RED ROCK

Commodity Long-Short* Investing for RIAs, HNWs, Fund of Hedge Funds and Family Offices

**Long-Short and Long/Short are used interchangeably in this paper. Both refer to outright directional long and short positions, not to an intentionally hedged combination of the two or spread positions.*

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THOMAS N. ROLLINGER
Chief Investment Officer
Managing Partner
Red Rock Capital

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Important Takeaways

1) Commodities have historically been a good portfolio diversifier
2) Long-only commodity indexes are flawed in design and are not an optimal choice for investors
3) Due to the mechanics of futures markets, *"A Long/Short approach is logically consistent with the underlying economics of commodities futures markets." (Morningstar 2009)*

Commodities

A commodity futures market, or exchange, is a marketplace where commodities are contracted for purchase or sale at an agreed upon price for delivery at a specified date. The purchases and sales, which are required to be implemented through a broker who is a member of an organized exchange, are made under the terms and conditions of standardized futures contracts. Unlike the stock market, which has a net positive supply, commodity futures have a net supply of zero.

Most investors might be surprised to learn that a diversified, equally-weighted, regularly rebalanced long-only commodity futures (total return) index has produced annualized returns and volatilities that are similar to U.S. stocks since 1960. However, due to the actual underlying mechanics of the futures markets, a long-only index like this is at least somewhat flawed in design.

This is because hedgers, who utilize the commodity futures markets as a means to transfer price risk to speculators or investors, could be 'producers' or 'consumers' of various commodities and, depending on which one they are, could benefit from the price of that commodity either rising or *falling*. This means that while the net supply of commodity futures contracts may be a "zero sum", there is more to the story, since one group of participants (hedgers) is regularly willing to pay a premium (i.e. initiate and hold losing positions) to limit their risk.

Producers of commodities are able to hedge their price risk by taking short positions in futures contracts on the commodity that they produce. Conversely, consumers can hedge their risks by buying long positions in the futures contracts on the commodities that they consume. Meanwhile, the aforementioned speculators and investors provide valuable liquidity to the futures markets by initiating either long or short positions based on their directional biases.

The Logic of a Long/Short Approach

The following highlighted section is an excerpt from: Putting Momentum Into Commodities (Morningstar 2012)

Sources of Excess Return

A futures strategy generates excess return (i.e., return in excess of the risk-free rate) from two sources:

- Changes in futures prices
- The roll yield—which can be either positive or negative—that results from

replacing an expiring contract with a further out contract in order to avoid physical delivery yet maintain positions in the futures markets.

A complete understanding of these two sources of return requires an analysis of three interrelated markets for each commodity:

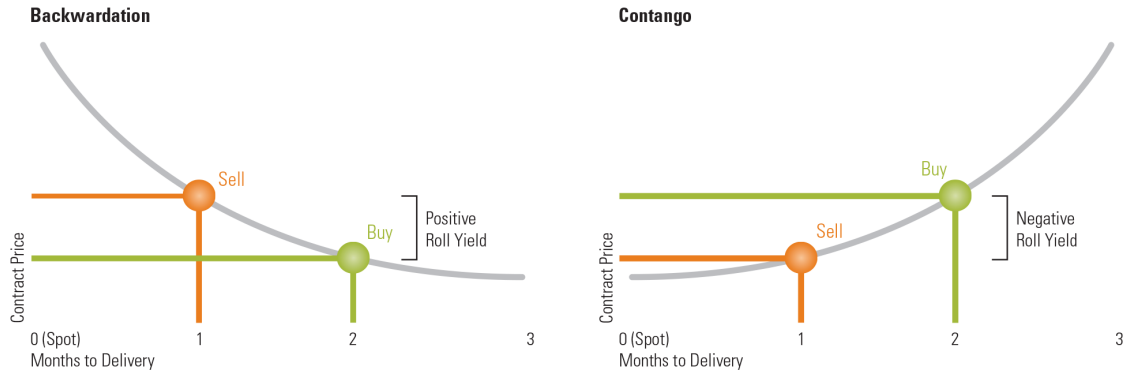
- The spot market—the cash market for the commodity itself.
- The futures market—the market for contracts to deliver the commodity in the future for a price set today.
- The storage market—the market for the service of storing the commodity on behalf of its owner.

What happens in spot markets is important to futures investors because changes in spot prices impact futures prices. The storage market is important because it interacts with the spot market and influences the slope of the futures price curve, which is the source of roll yield. Next we discuss how the spot and futures markets influence price changes and how the storage market impacts the slope of the futures price curve and hence the roll yield.

