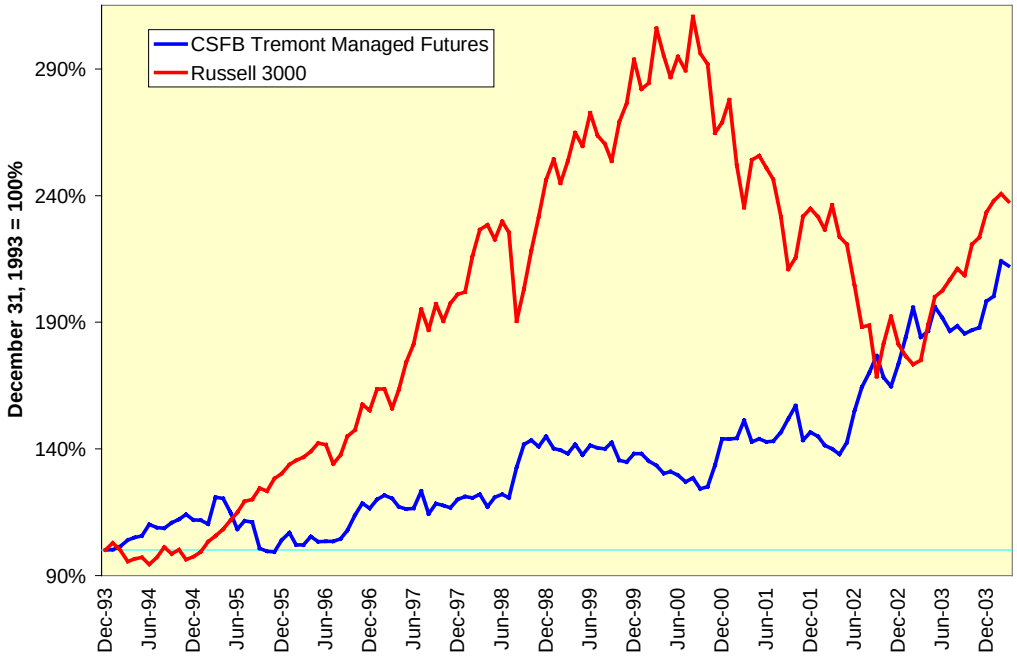
Commodities As An Asset Class

Travel is broadening, and not just because of too much hotel food. The financial services industry provides opportunities for you to go to conferences and expand your horizons. Imagine yourself in a room with 900 or so people, all of who are selling, and all of them with a proclaiming their negative correlation not only to conventional asset classes, many of which have enviable long-term performance records, but also to each other.

Different Paths, Different Volatilities



Some might describe this as a disorganized and cacophonic mess akin to a beach full of barking seals. Others will recognize it as a gathering of the managed futures industry. As we can see in the chart above, managed futures as a class do follow a different return path than U.S. equities, and with far less dramatic volatility.

But comparison of indices obscures the question whether managed futures themselves have a natural return, something intrinsic to the underlying futures themselves, or whether we are in fact betting on the skills of the trader, something that could exist separate from anything in the underlying group of assets. An index of stocks, for example, has a natural return produced by the dividend stream plus or minus price change, and we can construct similar benchmarks for other conventional assets.

These conventional indices are either long-only or short-only, which confines the manager's task to asset selection, the search for an "alpha" or expected outperformance to the benchmark. Managed futures involve combinations of long and short positions and lack the basic tradable index for a fund manager to cleave to while searching for the small group of trades designed to beat the benchmark on a relative basis. Managed futures, like nearly all alternative investments, are measured on an absolute return basis, which is simply a fancy way of saying the manager's goal is to make money, not to beat a benchmark. Absolute return is an unremarkable concept elsewhere in all of our lives.

When Your Assets Are Liabilities

Before we get too far, let us distinguish between managed futures and the relationships amongst the physical commodity markets, our real topic today. Managed futures include all of the financial futures markets, such as stock index and bond futures. These markets can proxy for and often are used in conjunction with their underlying assets to allocate funds, manage risks, overlay strategies and either gain or shed exposures.

