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A look at
commodity
futures as a
“real asset”
alternative.

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Volume 18 | Number 3 | Summer 2006

An Introduction to Commodity Futures Investing

Wheat, soybeans, and live cattle. These may not seem like typical investments the way most people view stocks or bonds, but commodity futures, as they are collectively known, is a major asset class that has recently been gaining interest among institutional investors.

For portfolios that have significant exposure to financial assets, such as stocks and bonds, commodity futures represents a “real asset” alternative that has historically demonstrated the following portfolio enhancement characteristics:

- Low correlation with equities, thus adding to diversification;
- Ability to contribute to the portfolio’s total return;
- Unique exposure to the business cycle-performance trends that differ from major movements of the equity markets; and
- Potential to hedge against inflation.

In short, an allocation to commodity futures serves to enhance a portfolio’s risk and return profile.

A commodity futures contract represents the obligation to buy or sell a specific asset at a pre-specified time and at a pre-determined price. Many raw materials producers and consumers use

commodity futures to hedge their exposure to price fluctuations. For instance, a farmer who expects to harvest corn in three months can sell a three month corn contract today. This will obligate the farmer to sell a pre-determined amount of corn to the contract buyer in three months at a price determined at contract initiation. The farmer has a “short” position in the corn contract. This contract eliminates the price risk for the farmer, who has locked in his sale price regardless of how the market price of corn moves during the next three months. If prices fall, then the farmer secures the higher price specified in the contract. If the market price of corn rises however, the farmer receives the lower specified contract price.

Commodities producers and consumers represent only a small fraction of futures contracts investors. Many investors view commodity futures as a unique asset class that can enhance the risk and return

profile of their portfolios. These investors have no intention of delivering or buying the actual commodities and close out any positions prior to the delivery date with offsetting trades. For instance, if an investor buys a specific coffee contract, that investor would sell the identical coffee contract at a later time to close out the position.

How Can an Institution Invest in Commodity Futures?

Institutional investors can gain commodities exposure through several channels. First, the investor can actually purchase and store the physical commodities, with the expectation to sell them later at higher prices. However, storing barrels of oil and bushels of corn is very expensive and impractical for most investors. Investors can also purchase the stocks of commodity producing companies, such as oil refiners or agricultural producers. This strategy though does not provide direct commodities exposure, as other factors may drive the stock prices and many of these companies will hedge away any price exposure.

Another option is to access the commodities market through a commodities trading advisor (CTA), which will take active long and short (i.e., buy and sell) positions in several different futures markets. However, CTAs tend to invest aggressively based on price momentum and favor financial futures (such as

positions in Treasury securities futures) over commodities. Because CTA strategies take long and short positions, a portfolio strategy designed to capitalize on the underlying asset class and its relationships with economic events may be compromised. Furthermore, the performance fee structure can be cost prohibitive.

A more practical approach to commodities is through a long-only, fully collateralized passive index strategy. With this strategy, the investor holds long-only contract positions in a diversified basket of several commodities; all positions are backed by commensurate amounts invested in short-term investments. For example, to buy a 5,000 bushel soybean contract at \$5.93 per bushel, an investor would allocate \$29,650 (5,000 x \$5.93) to a short-term investment (such as T-bills) to fully collateralize this commodities position. This investment would earn the risk-free T-bill return, while the futures contract would provide the commodities exposure. As the price of soybeans fluctuates, the value of the account will also rise and fall. If soybean prices rise, the price difference will be added to the cash account. If prices fall, cash will be withdrawn from the T-bill account to cover the loss. As the contract nears maturity,¹ the portfolio manager will close the existing contract position and buy the contract with the next closest delivery date.

FIGURE ONE

Index Features

	Dow Jones - AIG Commodity Index	Goldman Sachs Commodity Index
Index Construction	Composed of futures contracts on 19 commodities.	Composed of futures contracts meeting minimum liquidity levels. Currently includes 24 commodities.
Commodity Weighting	<ul style="list-style-type: none"> Primarily determined by liquidity (the relative amount of trading activity); secondarily by dollar-weighted production volume. Commodities groups capped at 33% of index. Single commodities bound between 2% - 15%. 	<ul style="list-style-type: none"> Index is world production weighted, based on trailing 5 year production data. No limits on weightings.
Rebalancing	Annually; changes effective in January.	None.

¹Most contracts have maturity dates between a few months and two to three years. Passive investment accounts typically hold the contracts with the closest delivery dates, which are the most liquid.

With a passive account, the portfolio manager will buy contracts to match the exposures of a recognized commodities index. The most common indexes used by institutional investors are the Goldman Sachs Commodity Index (GSCI) and the Dow Jones-AIG (DJ-AIG) Commodity Index.

Figure One explains how each Index is constructed.

