Gasoline and Coffee Fuel Our Daily Lives; How Can Commodities Fuel Our Investment Portfolios?

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Commodities are a tangible part of our daily lives. They are the food we eat, the energy that powers our cars and heats our homes, the metals that go into our electrical wiring and our jewelry. Yet as familiar as they are, investing in commodities can seem elusive.

Unlike stocks and bonds, commodities are physical assets. And for the vast majority of investors, taking delivery of barrels of oil, bushels of wheat, and other physical assets is impracticable. For centuries, people have used futures markets to solve this problem; the first official exchange with standardized contracts and centralized clearing emerged in Japan in the early 1600s. In the United States, futures contracts on wheat and cotton began trading in the mid-1800s.

Today, commodity exchanges are ubiquitous. They give investors a way to gain or offset exposure to a spectrum of commodity prices without having to deal with delivery and storage. They also give investors access to an asset class that can help diversify portfolios, hedge inflation and event risks, and provide a return potential that can be enhanced through skilled active management. In addition, commodity exchanges offer an important service to commodity producers by allowing them the ability to offset pricing risk or to hedge future production costs.

The Case for Commodities Today
In the broader portfolio context, investors typically look to a commodities allocation to provide three key benefits: diversification, inflation protection, and return potential.

Admittedly, the return benefit has been difficult in recent years because commodities have experienced a challenging performance period. However, commodity returns tend to be cyclical, so commodities’ recent history should not be extrapolated into the future. The past few years of commodity returns are not an aberration, but nor are they the norm.

Commodity asset class returns tend to go through cycles of positive and negative performance, which largely coincide with economic growth cycles.

To illustrate, figure 1 compares the return of a 55-percent equity/40-percent bond/5-percent commodity portfolio versus a 60-percent equity/40-percent bond portfolio. The relative performance of the portfolio containing commodities has varied over time, with periods of underperformance occurring as expected during economic downturns. Commodities as a whole are growth-sensitive assets, especially in recessions that coincide with plentiful commodity supplies and weak demand—exactly what occurred during the global financial crisis (GFC). Importantly, these periods have been followed by years of recovery in commodity returns and the outperformance of the 55/40/5 portfolio. Therefore it is worth...
taking a longer-term perspective when evaluating the ongoing return potential for the commodity asset class.

While the return benefit of including commodities in a broader portfolio can be cyclical over time, the diversification benefit has remained consistently positive, which has led to better risk-adjusted returns over time. As figure 1 shows, the volatility of the 55-percent equity/40-percent bond/5-percent commodity portfolio has been below that of the 60-percent equity/40-percent bond portfolio during various economic cycles over the past 45 years.

The correlation of commodities to equities did pick up temporarily in the aftermath of the GFC. This was the result of the decline in aggregate demand that uniformly affected many asset classes, resulting in higher correlations among them. However, commodities have returned to responding more to fundamental supply factors. These can include weather, which impacts natural gas and grains prices; geopolitical instability, which influences crude oil; or mining strikes, which affect metals. Importantly, these factors do not tend to impact stock or bond market returns, and accordingly, correlations between commodities and other asset classes have come down. Recent correlations also have declined among individual commodities as the markets have come out of the GFC. This low correlation among commodities contrasts sharply with the generally high sector correlations within other asset classes; figure 2 presents a comparison of correlations within the commodities sector and correlations within the equity sector as an example. Further, the fact that commodity correlations have returned to lower levels in the past few years is additional evidence that supply fundamentals once again are taking over commodity returns, and that each commodity is responding to its own idiosyncratic conditions rather than to the effect of aggregate demand on the entire asset class.

Finally, in terms of overall portfolio benefit, commodities help hedge a portfolio against inflation shocks. While food and energy comprise approximately one-quarter of the Consumer Price Index (CPI), they drive the majority of changes, especially unexpected changes, in inflation. In other words, food and energy drive the majority of CPI volatility. This unexpected volatility is especially harmful to stock and bond returns. The commodity asset class, on the other hand, has a positive correlation to changes in inflation because commodities drive these changes. Furthermore, commodities tend to exhibit an outsized response to inflation, meaning that when inflation increases above expectations, commodity returns increase more than the change in the inflation rate. So to the extent that inflation surprises to the upside, a commodity allocation can provide a potential hedge against inflation beyond just the original dollar amount invested.

**Weighing Investment Implementation Alternatives**

Owning actual commodities is impractical and creates concerns about which commodities to buy and how to pay for storage and insurance. One can invest in equity of commodity producers, but this too comes with complications. Commodity producers may hedge away their exposure to commodity prices, and the return on equity may be affected by the financial structure, unrelated business, or management talent of the company. Consider the 2010 Deepwater Horizon oil spill. Oil prices were going up as the stock price of BP was plummeting. Managed futures, or commodities trading advisor (CTA) type, strategies offer exposure to commodity prices; however, these strategies lose some of the inherent benefits of the asset class because they do not consistently allocate to a broad basket of commodities and can shift exposures between long and short holdings.

