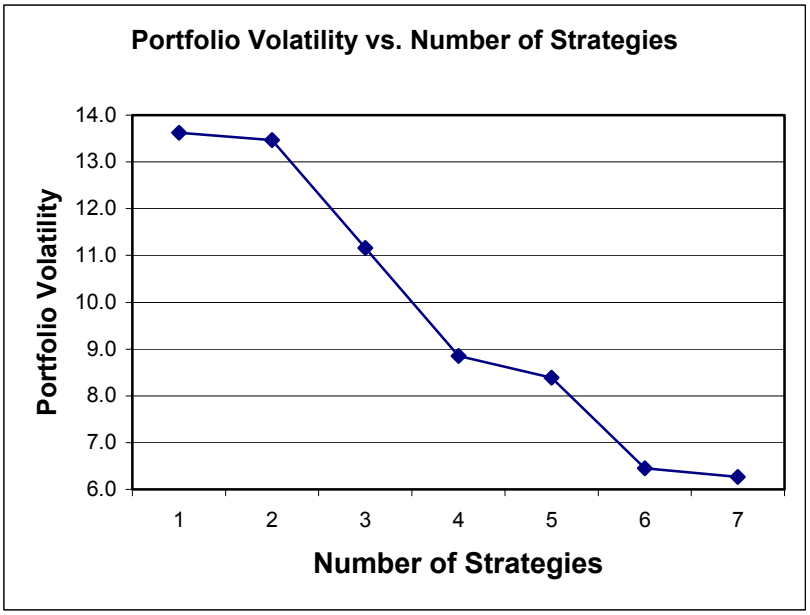
12-10. Deep Out-of-the-Money Options

In a systematic investment program based on historical data, one can make determinations about the expected return of an investment. One result is that an investor can decide to give up a small fraction of this expected return in order to hedge against catastrophic risk. An investor can do so with deep out-of-the-money options. This choice is especially advisable for commodity futures positions that require physical delivery at maturity. This means that contracts can be periodically squeezed to quite unpredictably high levels.

12-11. Exit Strategy

Although strictly speaking not a risk management issue, we recommend an exit strategy for commodity investments that recognizes the mean-reverting properties of commodities. In our case, this means examining historical data to determine the typical size of moves during supply–demand imbalances.

Figure 12-1. ***Annualized portfolio volatility*****.**



Source: Till (2000), Exhibit 5. Copyright © Institutional Investor, Inc.

12-12. Diversification and Concentration Risk

As discussed in Till (2001), a commodity investment manager can potentially set up dampened risk portfolios of commodity investments, which are very nearly uncorrelated with each other. For example, Figure 12-1 shows the annualized portfolio volatility versus the number of commodity strategies for a portfolio from June 2000. Based on three months of price data, these strategies had correlations amongst each other of between –20% and +20%. The figure demonstrates the beneficial effect on portfolio volatility of incrementally adding unrelated trades.

Now for all types of leveraged investing, a key risk management concern is inadvertent concentration risk. So, for example, equity option market-makers will try to ensure that their book of trades does not have inadvertent style and industry concentrations by using tools like the risk management software package, Barra.

In leveraged commodity futures investing, one must be careful with commodity correlation properties. Humphreys and Shinko (1997) discuss how correlations amongst commodity markets can be highly seasonal. Their specific example discusses the

correlation of natural gas in different regions, which depends on whether it is summer or winter.

In our own work, we have found that seemingly unrelated commodity markets can become temporarily highly correlated. This becomes a problem if commodity managers are designing their portfolios so that only a certain amount of risk is allocated per strategy. The portfolio manager may be inadvertently doubling up on risk if two strategies are unexpectedly correlated.

12-13. Understanding the Fundamental Drivers of a Strategy

The antidote for this problem is twofold. One solution is to understand what the key factors are which drive a strategy's performance, and a further solution is to use recent short-term data in calculating correlations. If two trades have common drivers, then it can be assumed that their respective performances will be similar. Recent data can frequently capture the time-varying nature of correlations that long-term data average out.