The Spot Market

Commodity prices fluctuate based on the supply and demand of any commodity. If there is excess supply, then inventories build up until there is downward pressure on prices and producers reduce supplies in response to that price signal. Conversely, in the case of excess demand, inventories will be drawn down until the shortage causes prices to rise and equilibrium is restored. However, it can take a significant time period for inventories to be regulated through price changes due to production and storage situations, leading to sustained trends in commodity spot prices. These trends in commodity spot prices are reflected in futures prices.

Figure 2. **Futures Price Curves**



The Futures Market

Wild fluctuations in spot prices can lead to the risk of operating losses for both commercial commodity producers (e.g., wheat farmers) and consumers (e.g., cereal manufacturers), so they both have incentives to hedge against the risk of future price fluctuations. The commodities futures markets provide one of the most common and effective ways of hedging price risk. When there are more producers than consumers who need to hedge, speculators (including investors in commodity futures strategies) enter the market and provide insurance against falling spot prices by taking the long side. Speculators receive a premium for this insurance in the form of a futures price that is less than the expected futures spot price. Hence, they expect the futures

price to trend upward as it approaches the actual futures spot price over the life of the contract. Conversely, net hedging pressure can be greater on the long side. That is, when there are more consumer hedgers than producer hedgers, speculators provide insurance against rising futures prices by taking the short side, leading to a futures price that is higher than the expected futures spot price. Hence, they expect the futures price to trend downward as it approaches the spot price over the life of the contract.

The Storage Market

Producers of stable commodities use inventories to fill gaps between production and sales. Similarly, consumers use inventories to fill gaps between consumption and purchases. This creates a market for storage. Storage is costly, however. Besides the direct cost of physical storage, there is also an opportunity cost because the money tied up in the commodity could be earning interest. On the margin then, an extra unit is only worth storing if the benefits of storage are at least equal the costs (including the opportunity to earn interest). If this benefit is high enough (so that it makes sense to store the commodity for later use or sale rather than using or selling it now), the futures price will be lower than the spot price, causing time to expiration and the futures price to be inversely related so that the further out the futures contract, the lower the price, thus compensating for the cost of storage. If this is the case, we say that there is "backwardation" in the futures market.

In a backwardated market, owners of a commodity in storage are being more than compensated for the costs of storage, but the compensation is not in monetary payments. Rather, it is in less-tangible benefits such as securing a supply of fuel as insurance against an energy crunch. However, investors who are taking long positions in futures contracts can realize this compensation monetarily by replacing the contracts that they are holding with longer-term ones, thus locking in profits.

This component of excess return realized by investors is referred to as roll yield. As Figure 2 shows, in backwardated markets, roll yields are positive. Likewise, when the marginal benefits of storage are low, the relationship between time to expiration and the futures price is positive, a condition known as contango. In contangoed markets, roll yields are negative because replacing contracts results in locking in a loss.

The benefit of storage tends to be high when inventories are low. For example, when a commodity is scarce, having it in storage will improve commercial consumers' readiness to meet their needs in the near future, leading to backwardation and positive roll yields. Conversely, the benefits of storage are low when inventories are plentiful, leading to contango and negative roll yields. Since inventory conditions in some commodities are slow to adjust due to the time it takes to increase their production, backwardation or contango could persist for a period of time, causing investors to consistently experience positive or negative roll yield over the period. Thus, a passive investor should benefit from a trend-following strategy that incorporates roll yield into its signal.

Roll Yield and Excess Return

Roll yield's effect on excess return can be substantial. In fact, several studies have shown that excess return is primarily attributable to roll yield, not to changes in futures prices. Long-term excess returns on commodities that exhibit mean reversion in price and that tend to trade in contango will generally be negative, and those that tend to trade in backwardation will generally be positive.

The Morningstar Long/Short Commodity Index

Building a Better Strategy

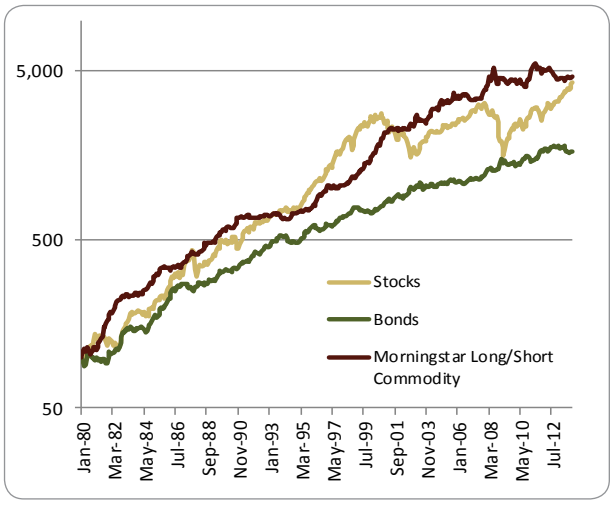
Morningstar believes that a momentum-based long/short approach rather than the long-only approach of the most common commodity indexes can better serve investors by attempting to capture the full excess return from a futures strategy. Additionally, Morningstar says this type of strategy is also likely to prove a better benchmark for the active strategies of professional futures investors. To make this idea operational, Morningstar created the Morningstar® Long/Short Commodity Index, which holds commodity futures both long and short based on momentum signals.