Moreover, these futures embed the natural return of their underlying asset. For example, in a flat rate environment, a bond future's price accrues upward at its 6% notional coupon less the short-term interest rate cost of carry, and a stock index future will accrue the dividend yield of the index less short-term rates.

The seventeen physical commodities included in the Commodity Research Bureau's index have no such embedded natural returns, although it can be argued that the returns implied in the forward curves of the futures should be included as such. For the most part, these implied returns are negative by the short-term interest rate costs of carry and the storage costs of the commodities themselves. A long-only holder of these commodities will need either price appreciation in excess of these carrying costs or the initial advantage of an inverted (backwardated) forward curve in commodities to make money.

Absence Of Commonality

While modern portfolio theory has come under numerous criticisms in the past two decades, both Harry Markowitz and Bill Sharpe have one more Nobel prize than I do, and the intellectual constructs of variance and covariance of returns remain the underpinnings of value-at-risk analysis. While none of us would question whether there is something called "the market" for stocks, and that the movement of individual issues and sectors can be decomposed into systemic (market) and specific risk, can we make the same argument for the members of the CRB index?

Correlation of Weekly Average Cash Market Returns, Jan. 1983 - May 2004

	C	CC	CL	CT	GC	HG	HO	JO	KC	LC	LH	NG	PL	S	SB	SI	W
Corn	1.000																
Cocoa	0.065	1.000															
Crude	0.000	-0.007	1.000														
Cotton	0.150	0.095	-0.109	1.000													
Gold	0.018	0.110	0.151	-0.025	1.000												
Copper	0.018	0.066	0.048	0.110	0.180	1.000											
Htg. Oil	-0.020	0.001	0.646	-0.050	0.119	0.032	1.000										
Or. Juice	0.117	0.028	0.042	0.034	0.031	0.014	0.016	1.000									
Coffee	0.082	0.097	0.004	0.031	0.035	0.056	-0.012	0.014	1.000								
Cattle	0.016	-0.016	0.045	-0.012	0.008	0.029	0.088	0.010	-0.003	1.000							
Hogs	0.039	0.007	0.034	0.005	0.036	0.013	0.012	0.035	-0.034	0.141	1.000						
Nat. Gas	0.069	-0.079	0.127	0.015	0.088	0.014	0.206	-0.001	0.070	0.009	0.013	1.000					
Platinum	0.035	0.038	0.134	-0.032	0.488	0.136	0.106	0.044	0.100	0.050	0.004	0.080	1.000				
Soybeans	0.590	0.102	-0.011	0.170	0.115	0.123	0.012	0.081	0.088	0.033	0.036	0.031	0.065	1.000			
Sugar	0.099	0.088	-0.013	0.040	0.070	0.079	0.025	0.025	0.047	0.008	-0.008	0.017	0.078	0.105	1.000		
Silver	0.049	0.118	0.127	-0.004	0.673	0.185	0.096	0.032	0.074	-0.024	0.013	0.071	0.405	0.143	0.109	1.000	
Wheat	0.389	0.079	0.004	0.046	0.091	0.081	0.010	0.079	0.046	0.053	-0.021	0.033	0.117	0.318	0.115	0.092	1.000
CRB Beta	1.094	0.712	1.390	0.568	0.555	0.697	1.478	0.695	0.968	0.268	0.392	1.904	0.808	1.239	1.064	1.118	1.090

The table above, constructed by taking the weekly average cash market returns for each of the commodities since January 1983 indicates the answer is no. (NOTE: The data for orange juice are from a continuous futures series, and the data for platinum and natural gas begin in August 1985 and May 1991, respectively.) Outside of a few obvious pairs, such as gold-silver, corn-soybeans and crude oil-heating oil, the correlations tend to be quite low and in many cases statistically equivalent to zero. In addition, the betas of these

commodities relative to the CRB index are, with the exceptions of corn, wheat, coffee and sugar, quite different from the base level of 1.00 we would expect if there was in fact a monolithic entity called "commodities" rising and falling before our eyes.