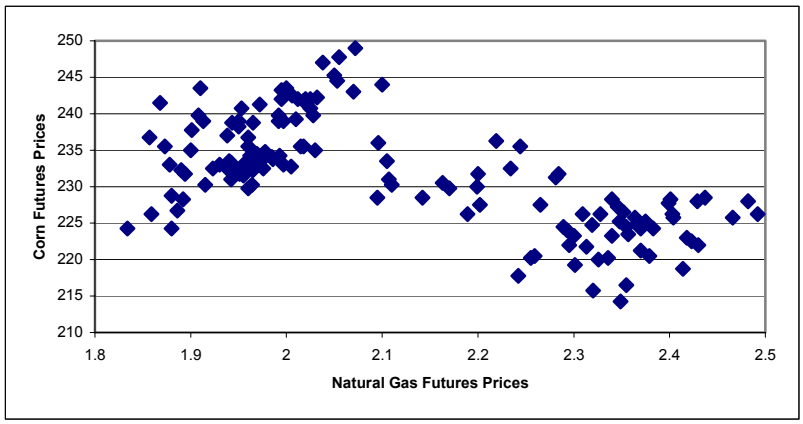
Example: Corn and Natural Gas

Figures 12-2 and 12-3 are a stark example from summer 1999 of how seemingly unrelated markets can become temporarily very related. Normally, natural gas and corn prices are unrelated; sampling every 3 days, Figure 12-2 shows a correlation of +12%. But during July they can become highly correlated; Figure 12-3 shows, during a three-week period in July 1999, a correlation of +85%. Depending on the values of key fundamental drivers, two prospective trades in the summer are to be short these two commodities. Now, the empirical evidence seems to show that these two trades may be the same trade. So, if one puts both of these trades in their portfolio, one would be inadvertently doubling up on risk. How could these two seemingly different trades be, in fact, the same trade?

To answer this question, one needs to understand why these two trades tend to work. They are part of a class of trades called "weather fear premium" trades. In this class of trades, as explained in DiTomasso and Till (2000):

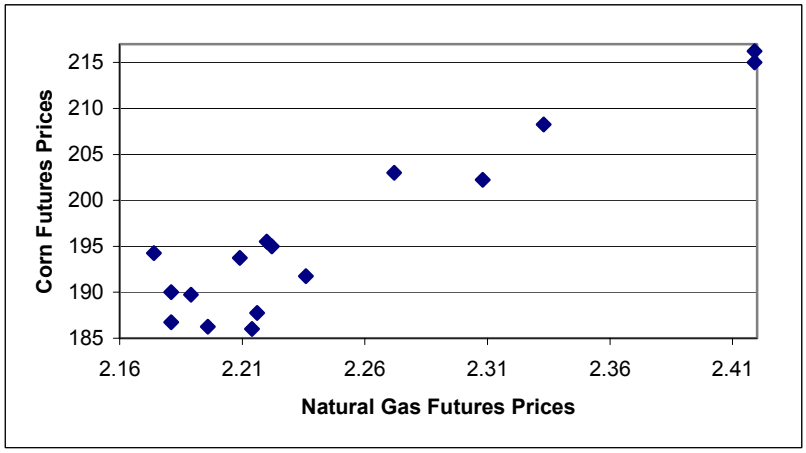
> A futures price will sometimes embed a fear premium due to

Figure 12-2. ***September corn futures prices versus September natural gas futures prices (November 30, 1998 to June 28, 1999).***



Source: Till (2001), Exhibit 3. Copyright © Institutional Investor, Inc.

Figure 12-3. ***September corn futures prices versus September natural gas futures prices (June 29, 1999 to July 21, 1999).***



Source: Till (2001), Exhibit 4. Copyright © Institutional Investor, Inc.

> 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.

In Till (2000), we gave several examples of this strategy. The key pollination period of corn is around mid-July:

> Its key pollination period is about the middle of July. If there is adverse weather during this time, new-crop corn yields will be adversely affected. This means that the new-crop supply would be substantially lessened, dramatically increasing prices. A systematic trade is to short corn futures from June through July. There is systematically too high a premium embedded in corn futures contracts during the pre-pollination time period.

