



What's Up With Commodities?

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Commodities are not the secret ingredient in a portfolio. They just happen to have low correlation to virtually every other asset in the typical accumulation portfolio. The “secret” (if there is one) is to assemble portfolios with assets that have low correlation to each other (or at least as low as possible). Said differently, commodities are not special simply because they’re commodities. Rather, commodities add distinctive value within a portfolio because they bring a return pattern that has low correlation with the return patterns of the other portfolio’s assets.

Think of portfolios as a recipe that calls for different ingredients. Interestingly, some dishes are sweetened by adding something that (by itself) is sour, like Balsamic vinegar. Or, sometimes we add an ingredient that most of us would never consume by itself (think Tabasco sauce here).

The classic arguments against commodities are that, unlike businesses, they do not generate intrinsic cash flow and historically generate returns faring no better than the rate of inflation. But these distinctions are losing relevance, and there is no reason to believe that future returns will merely track inflation. Commodities are the raw materials driving globalization, and their prices are subject to long term supply and demand imbalances. Many businesses produce commodity products (cement, chemicals, and generic pharmaceuticals) which are sold purely on the basis of price. Investors would not think twice about owning these businesses (at the right valuation) in their portfolios. And, unlike businesses, commodities cannot go bankrupt, so there is no risk of a complete loss. Owning physical commodities is a lot more reasonable in this context.

Consider the data in Figure 1 below. Notice the correlation commodities have to all the other asset classes: low and negative. By contrast, the annual returns of large cap US stocks (S&P 500) had a 74% correlation with the annual returns of US small cap stocks, and the large cap US stocks had a 59% correlation with the returns of non-US stocks.

The 38-year historical performance of large-cap US equities is represented by the S&P 500 Index, while the performance of small-cap US equities is captured by using the Ibbotson Small Companies Index from 1970-1978, and the Russell 2000 Index from 1979-2007. The performance of non-US equities was represented by the Morgan Stanley Capital International EAFE Index (Europe, Australasia, Far East) Index. U.S. intermediate term bonds were represented by the Ibbotson Intermediate Term Bond Index from 1970-76 and the Lehman Brothers Intermediate Term Bond index from 1977-2007.

The historical performance of cash is represented by 3-month Treasury Bills. The performance of real estate is measured by using the annual returns of the NAREIT Index (annual returns for 1970 and 1971 were regression-based estimates inasmuch as the NAREIT Index (National Association of Real Estate Investment Trusts) did not provide annual returns until 1972). Finally, the historical performance of commodities is measured by the Goldman Sachs Commodities Index (GSCI). As of February 6, 2007, the GSCI is known as the S&P GSCI Commodity Index.



Figure 1.
38-Year Correlations (Using Annual Returns from 1970-2007)

	Large US Equity	Small US Equity	Non-US Equity	US Bonds	Cash	REIT
Small US Equity	0.739					
Non-US Equity	0.586	0.470				
US Bonds	0.220	0.063	-0.100			
Cash	0.046	0.014	-0.122	0.407		
REIT	0.462	0.757	0.297	0.104	-0.050	
Commodities	-0.281	-0.318	-0.145	-0.210	-0.001	-0.271

Let's consider two two-asset portfolios to illustrate the benefit of combining assets with dissimilar return patterns (i.e., low correlation). This analysis assumes a buy-and-hold portfolio at the start of 1970 through the end of 2007. Annual rebalancing is assumed. The results are before taxes and inflation.

As shown in Figure 2, the 38-year return of large cap US stocks, small cap US stocks, and commodities were reasonably similar. We use large cap US stocks as the core portfolio asset, and then add either small cap US stocks OR commodities as the second (equally-weighted) asset.

The "second" assets (small cap US stocks and commodities) have similar risk characteristics (standard deviation of return, number of years with a negative return, and worst case one-year return). Thus, adding either one to large cap US stocks should produce approximately the same ending result in a two-asset portfolio.

This is not the case.



Figure 2.
The Impact of Low Correlation in Two-Asset Accumulation Portfolios

1970-2007	Large US Equity	Small US Equity	Commodities	Two-Asset Portfolio 50% Large US 50% Small US	Two-Asset Portfolio 50% Large US 50% Commodities
38-Year Average Annualized % Return	11.03	11.74	11.99	11.62	12.74
38-Year Standard Deviation of Annual Returns	16.61	21.69	23.91	17.88	12.49
Number of Years with a Negative Return	8	11	9	11	4
Worst One-Year % Return	(26.47)	(30.90)	(35.71)	(23.19)	(21.90)
Worst Three-Year Cumulative % Return	(37.59)	(42.22)	(26.04)	(33.71)	(1.37)

The portfolio with 50% large cap US stocks and 50% small cap US stocks had a 38-year annualized return of 11.62%, representing an improvement over either asset individually. The standard deviation of return was 17.88%, a bit higher than large cap stocks alone, but markedly lower than small cap stocks as the sole asset. The number of years with a negative return was 11, or 29% of the time. The worst one-year return for the two-asset portfolio was 23.19%, lower than either asset individually. The worst-case three-year cumulative percentage loss was -33.71%, representing a slight improvement over large cap stocks as the sole asset, and a major improvement over small cap stocks in isolation. The correlation between the annual returns of large cap and small cap US stocks over this 38-year period was about 74%.

We now examine the performance results when combining large cap US stocks and commodities (50% in each). Some may say that's crazy because commodities are "too risky". Interestingly, I've just demonstrated that commodities have return and risk characteristics that are very similar to small cap US stocks—and many investors do not go ballistic when a large portion of their portfolio is allocated to small cap US stocks. The correlation between large cap US stocks and commodities during this time frame was -28%, which improves the performance of the portfolio. The average annualized return was 12.74%, higher than either asset by itself. The standard deviation of return was reduced dramatically to 12.49%. The number of years with a negative return was 4. The worst one-year return was similar at -21.90%. The most dramatic statistic is a worst case three-year cumulative return of only -1.37%.

Because commodities zig when other assets zag, the chance for prolonged portfolios losses is nearly eliminated.



Will commodities continue to produce this advantageous portfolio effect in the future? Nobody knows. Ironically, commodities (as a broad asset class) are all about the *futures*.

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