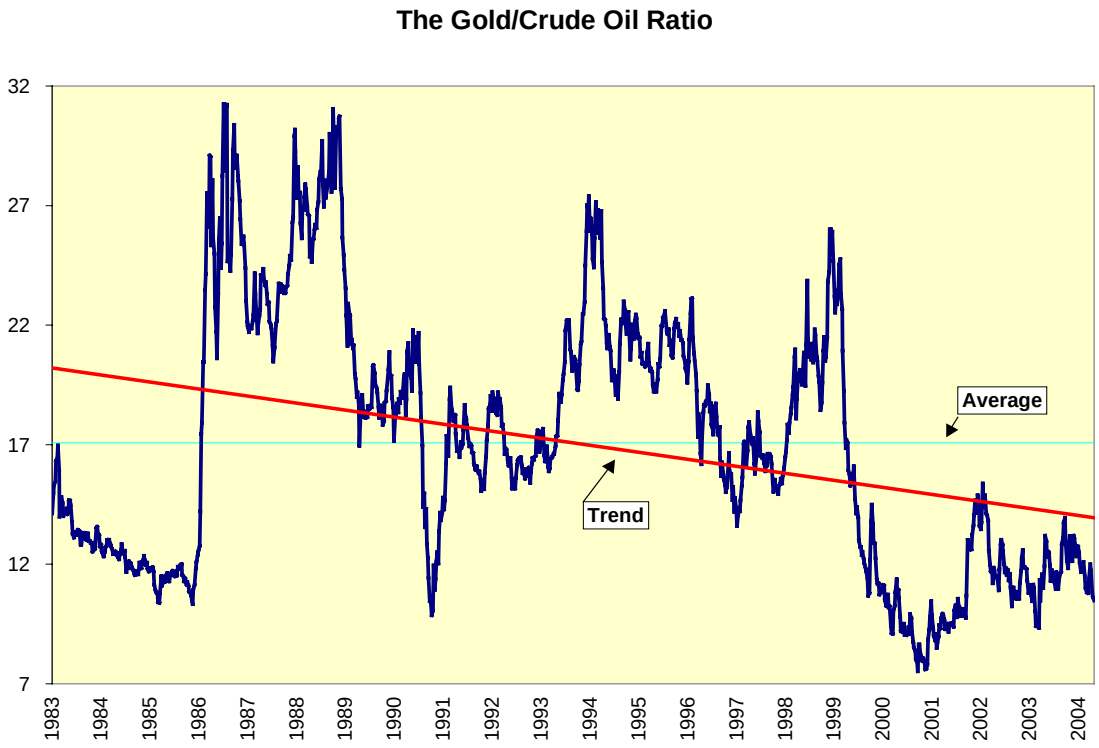
To turn a Wall Street cliche on its head, we have a market of commodities, not a commodities market.

Beware The Spurious

This lack of correlation amongst the physical commodities except for those pairs that are either substitutes or joint products, such as crude oil and heating oil, should be unsurprising. While financial markets are driven by a few variables and broad trends with profound impacts - think relative monetary policies or expected macroeconomic growth rates - commodity markets are influenced by numerous different factors, each of which may be unique. For example, rainfall in Iowa is critical for corn, but does it really matter for platinum?

Most commodities have unrelated production cycles, supply/demand economics, and substitution and price elasticity dynamics. As a result, longer-term proclamations of equilibrium relationships or mean-reversion tendencies are meaningless *unless a substitution or joint product relationship exists*; at all times, we should be aware that correlation can exist without causality.

For example, does an equilibrium relationship between gold and crude oil exist? Based upon the 15.1% correlation of returns shown in the previous table and on their vastly different betas to the CRB index itself, 1.39 for crude oil and .555 for gold, the answer should be obvious. The answer is equally obvious by taking a simple ratio of the two commodities' prices.



Mathematically, three criteria must be fulfilled before we can claim a stationary relationship: No trend in the mean, stable variance and correlation between data points that is solely a function of the time lag between them. All of these are lacking in the gold/crude oil relationship, and given the lack of an economic relationship between the two commodities, we can now consign the series to its fate.

Investment Implications

The three most important things in investing are diversification, asset allocation and risk management. Given what we have seen above and given the headwinds we are likely to be facing in conventional asset management from higher interest rates, all of us would do well to broaden our investment horizons into alternative assets, managed futures included. Just keep in mind you are investing in the skills or lack thereof of managers more than you are allocating funds to asset classes with natural returns.