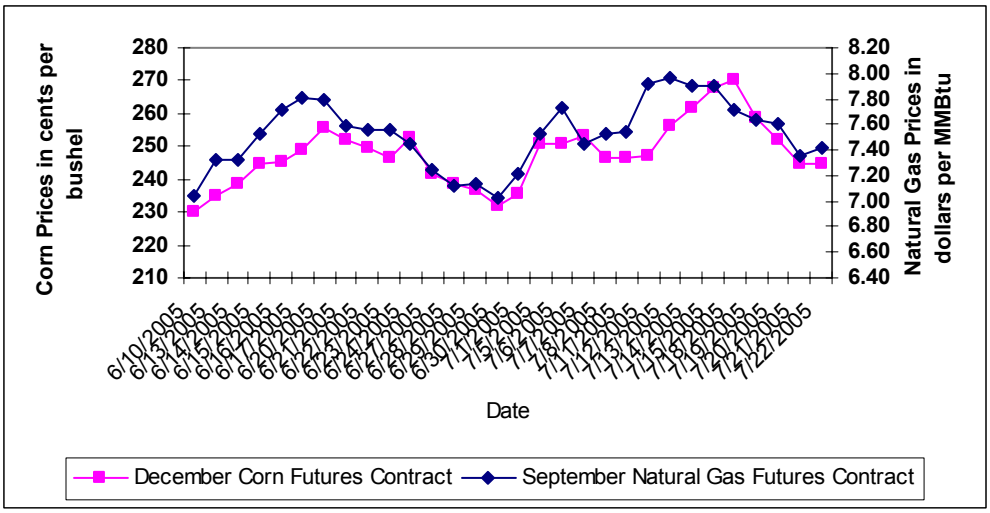
Turning to natural gas:

> In July, there is fear of adverse hot weather in the US Northeast and Midwest. Air conditioning demand can skyrocket then. From June to mid-July, a systematic trade is to short natural gas futures contracts at the height of a potential weather scare.

Both the July corn and natural gas trades are heavily dependent on the outcome of weather in the US Midwest. In July 1999 the Midwest had blistering temperatures, which even led to some power outages. During that time, both corn and natural gas futures prices responded in nearly identical fashions to weather forecasts and realizations.

Figure 12-4 shows an updated example from summer 2005. Because both corn and natural gas have common reactions to the possibility of extreme heat, their prices sometimes wax and wane at similar times during the summer, as would be expected from the discussion above.

Figure 12-4. ***Daily prices of corn and natural gas futures (June 10, 2005 to July 22, 2005).***



Source: Till and Eagleeye (2005a), Figure 5.