They created a set of single-commodity indexes to serve as constituents for the Long/Short index by calculating a "linked" price series that incorporates both price changes and roll yield. The weight of each individual commodity index in the Long/Short index is the product of two factors: magnitude and the direction of the momentum signal. They initially set the magnitude based on a 12-month average of the dollar-weighted open interest of the commodity. They then cap the top magnitude at 10% and redistribute any overage to the magnitudes for the remaining commodities. The direction depends in part on the type of composite index and in part on the type of commodity in the Long/Short index.

In the Morningstar Long/Short Commodity Index each month, if the linked price exceeds its 12-month daily moving average, the index takes a long position in the subsequent month. Conversely, if the linked price is below its 12-month moving average, the index takes the short side. An exception is made for commodities in the energy sector. If the signal for a commodity in the energy sector is short, the weight of that commodity is moved into cash; that is, the index takes a flat position. Morningstar believes that energy is unique in that its price is extremely sensitive to geopolitical events and not necessarily driven purely by supply-demand imbalances.

Historical Performance & Diversification Benefits of The Morningstar Long/Short Commodity Index

The below chart shows total returns for Stocks (S&P 500), Bonds (10-year Treasuries), and The Morningstar Long/Short Commodity Index for the period 1980 - 2013. Morningstar's index was launched in August of 2007 so the performance thereafter can be considered out-of-sample.



Since many investors consider adding commodities exposure for the potential diversification benefits, it seemed fitting to examine the effects of combining the above three indexes throughout the period of study. The table on the following page summarizes performance statistics for the three individual indexes plus two asset allocation portfolios. One is 60% Stocks / 40% Bonds rebalanced monthly and the other is an equal-weighted combination of all three of the indexes, rebalanced monthly.

PAST PERFORMANCE IS NOT NECESSARILY INDICATIVE OF FUTURE RESULTS. FUTURES TRADING IS SPECULATIVE.

1980 - 2013		Stocks	Bonds	Morningstar L/S Comm.	60% Stocks / 40% Bonds	33% to all; mo. rebal.
Monthly Average		1.03%	0.71%	0.99%	0.90%	0.91%
Monthly St Dev		4.43%	2.55%	3.05%	2.90%	1.97%
Annualized Return		12.35%	8.58%	11.89%	10.84%	10.94%
Annualized St Dev		15.33%	8.84%	10.56%	10.05%	6.81%
Sharpe (0)		0.81	0.97	1.13	1.08	1.61
Sortino (0)		1.25	1.83	2.16	1.88	3.32
Max Drawdown		-50.95%	-14.60%	-22.74%	-29.28%	-16.03%
Gain / Pain		0.24	0.59	0.52	0.37	0.68
Max		13.46%	12.69%	13.16%	9.70%	6.85%
Min		-21.53%	-7.91%	-10.89%	-10.62%	-6.08%
Correlations	Stocks	1.00	0.06	-0.06		
	Bonds	0.06	1.00	-0.02		
Morningstar L/S Commodity		-0.06	-0.02	1.00		

