Debunking the myths of commodities

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Using the case of a single fictitious commodity, "kryptonite," this article walks through the language of commodity futures.

The industry jargon

Commodities are a new asset class for many advisors and investors. In addition to being new, the industry is fraught with "jargon" that ranges from confusing to misleading. The purpose of this article is to help advisors and investors new to this topic, and even those who've been here for a while, understand better the lingo and the reality of commodities investing.

First, let's begin with the reality of how most investors access commodities – it's through collateralized commodities futures. Now, let's tackle the jargon head-on. The standard decomposition of commodities futures return is spot, roll and yield (defined below); and it's common for investors to be misled as to what happens with each.

Spot	The ephemeral return associated with the spot price (or delivered) of commodities.
Roll	The difference between the rolled futures contract return and spot return.
Yield	The return of the collateral and is usually equal to a cash rate, such as 1-month or 3-month T-Bills.

However, these terms represent a decomposition that is only partially reflected in the actual collateralized commodities futures transaction. For example, one may hear about the "roll return" being negative at times and a hindrance to earning the more attractive "spot return." The reality is: no futures investor actually earns spot – in fact, for most investors earning spot is not an option. To earn spot return, the investor must hold physical commodities, and thereby incur storage, insurance and often security costs. (If you think about it, spoiled pork bellies are not only worthless, but probably expensive to unload, while security at Fort Knox does not come without a cost.) The futures investor earns only the return from the futures and is not necessarily "losing money" from roll.

The returns of futures may indeed differ from the returns of spot. This different return pattern may be more or less attractive than a physical return; but it is certainly more liquid and, at the very least, achievable for many investors. We find it most instructive to think of the difference between futures and spot return as either the cost of being liquid in commodities markets, or in the case of a positive difference, a reward for making a market for someone else. The section below is intended to help illustrate these concepts.

THE CASE OF KRYPTONITE: AN EXAMPLE OF SPOT, ROLL AND YIELD

February 15

Let's assume we have an investor, Clark, with $100 to invest with the commodity, kryptonite. The *spot price* of a unit of kryptonite on February 15 is $99. That means that if Clark wants to take delivery on kryptonite, he would pay $99 for it. As you might imagine, kryptonite is very delicate to store (it must be kept in a lead vault), and it requires both security and insurance, which runs $1 per month. Moreover, Clark is not really interested in "owning" kryptonite. He just wants to invest in it, because he understands that another investor, Lex Investments, is driving the price up by purchasing in bulk. Ultimately, Clark determines that buying a futures contract is the way to go.

The price for the kryptonite 1-month *futures contract* is $100. Note that the 1-month futures contract is "more expensive" than the spot contract, which means that kryptonite is in *contango*. (If the 1-month futures contract price were less than spot, we would define this market as being in *backwardation*.)

In purchasing a futures contract, Clark is obligated by the futures exchange to post 10% on margin, which in this case is $10. This margin will be invested in Treasury Bills (T-Bills). Note that Clark still has $90 after posting this margin. To establish an unlevered investment, Clark will fully collateralize his futures purchase by posting the additional $90 (and 90%) and invest that collateral, again in T-Bills. With the purchase of the futures contract, Clark will earn a futures return on the notional amount of the contract, $100, and a T-Bill return on the same $100.

March 14

Now let's fast-forward to March 14, and the futures contract is close to expiration. At this time, the value of Clark's futures contract is $107.25, and the value of his collateral is $100.05. The market value of spot kryptonite is $107. (Note that they are close to convergence.) However, the spot price is largely extraneous information; Clark never engaged in the spot market, so in reality the price and price movements of spot kryptonite are largely irrelevant to him (we will come back to this point later). More importantly, Clark earned 7.25% from the kryptonite futures and 0.05% from the collateral, resulting in a total return of 7.30%.

So what about that spot, roll and yield? Please refer to the exhibit below as we work through this.

Exhibit: Numerical example of Collateralized Commodity Futures Return

	Feb 15 Value	March 14 Value	Return
Spot	**$99.00**	**$107.00**	**8.08%**
1-month futures contract	**100.00**	**107.25**	**7.25%**
T-Bills	100.00	100.05	0.05%
Roll return			-0.83%
Spot with costs	99.00	106.00	7.07%

- Let's start with **yield**, because that is easy. Yield is the return on the T-Bills and equals 0.05% on March 14.
- Next, let's tackle **spot**. Spot is the return of spot kryptonite. On March 14, spot kryptonite is $107, providing a return of 8.08%.
- Finally, let's explain **roll**. Roll is equal to the futures return, 7.25%, less the spot return, 8.08%, resulting in a -0.83% roll return. But remember, Clark purchased commodity futures and T-Bills. He did not, at any time, invest in spot. Now let's review what happened here and debunk some myths.

Debunking Myth #1: Negative Roll ≠ Losing Money

The futures contract earned 7.25%. The spot earned 8.08%. In the industry jargon, this means that the roll was a negative 0.83%. **Clark earned +7.25% from the futures contract.** Therefore, the jargon of the industry suggesting that Clark "lost money" on the roll has led us to a false conclusion.

Suppose Clark had purchased physical kryptonite at the spot price. He would have incurred storage, security and insurance costs, and his return would have been 7.07% (less than either the ephemeral 8.08% spot return *or* the realized futures return of 7.25%).

Debunking Myth #2: Contango ≠ Losing Money

When Clark purchased his kryptonite futures, the market was in *contango* (e.g., the 1-month futures contract was "more expensive" than the spot contract). **Yet, Clark made a positive return on his futures purchase in a *contango* market.**

This demonstrates that the relative prices of spot and futures are not directly relevant to the investor. The only relevant prices are those of the futures price *purchase* and the futures price *sale*. These two prices are what define the return for the investor.

THE MORAL OF THE STORY

The current jargon for collateralized commodity futures is that the investor earns spot, roll and yield. Yet, the only part of this trio that the investor truly earns is *yield*. Spot is unattainable, and roll is an artificial construction. The true return for the investor in collateralized commodity futures is the futures return and yield.

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