Example: Crude Oil, Soybeans, and Copper

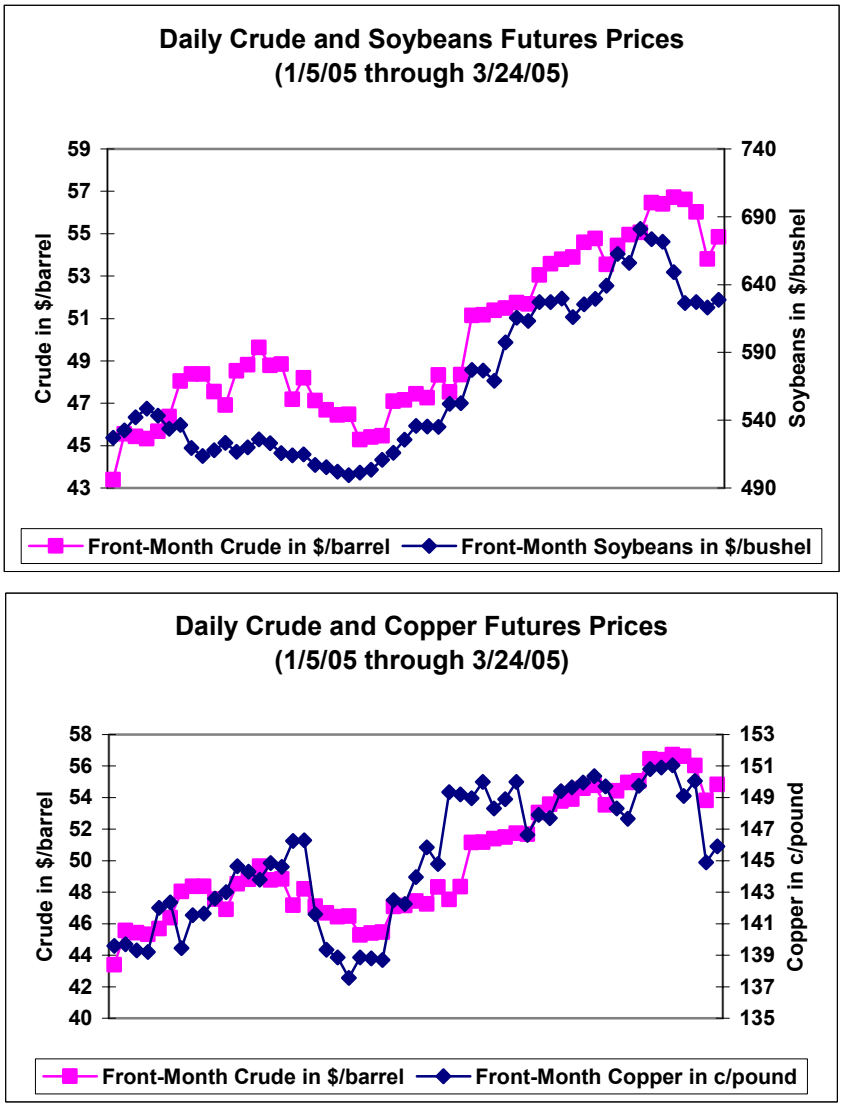
One might expect that the price of crude oil should not be correlated with the prices of either soybeans or copper. But in reviewing Figures 12-5 and 12-6 from the first half of 2005, one might question that expectation.

What might explain the common waxing and waning of prices in crude oil, soybeans, and copper during the first half of 2005? Howell (2005) points out that China, with its population of 1.3 billion, is now the world's largest consumer of copper, steel, iron ore, and soybeans, and the second largest consumer of energy. When one re-examines Figures 12-5 and 12-6 in light of the Chinese holiday calendar, one notes that the lulls in each commodity's bull market occurred around the time of Chinese holidays in February and May 2005, presumably when Chinese demand was absent.

If a commodity portfolio manager does not want to own too much risk to fluctuating Chinese demand, then it would be prudent for the manager to be careful in his or her risk capital allocation to the petroleum complex, industrial metals, and soybeans.

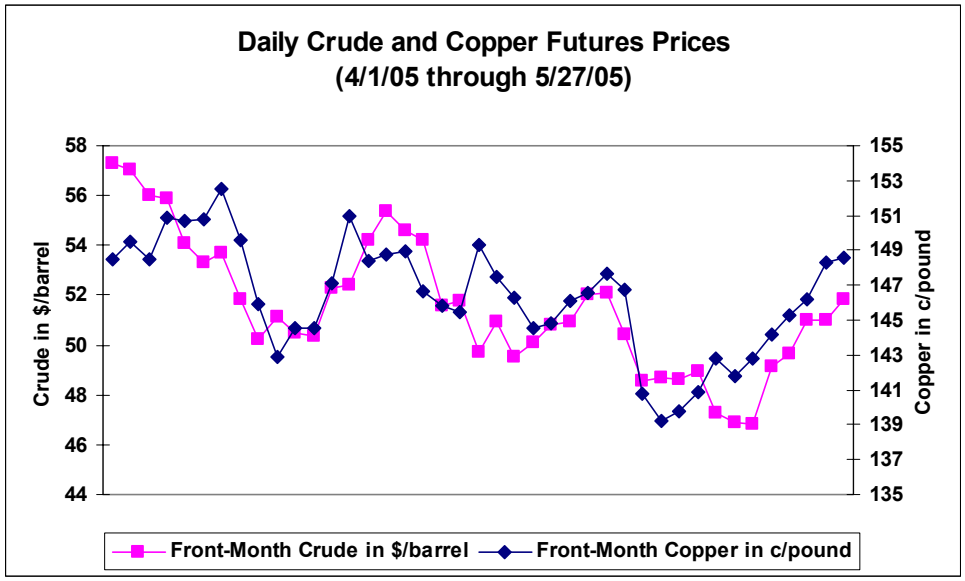
Our conclusion is that in order to avoid inadvertent correlations, it is not enough to measure historical correlations. Instead, an investor needs to have an economic