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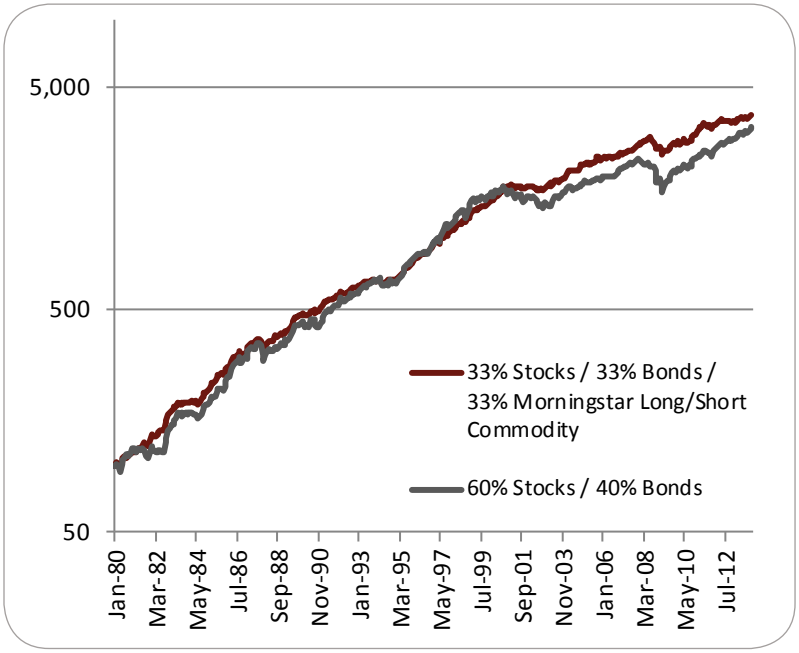
The analysis shows that when long/short commodities were added to portfolios of stocks and bonds, performance metrics improved. Both Sharpe and Sortino ratios went up with the addition of commodities, and the annualized volatility and maximum drawdown stats both went down markedly. Gain / Pain is defined as Annualized Return / Max Drawdown and it nearly doubled. Monthly correlations are attractive: The Morningstar Long/Short Commodity Index shows a slightly negative (not significantly different than zero) correlation to both stocks and bonds.

Finally, the below chart shows the total returns for the two asset allocation portfolios — i.e. the two far-right columns in the above table.



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Criticisms of The Morningstar Long/Short Commodity Index

Overall The Morningstar Long/Short Commodity Index is a good benchmark for the long/short commodity space. Based on its design, it will likely outperform the venerable S&P Goldman Sachs Commodity Index (and other similarly designed long-only indexes) over longer periods of time.

However, two criticisms of its design stem from one particular descriptive sentence from Morningstar about it. In their aforementioned *Putting Momentum Into Commodities* (2012) paper, they state, "Energy is unique in that its price is extremely sensitive to geopolitical events and not necessarily driven purely by supply-demand imbalances."

Criticism #1:
The unwillingness of the index to go short markets in the energy complex. Energy markets are no more sensitive to geopolitical events than corn, wheat, sugar or coffee are sensitive to extreme weather events. In fact, the energy market constituents in the index provided very strong momentum returns to investors who were willing to short them in the latter part of 2008 (when uncorrelated returns were arguably most important). One could likely come up with a plethora of reasons to never go long or short any number of the constituents in the index, however, without highly conclusive quantitative data demonstrating it is harmful to do so, an investor will likely be best served by applying the strategy consistently and across *all* of the markets, without bias.

Criticism #2:
In the above-mentioned Morningstar paper they state that, "Commodity prices fluctuate based on the supply and demand of any commodity" but then later add about energy: "Energy prices are not necessarily driven purely by supply-demand imbalances." More accurately, likely, would be to say that *none* of the commodity futures market prices are *always* solely driven by supply-demand imbalances. There are a *host* of other forces acting on these markets including, but not limited to: geopolitical (which Morningstar even concedes regarding energy), behavioral biases such as "anchoring" and insufficient adjustment, the "disposition effect", herding, fear, greed, "confirmation bias" and "representativeness", extreme weather, disease (livestock), and unforecasted supply chain bottlenecks that can add an insurance premium and/or a convenience yield to certain effected markets.

Red Rock Capital Commodity Long-Short Investment Program

Red Rock Capital is an award-winning commodity investment management firm located in Chicago. In September 2013 the firm launched a Commodity Long-Short investment program for qualified investors such as RIAs and their clients, High Net Worth investors (HNWs), Fund of Funds, and family offices.

Red Rock believes strongly in three primary potential benefits of long/short commodity futures investing:

- Absolute Return
- Diversification
- Inflation-hedge

Absolute Return
From the September 2013 inception through the end of December 2014 the Red Rock Capital Commodity Long-Short Program produced +57.18% in total returns with 18.82% corresponding annualized standard deviation (on a margin / equity or capital usage ratio of approximately 9.92%). Past performance is not necessarily indicative of future performance.

The following table shows total returns for the Program (inception through December 2014) plus a substantial (but not exhaustive) list of

available long/short commodity products and indexes. Included in the table is the largest long/short commodity Exchange Traded Fund (Nuveen's $294 million "CTF"), the largest long/short commodity Mutual Fund (Forward's $61 million "FCMLX"), and The Morningstar Long/Short Commodity Index. Past performance is not necessarily indicative of future performance.

