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COMMODITY INVESTING:

Indexes Are Not Your Friends

You keep using that word. I do not think it means what you think it means. – Inigo Montoya

RESEARCH BRIEF

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In the last five years, a large number of investors have been introduced to the commodity asset class, and a typical entry into this space has been through the use of an index-based ETF, ETN, or swap. Most investors believe this will give them an experience similar to the equity markets, where an index-based product represents an unbiased view of the market portfolio, using market capitalization as weights. Unfortunately, this intuition proves misguided due to a number of important differences in how these indexes are constructed. ▶▶

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Instead of being an objective view of the investable universe of physical commodities, they are instead a very explicit set of trading rules for a portfolio of arbitrarily weighted commodity futures. Furthermore, these rules are so explicit that more experienced investors are exploiting the buying and selling patterns of passive money to the detriment of the end investor.

►► YOU CALL THAT AN INDEX?

As commodity investing has become more popular, three benchmarks have attracted the majority of the passive assets, namely the S&P-Goldman Sachs Commodity Index (S&P GSCI), the Dow Jones – UBS Commodity Index (DJ-UBSCI), and the Rogers International Commodity Index (RICI). One initial misconception arises around what these indexes are measuring. To be clear, they do not measure the returns of either equities or physical commodities, due to limitations in investing in these instruments. The stocks of mining, energy, and agriculture companies certainly have a commodity component to their returns, but the commodity beta in such an investment is overwhelmed by the equity beta. Holdings of physical commodities, on the other hand, prove impractical for most investors due to complications arising from storage and transportation. Due to these characteristics, the above commodity indexes are based on fully-collateralized commodity futures positions, where the prices of the futures are derived from that of the underlying commodity.

Given that all three indexes are put forward as describing the broad commodity asset class, some odd facts arise if you dig a little deeper into their return patterns. Consider the following table, comparing annualized return and volatility over the last ten years (January 2000-June 2010):

	S&P GSCI®	DJ-UBSCI SM	RICI®
Return (p.a.)	3.6%	5.8%	8.4%
Volatility (ann.)	25.3%	17.4%	19.4%

These dramatic variations in return and volatility patterns over the past decade give rise to the sensible question: if these indexes are all describing the same asset class, why are they so unlike? This certainly isn't true if you compare more familiar indexes attempting to describe the same asset class (the S&P 500 and Russell 1000, for example¹). A typical response to this question then, is to note that the sector exposures underlying these benchmarks are also different, as can be seen below (sector weights as of June 2010).

	S&P GSCI®	DJ-UBSCI SM	RICI®
Energy	70.5%	31.8%	44.0%
Base Metals	7.7%	17.6%	14.0%
Precious Metals	3.7%	14.6%	7.1%
Ags/LiveStock/Other	18.1%	36.0%	34.9%

¹ The relevant return/volatility statistics are Return: S&P 500 = -1.55%, Russell 1000 = -1.09%; Volatility: S&P 500 = 16.27%, Russell 1000 = 16.68%

But this simply pushes the question back to square one – How can three benchmarks which are all supposed to be describing the commodity asset class show such different sector exposures? The answer is based on a structural peculiarity which arises from the benchmarks being based on futures rather than on the physical commodities themselves.

To understand this, we have to understand the nature of a futures exchange. All futures exchanges involve the use of a centralized clearinghouse mechanism. This structure is set up to balance supply and demand, such that whenever a future is bought, an equal and offsetting position is also sold. As such, the clearinghouse is simply the conduit between these two positions, where the losses of one party are transferred to be the gains of another. Because of this, if the concept of market capitalization is applied to the futures market, all commodity contracts would have zero market cap (i.e. market cap of long positions - market cap of short positions = 0).

Because of this feature of futures markets, there is no natural “market weight” for a commodity index to apply to its constituent contracts. Index providers, needing to have some consistent weighting mechanism to apply, have developed a variety of supposed proxies to play a similar role in their indexes. These include “global production” for S&P GSCI, “economic significance” for the DJ-UBSCI, and “consumption patterns worldwide” for the RICL. There is no clear argument that any one of these is better than another, and some critics maintain that these proxies suffer from overzealous back-testing, to generate impressive historical performance. Even more apparent, these indexes are not attempting to provide a “slice of the market”, as most mainstream equity indexes do, but instead are simply very explicit commodity trading strategies based on different arbitrary metrics for measuring the importance of a given commodity contract. This fact is not well recognized by the investors in many of the index-based passive vehicles.

►► SITTING DUCKS

Another feature of commodity indexes worth examining relates to the rules governing the rolling of the index contracts. Commodity futures are contracts with an expiration date, and if an investor holds the future into expiration, then he must take physical delivery of the underlying commodity. To avoid this, each of the indexes periodically “rolls” their exposure, by selling out of a contract which is close to expiration, and buying a contract (on the same underlying commodity) which has a longer time to expiration.

As an index must be explicit about their construction rules, these rolling rules are typically of the form that a certain fixed percentage of the contracts must be rolled on a fixed schedule; e.g. for the GSCI, 20% of the futures are rolled on each of the 5th thru 9th business day. Given their public nature, once an index attracts a material amount of assets, other market participants take advantage of these fixed roll dates, and essentially front-run these trades². This activity artificially raises the price of the contracts that the indexed products must then purchase, and lowers the price of those which they are forced to sell.

²This trade has become so common that it is known as the “Goldman roll” trade.

When the prices of the contracts revert to their true economic value, the investor in the index-based swap, ETF, or ETN suffers losses. As these rolls occur numerous times throughout the year, the cumulative effect of being traded against can become significant for the index-based investor.

►► A PASSIVE SOLUTION IS HARD TO FIND

As outlined above, one encounters a number of unique challenges when attempting to passively invest in the commodities asset class. Whereas a market value weighted index in equities and bonds, gives a reasonable approximation of the opportunity set for an investor; there is no equivalent weighting mechanism which will create a similar portfolio in commodities. This has resulted in the mainstream indexes not providing what most people would consider a passive exposure to the asset class. Rather, the construction rules have resulted in substantial concentrations at the contract and sector level, and fixed rebalancing rules which leave passive investors open to abuse by other market participants. Investors and advisors need to be aware of these pitfalls that the industry has created for them, and to the extent possible, seek to avoid them when making investment decisions.

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