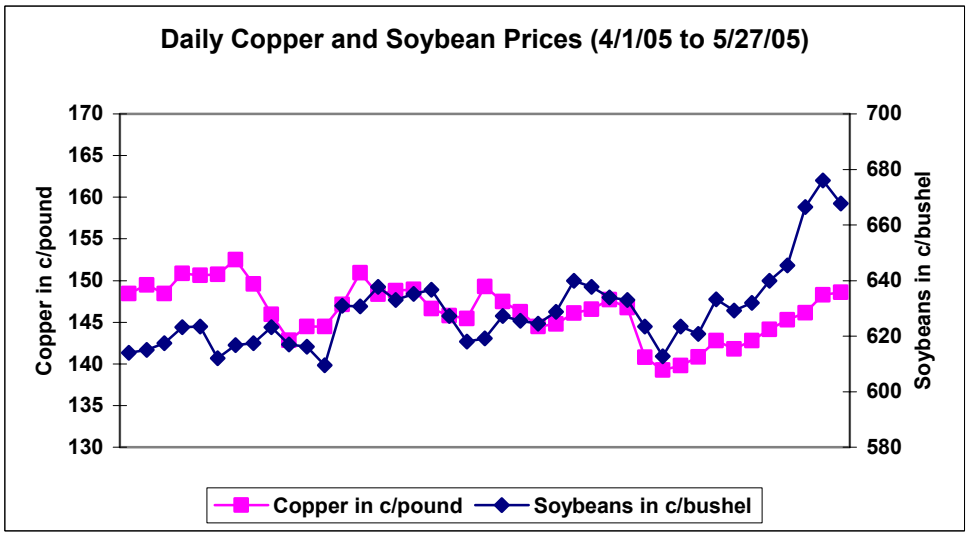
Figure 12-5. ***Daily prices of crude oil futures versus (top) soybeans futures, (bottom) copper futures (January 5, 2005 to March 24, 2005).***



Source: Till (2005).

Figure 12-6. ***Daily prices of copper futures versus (top) crude oil futures, (bottom) soybean futures (April 1, 2005 to May 27, 2005).***





Source: Till and Eagleeye (2005a), Figure 7.

understanding for why a trade should works in order to best be able to appreciate whether an additional trade will act as a portfolio diversifier.

12-15. Extraordinary Stress Testing

As discussed above, risk management policies flow from product design decisions. Futures products are typically marketed as equity investment diversifiers. Therefore, one job of risk management is to attempt to ensure that a futures investment will not be correlated to the equity market during periods of dramatic equity losses. This is not an issue for say, an equity mutual fund. During a time of stress in the equity markets, clients would expect that their equity fund would perform poorly.

This extra risk management step is unique to alternative investments, again, because of the way they are marketed. For example, funds of hedge funds are also marketed as equity diversifiers, so this is also a particular area of concern for such funds. Since funds of funds typically include a lot of arbitrage strategies, which in turn rely on the ability to leverage, funds of funds are at risk to liquidity shocks. And the equity markets typically also do poorly during liquidity shocks.

One solution advanced by a prominent fund-of-funds manager is to include an interest-rate overlay in their fund. The interest-rate overlay consists of going long Eurodollar (short-term US interest rate) futures, which do well when short-term interest rates are cut. The Federal Reserve Board's response to liquidity shocks during the last 19 years has been to cut short-term interest rates so a Eurodollar overlay could plausibly offset losses in portfolios consisting of arbitrage strategies.

This type of macro hedging is very applicable to commodity and financial futures investments as well. A number of commodity futures strategies have a long commodity bias since they rely on taking on inventory risk that commercial participants wish to lay off. One consequence is that these strategies are at risk to sharp shocks to business confidence. And during sharp shocks to business confidence, as occurred in the aftermath of September 11th, 2001, the stock market performs quite poorly.