Each construction methodology has advantages and disadvantages, which stem primarily from the allocation limits. The DJ-AIG caps broad commodities groups at 33%, while the GSCI does not. As a result, the GSCI exposure to energy futures (such as crude oil and natural gas) has risen to more than 70% of the total index as of June 2006. This exposure has provided a significant source of return, and the negative correlation between energy and the equity markets has contributed to the diversification benefits. However, the exposure has also increased the volatility of the index. Conversely, with a cap on sector exposures, the DJ-AIG has less volatility, but also potentially limits a source of return and diversification. The return statistics prove this point: over the past ten years,² the DJ-AIG has earned an annualized return of 7.9% with a standard deviation of 14.1%, while the GSCI has earned a return of 8.3% with a standard deviation of 20.9%.

What are the Benefits and Risks of a Commodity Futures Investment?

Over the past few years, an investment in crude oil, gold, or several other commodity futures would have earned returns significantly higher than equities or other traditional investments, albeit with higher risk. Over the longer term, however, commodities have experienced returns and risks similar to equities. Since January 1970 (the first month of returns for the GSCI),³ the GSCI has earned an annualized return of 12.2% with a standard deviation of 19.9%, compared to the S&P 500 Index return of 11.2% and standard deviation of 16.7%. Although the GSCI has higher

FIGURE TWO
Commodity Index Correlations

Index:	DJ-AIG Commodity	GS Commodity	S&P 500	LB Aggregate
DJ-AIG Commodity Index	1.00			
GS Commodity Index	0.90	1.00		
S&P 500 Index	0.11	0.00	1.00	
LB Aggregate Index	0.03	0.06	-0.07	1.00

volatility than equities, when considered as part of a total portfolio, commodities can actually reduce the total risk. Due to the low correlation with traditional equity and fixed income investments, an allocation to commodity futures can help diversify a portfolio. *Figure Two* shows that both the DJ-AIG and GSCI have almost no correlation⁴ with the S&P 500 and LB Aggregate Indexes. This low correlation suggests that the variations in returns of these different asset classes will partially offset one another, resulting in a total portfolio with less volatility than the component asset classes.

The low correlation between commodities and other asset classes is due to commodities' unique exposure to the business cycle. Stocks tend to underperform during the early periods of a recession, while commodities tend to perform well. Conversely, commodity futures tend to lag during the late periods of a recession and the early periods of an economic expansion, but stocks typically perform well during these stages.⁵

Furthermore, commodities may also be able to hedge a portfolio's value against inflation. Equities and bonds tend to both perform poorly during periods of inflation. However, commodity futures represent a bet on future commodity prices, which relate to the underlying components of inflation. Also, since the futures prices include information about potential price trends, they rise and fall with unexpected deviations in the level of inflation.⁶

² As of 3/31/2006.

³ The DJ-AIG Index has a shorter return history (1991), which does not capture the long-term performance history as well as the GSCI. Both indexes are subject to backfill errors, as the actual GSCI Index has been traded only since 1992, while the DJ-AIG Index has been traded since 1998.

⁴ Over ten years, as of 3/31/06.

⁵ Gary Gorton and K. Geert Rouwenhorst, "Facts and Fantasies about Commodity Futures," *Yale International Center for Finance*: Working Paper No. 04-20, February 2005: 21.

⁶ Gorton and Rouwenhorst: 15.

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In addition to the benefits, investors must also consider the risks of commodities investing. Over a short time horizon, commodities are more volatile than stocks or bonds, so an investor with a long-term investment horizon (who has more time to recover any potential losses) is more likely to benefit from an allocation than one with a shorter horizon. Given the recent strong performance of commodities, the timing of an initial investment must be considered. Strong performance may foretell a period of significant losses. Historically, commodities indexes have experienced peak to trough losses similar to equities: -48.3% versus -44.7%⁷ (however, these losses have not been coincidental). To mitigate the risk of adding an allocation at the “top” of the market, investors can implement a dollar-cost averaging strategy to gradually build a commodities allocation over time.

Additionally, as with any investment, investors must keep in mind that past performance does not guarantee future results. The recent strong performances of the DJ-AIG and GSCI Indexes have been partially attributable to their exposure to energy. If energy contract prices drop significantly, the Indexes (especially the GSCI) may post meaningful losses. Also, as commodity futures investing becomes more common, the additional

capital supplied to the market may result in a lower risk premium and therefore lower potential returns to investors.

Is Now the Right Time?

Investors may believe that since many commodities have risen sharply over the past few years, now may not be an opportune time to build an allocation. While we cannot make predictions about future trends in the commodities markets, we can offer this thought: a significant pullback in energy and/or other commodities prices could result in strong equity performance, as corporate profits may rise as input costs drop. This uncorrelated performance is one of the key benefits of commodity futures.

However, we also must warn that the higher short-term volatility suggests that commodity futures are more appropriate for portfolios with longer time horizons that can endure periods of losses. Yanni Partners, using its asset allocation modeling capabilities, can evaluate whether a portfolio can benefit from an allocation to commodities. For those investors comfortable with the inherent risks, commodities can add to a portfolio a source of uncorrelated return that might improve the overall risk and return profile.

Yanni Partners provides a full range of consulting services vital to the management of various portfolios. Our ultimate goal is to offer a basis for improved investment monitoring and performance.

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⁷ GSCI vs. S&P 500