Rank	Name	Type	Total Return
1	Red Rock Capital: Commodity Long-Short	CTA Program	57.18%
2	Millburn Commodity	CTA Program	28.43%
3	LoCorr - LCSIX	Mutual Fund	20.18%
4	S&P Dynamic Commodity Futures	Index	14.44%
5	Forward - FCMLX	Mutual Fund	5.39%
6	Nuveen - CTF	ETF	5.25%
7	S&P Systematic Global Macro Commodity	Index	5.16%
8	HFRI Commodity	Index	1.98%
9	Newedge Commodity Trading	Index	0.96%
10	Emil Van Essen: Long-Short Commodity	CTA Program	0.46%
11	Elements - LSC	ETN	-0.98%
12	Gresham Commodity Long/Short	Index	-1.04%
13	HFRX Commodity	Index	-3.20%
14	Morningstar Commodity Long/Short	Index	-3.86%
15	Compass - CCNAX	Mutual Fund	-6.32%

September 2013 - December 2014. Red Rock Capital Commodity Long-Short is September 16, 2013 - December 2014 and net client composite performance is represented. Management & incentive fees of client accounts vary. See Disclosure Document for more specific details. Millburn Commodity through November 2014. Data sources: Bloomberg, HFR, S&P, Newedge, BarclayHedge. The above product and performance data is not investment advice; it is for informational purposes only. Red Rock Capital is not responsible for modifications to, or accuracy of, the above data.

Diversification
Since its inception in September 2013, the Red Rock Capital Commodity Long-Short Program has produced very low and even negative monthly correlations to the following asset classes and indexes:

- U.S. Stocks -0.32
- World Stocks -0.30
- U.S. Bonds -0.46
- Newedge CTA -0.01
- Newedge Trend CTA -0.04
- Hedge Funds -0.30

Inflation-hedge
Historically, commodities have been positively correlated to inflation and to changes in the rate of inflation.

When inflation was high, commodity futures not only held their value, but did better than average; stocks and bonds did worse in similar conditions.

Conclusion

Now may be a good time to consider the long/short commodity investing space. Both S&P Dow Jones and Societe Generale have recently stated that a possible change in the world economy—from one driven by expansion of supply to one driven by expansion of demand—may be causing an environment that is favorable to commodities investing. Cross-commodity correlations have been falling since late 2011 and links between commodity sectors have weakened. Commodities such as Natural Gas, Crude Oil, Coffee, Gold, Sugar, and Lean Hogs have all made major headlines during the past several months due to how U.S. and world events have affected their prices.

Finally, as the FED continues its "tapering" it is worth noting that commodities have historically tended to perform well in both rising growth economic environments and periods of rising interest rates. If an investor is open-minded about the potential benefits of commodities, investigating the long/short commodity investing space may prove worthwhile.

Important Disclosures

This document is for informational purposes only and it is not a solicitation for investment. Past results are not necessarily indicative of future results. An investment with any Commodity Trading Advisor should only be made after careful study of the advisor's Disclosure Document including the description of the objectives, principal risks, charges, and fees associated with such an investment.

About the Author

Thomas N. Rollinger is the Chief Investment Officer and Managing Partner of Red Rock Capital, LLC, an award-winning commodity investment management firm located in Chicago. An 18-year industry veteran, Mr. Rollinger honed his skills under quantitative hedge fund legend, Edward O. Thorp (*Market Wizards* author Jack Schwager recently called Dr. Thorp the greatest of all time). The strategy Rollinger co-developed & co-managed with Edward Thorp was successful enough to gain mention in two best-selling books (*The Quants* and *Hedge Fund Market Wizards*). Considered a thought leader in the futures industry, Mr. Rollinger published the highly acclaimed 37-page white paper *Revisiting Kat's Managed Futures & Hedge Funds* in 2012 and co-authored both *Sortino Ratio: A Better Measure of Risk* and *A Comparison of CTA Indexes* in 2013. Previously he was a consultant to two top-tier CTAs and he inspired the creation of an industry-leading trading system design software package. Earlier in his career, Mr. Rollinger founded and operated a systematic futures investment fund and worked for original "Turtle" Tom Shanks of Hawksbill Capital Management. After attending college in Michigan, Mr. Rollinger became a U.S. Marine Corps Officer. He served as a 1st Lieutenant in command of a 42-man infantry platoon and was selected to be promoted to the rank of Captain before resigning his commission. He holds a finance degree with a minor in economics and is a Certified Hedge Fund Professional (CHP) Level 1 Charter Holder.

29122 Rancho Viejo Road | Suite 213
San Juan Capistrano, CA 92675
Toll-Free: 877-Data-999 | (877) 328-2999

Email: Sales@globalfinancialdata.com
Website: www.globalfinancialdata.com

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