A number of financial futures strategies involve taking long positions in relatively illiquid markets and short positions in liquid markets during predictable times of increases in market liquidity. One consequence is that these strategies are at risk to liquidity

shocks as occurred during the Fall of 1998 at the time of the Long-Term Capital Management/Russian default crisis.

As noted before, the Federal Reserve Board, under former Chairman Alan Greenspan, has responded to financial shocks by cutting interest rates, which has resulted in the stock market stabilizing. As long as this type of policy continues, one way to hedge a portfolio that has exposure to shocks to business confidence or shocks to the availability of credit is to include a fixed-income hedge. The hedge could take the form of either a Eurodollar futures contract overlay or purchases of out-of-the-money fixed-income calls. This recommendation is similar to that of the fund-of-funds manager noted above, whose portfolios were at risk to liquidity shocks.

Obviously one would prefer to layer on natural hedges, which themselves have positive expected value. We have found that this is sometimes possible in a diversified futures program. For example, in the fall there tend to be a number of statistically significant commodity trades that have a long bias. Also, at the same time there are a number of statistically significant long fixed-income trades. By carefully combining these trades, the fixed-income trades operate as a natural hedge to the event risk taken on with the long commodity trades.

The hedge fund world also provides other risk management solutions that are applicable to futures investments. One concern for a fund-of-funds is that its group of funds is inadvertently exposed to some event risk such as an emerging markets shock. This issue is compounded by the fact that a hedge fund investor is frequently not allowed to see what a hedge fund is investing in because this is considered proprietary information by a hedge fund.

One risk management software provider, Measurisk, had solved this problem by confidentially collecting hedge fund portfolios and directly determining their sensitivity to past financial shocks. For example, if one held a particular fund-of-funds portfolio during October 1987, one could see how that portfolio would have performed during the stock market crash. This scenario test gives an indication of sensitivity to a stock market crash.

For a commodity and financial futures portfolio, we believe that it is prudent to examine how the portfolio would have performed during various well-defined stock market declines, given that such investments are marketed as equity portfolio diversifiers. Also, various crises have shown that the only thing that goes up during such times is correlation!

If a portfolio shows sensitivity to certain extreme events when the stock market has declined, this does not necessarily mean that the portfolio should be sized differently or constructed differently. It may mean that a macro portfolio hedge would be advisable such as purchasing out-of-the-money Eurodollar call options, as noted above.

12-16. Risk Management Reports

On a per-strategy basis, it is useful to examine each strategy's:

- Value-at-Risk based on recent volatilities and correlations;
- worst-case loss during normal times;
- worst-case loss during well-defined eventful periods;
- incremental contribution to portfolio Value-at-Risk; and
- incremental contribution to worst-case portfolio event risk.

The last two measures give an indication if the strategy is a risk reducer or risk enhancer.

On a portfolio-wide basis, it is useful to examine the portfolio's:

- Value-at-Risk based on recent volatilities and correlations;
- worst-case loss during normal times; and
- worst-case loss during well-defined eventful periods.

Each measure should be compared to some limit, which has been determined based on the design of the futures product. So, for example, if clients expect the program to lose no more than 7% from peak to trough, then the three portfolio measures should be constrained not to exceed 7%. If the product should not perform too poorly during financial shocks, then the worst-case loss during well-defined eventful periods should be constrained to a relatively small number. If that worst-case loss exceeds the limit, then one can devise macro portfolio hedges accordingly.

Now obviously the danger with these recommended approaches is that one is relying on historical data for guidance since completely unprecedented events do happen. That is why we had earlier recommended exiting any futures trades in which the losses exceed those known in history since one is then in uncharted territory.

The risk reports in Tables 12-1 and 12-2 give examples of a futures portfolio with the recommended measures displayed. Note, for example, the properties of the soybean crush spread. It is a portfolio event-risk reducer, but it also adds to the volatility of the portfolio.