Broad commodity indexes, on the other hand, are constructed to provide investors with systematic exposure to commodities as an asset class. A commodity-index-based investment involves holding long futures contracts on an array of underlying physical commodities, with allocation percentages based on global economic importance. This approach offers investors consistent long exposure to prices of a basket of commodities, which in turn offers the potential for diversification and inflation-hedging benefits to the overall portfolio.

The most widely used commodity indexes include the S&P Goldman Sachs Commodity Index (S&P GSCI), the Bloomberg Commodity Index (BCOM), and the Credit Suisse Commodity Benchmark (CSCB). Each of these indexes is designed to provide the benefits of the commodities asset class but differs slightly in construction. For example, S&P GSCI places greater weight in the energy sector, which gives it a higher sensitivity to inflation but with higher volatility. BCOM, however, incorporates caps on...
each of the underlying sector weights and is thus more diversified. BCOM and S&P GSCI can be considered first-generation indexes because they hold their exposures in front-month futures contracts, and when those contracts approach maturity, they roll them to the next available month during a narrow trading-day window at the beginning of each month. CSCB incorporates holding the first three-month contracts for each commodity and rolls the futures exposure over a wider trading window.

Each index has predetermined rules that govern construction, contract holdings, and roll schedules. This means that each index has predictable trading patterns that an active commodity investor can seek to exploit.

Adding Value through Active Management

We have established that the commodity futures markets are distinct from traditional investable assets such as stocks and bonds, and that commodity index-based investments can offer a variety of investor benefits including portfolio diversification, inflation hedging, and return potential. In addition, commodities also offer a fertile opportunity for active management and potential for alpha generation for capable investment managers. The three main layers of value-add in commodities are (1) taking advantage of structural, or rules-based, inefficiencies; (2) harvesting commodity market-specific risk premia; and (3) outperforming through in-depth bottom-up fundamental analysis.

Structural Inefficiencies

As previously described, a static buy-and-hold approach is impossible for commodities because futures contracts must be rolled to avoid delivery. Most long-only investors find themselves investing in collective vehicles, where professional money managers can manage frequent rolling of futures contracts and potentially take advantage of a number of structural inefficiencies inherent in commodity indexes.

Optimized roll strategies. Because commodity indexes follow a predetermined roll schedule, we already know today the precise moment when an entire passive commodity portfolio is turning over next month. Because these flows are predictable, avoiding rolling during those predetermined trading days, by rolling either before or after them, historically has led to better execution. We believe this strategy continues to be a value-additive trade.

Holding deferred contracts. Another structural way to seek outperformance versus a passive indexing approach is to hold commodity exposure further out on the futures curve and not in the index-specified monthly contracts. Because commodity futures curves normally are upward sloping and the curve is steeper in the front months, moving out on the curve may have positive implications on realized roll yield. In addition, holding deferred contracts reduces overall volatility because the front-month contracts tend to be on the most volatile part of the futures curves.

Of course, as with any active deviations from a benchmark, it is crucial to avoid blindly implementing such structural trades without considering the fundamentals driving today’s markets. For example, pre-rolling during early 2014 was a risky proposition because extreme weather increased market volatility, especially in the front months, thereby elevating the active risk of pre-rolling without also improving the expected returns of the trade.

Earning Risk Premia in Commodities

Another important distinction between commodity-futures and traditional-asset markets is the difference in motivations among market participants. Investors in stocks generally seek to profit from a company’s business operations through dividends and stock price increases. Profit maximization in commodity investing is a legitimate incentive but by no means the only or even the dominant motive of many market participants. A large part of commodity futures transactions is undertaken by so-called “hedgers,” most often representing companies that use commodities as an input or output of their business activities. Their intention could be to offset pricing risk or to hedge future production costs. Said differently, hedgers do not require their commodity trading activities to be profitable to gain an economic benefit.

One recent example is hedging activity by U.S. shale oil producers. Selling West Texas Intermediate (WTI) crude oil futures one year out hedges their price risk, and as long as they know they can produce the oil sold forward at a price lower than the forward price, they will realize a profit and be comfortable scaling their operations. And for the service of price protection, they are willing to pay a premium. This is a premium that commodity investors can earn.

Note that this premium is not earned automatically by buying passive long-only exposure. As explained previously, commodity indexes gain exposure in the front of the futures curve; hedgers might be active further out the curve. To take advantage of such flow dynamics, an active approach to commodity investing is required.

The following is another trade example that shows potential benefits from a structural premium in commodity markets provided by economic market participants, i.e., hedgers: Weather has a high impact on natural gas demand and also, to a lesser extent, on production. Generally speaking, the colder the winter, the more natural gas is demanded. In fact, the impact of weather on natural gas demand is so great that every year there is a small risk we could run out of natural gas by the end of the winter season. This could happen, for example, when extreme cold is affecting demand as well as limiting production, thereby leading to a significant impact on balances.