Table 12-1. ***First example of a strategy- and portfolio-level risk report.***

Strategy	Value-at-Risk	Worst-case loss		Incremental contribution	
		Normal times	Eventful times	Portfolio Value-at-Risk[1]	Worst-case portfolio event risk[1]
Deferred reverse soybean crush spread	2.78%	–1.09%	–1.42%	0.08%	–0.24%
Long deferred natural gas outright	0.66%	–0.18%	–0.39%	0.17%	0.19%
Short deferred wheat spread	0.56%	–0.80%	–0.19%	0.04%	0.02%
Long deferred gasoline outright	2.16%	–0.94%	–0.95%	0.33%	0.81%
Long deferred gasoline vs. heating oil spread	2.15%	–1.04%	–2.22%	0.93%	2.04%
Long deferred hog spread	0.90%	–1.21%	–0.65%	0.07%	–0.19%
Portfolio	**3.01%**	**–2.05%**	**–2.90%**		

[1]A positive contribution means that the strategy adds to risk while a negative contributions means the strategy reduces risk.

Source: Risk Report from Premia Capital Management, LLC, as cited in Till (2002).

Table 12-2. ***Second example of a strategy- and portfolio-level risk report.***[1]

Strategy	Value-at-Risk	Worst-case loss		Incremental contribution	
		Normal times	Eventful times	Portfolio Value-at-Risk[2]	Worst-case portfolio event risk[2]
Gasoline front-to-back spread	2.59%	–5.59%	–4.31%	**1.62%**	**0.64%**
Deferred outright gasoline	3.81%	–2.50%	–2.76%	**2.93%**	**–0.72%**
Deferred outright natural gas	0.67%	–0.15%	–0.29%	0.52%	0.16%
Deferred Eurodollar futures	2.42%	–5.92%	–0.96%	**0.77%**	**–2.86%**
Hog spread	3.87%	–2.66%	–3.23%	1.18%	–0.29%
Deferred gasoline spread	1.60%	–0.29%	–0.53%	1.33%	0.29%
Cattle spread	1.62%	–0.50%	–1.34%	0.25%	–0.32%
Portfolio	**9.24%**	**–8.89%**	**–2.27%**		

[1]While under "normal" times, the gasoline spread position is less risky than the outright, during particular "eventful" times the spread adds to risk while the outright reduces risk. While under "normal" times, the Eurodollar futures position adds to risk, during particular "eventful" times this interest-rate position reduces risk.

[2]A positive contribution means that the strategy adds to risk while a negative contributions means the strategy reduces risk.

Source: Risk Report from Premia Capital Management, LLC, as cited in Till and Eagleeye (2005b), Exhibit 18.

Table 12-2 displays the recommended risk measures for another example portfolio. Note again the properties of the Eurodollar (short-term interest rate) futures. The interest-rate position is a portfolio event-risk reducer, as discussed previously, but it also adds to the volatility of the portfolio under normal conditions.

As Tables 12-1 and 12-2 show, an incremental-contribution-to-risk measure based solely on recent volatilities and correlations does not give sufficiently complete information about whether a trade is a risk reducer or risk enhancer.

12-17. Conclusion

Our view is that there are a number of derivatives strategies which earn returns due to assuming risk positions in a risk-adverse financial world. The returns are not necessarily due to inefficiencies in the marketplace.

There is a very important active component to an investment program that earns a return due to bearing risk. It is the investment program's risk management methodology and policy. An investment manager must decide how much to leverage the strategy and whether to give up any returns by hedging out some strategy's extreme risks. That investment manager must also continually monitor the risk exposures in his or her portfolio and make sure that those exposures adhere to pre-defined limits.

In designing a risk management framework, a leveraged futures investor can use as a starting point the framework provided by conventional asset managers and also by fund-of-hedge-funds managers.

We conclude by noting that how investors design and carry out their risk management policies is key to an investment program's viability, especially in leveraged commodity futures investing.

Acknowledgements. This chapter is largely based on two articles that were previously published by *Commodities Now*, http://www.commodities-now.com. The author wishes to express thanks to publisher Guy Isherwood for kind permission to reprint these two articles in this collection of risk-management articles for the Professional Risk Managers' International Association, http://www.prmia.org. The author would also like to note that the ideas in this chapter were jointly developed with Joseph Eagleeye, co-founder of Premia Capital Management, LLC, http://www.premiacap.com.

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