To manage this price risk at the end of the winter season, natural gas buyers (e.g., utility companies) typically hedge their exposures and buy March natural gas futures. This way they can be sure to fulfill their natural gas needs, no matter what the spot price will be. As a consequence, March natural gas tends to trade significantly above April or other post-winter natural gas. The utilities are fine overpaying for the March contract because they gain an economic benefit for their operations.
Active commodity managers can benefit from the utilities' hedging activities. By selling the expensive March natural gas contract and simultaneously buying the cheaper April natural gas contract, one can profit as prices of the two contracts converge once it is certain we will not run out of natural gas that year. Figure 3 illustrates how the premium between March and April declines over time in most years. We also see that despite the generous premium to be earned, the trade can be volatile—making a risk-managed approach to sizing these types of trades imperative.

Fundamental Analysis in Trading Commodities

Finally, the third layer of additional value comes from fundamental analysis. It is arguably the most difficult to implement, but it is also the most rewarding if done right. Fundamental analysis evaluates current and future supply and demand balances across commodities and regions to identify potential mispricings. It requires extensive market knowledge and experience and can involve leveraging significant resources to develop more-reliable models of shifts in future commodity supply/demand balances.

As an example, fundamental pricing relationships between different crude oil contracts can present compelling opportunities for active management. One such opportunity arose following the start of the U.S. shale revolution. Before 2011, the price relationship between U.S. crude oil (WTI) and globally traded Brent crude oil was more stable. But starting in 2011, WTI began trading at a notable discount to Brent. This was the result of the massive flow of U.S. crude oil to a delivery point in Cushing, Oklahoma. However, there was not enough pipeline capacity to get WTI from Cushing to the Gulf Coast refineries, resulting in elevated Cushing inventories and depressed WTI prices relative to Brent. Understanding the drivers of this price dislocation and evaluating the potential catalysts for a price reconnection created an opportunity to express a relative value view between the two oil prices. Research into energy transportation would have brought to light infrastructure developments to move WTI from the middle of the country to the Gulf Coast, and knowing the timing of the build-out completion would have added another important layer to formalizing a long WTI versus short Brent trade.

Figure 4 highlights outgoing pipeline capacity from Cushing to the Gulf Coast and also plots the price differential between WTI and Brent crude. Pipeline capacity from Cushing, in fact, grew when the Seaway pipeline reversed to flow to the Gulf Coast in June 2012 and expanded when the Seaway project was completed in the first quarter of 2013. The completion of additional pipeline projects in the second quarter of 2013 effectively finalized the convergence of WTI and Brent.

Portfolio Construction

Trading March versus April natural gas or WTI versus Brent crude are just two examples of active positioning within the commodity allocation that may help achieve returns above a passive commodity index. But in addition to conducting thorough bottom-up research at the individual commodity level to generate views and active trade ideas, it is equally important to have a strong focus on using a broad opportunity set and a robust portfolio construction approach.

First, it may prove beneficial to look across all commodity sectors that are represented in the commodity index—e.g., petroleum, natural gas, agriculture, and metals—to source for active trade ideas. Doing so achieves the flexibility to shift active portfolio risk to those sectors that offer the most-compelling opportunities and helps avoid being forced into trades with suboptimal risk-return profiles.

Furthermore, we believe it is prudent to construct a diversified portfolio of active views with uncorrelated investment themes so no single trade can dominate the risk profile. By ensuring that the portfolio does not have concentrated risk exposure, a negative move in any one trade should not result in a severe shock to the overall portfolio, because it is likely to be offset by returns from other active views. As such,
This requires significant risk management should be done in a risk-controlled manner. Taking active positions in commodities always have been a volatile asset class and may not be suitable for all investors. Derivatives and commodity-linked derivatives may involve certain costs and risks, such as liquidity, interest rate, market, credit, management and the risk that a position could not be closed when most advantageous. Commodity-linked derivative instruments may involve additional costs and risks such as changes in commodity index volatility or factors affecting a particular industry or commodity, such as drought, floods, weather, livestock disease, embargoes, tariffs and international economic, political and regulatory developments. Investing in derivatives could lose more than the amount invested. Diversification does not ensure against loss.

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It is not possible to invest directly in an unmanaged index.

Statements concerning financial market trends or portfolio strategies are based on current market conditions, which will fluctuate. There is no guarantee that these investment strategies will work under all market conditions or are suitable for all investors and each investor should evaluate their ability to invest for the long term, especially during periods of downturn in the market. Outlook and strategies are subject to change without notice. This material contains the current opinions of the authors but not necessarily those of PIMCO and such opinions are subject to change without notice. This material is distributed for informational purposes only and should not be considered as investment advice or a recommendation of any particular security, strategy or investment product. Information contained herein has been obtained from sources believed to be reliable, but not guaranteed. No part of this material may be reproduced in any form, or referred to in any other publication, without express written permission.