

THE BLOOMBERG COMMODITY INDEX

A Primer on Index Calculation and Performance

A common question about the Bloomberg Commodity Index Family involves the index calculation and performance. Users might ask, for example: “Why did the Bloomberg WTI Crude Oil Subindex close down yesterday, when the *Wall Street Journal* reported that the price of oil went up?” The answer lies in understanding 1) that the indexes are constructed of futures contracts and 2) how the index methodology accounts for the rolling of these contracts. The following general introduction to the index methodology provides information on these topics. The complete rules and definitions for calculating the Bloomberg Commodity Index and family are provided in the Bloomberg Commodity Index Methodology, available at bloombergindexes.com/commodities.

INDEX COMPOSITION

The Bloomberg Commodity Indexes are composed of exchange-traded commodity futures contracts. As a result, these indexes are investable benchmarks. Futures contracts are never taken to delivery, and are instead rolled forward per the index methodology.

“ROLLING” DEFINED

Commodity futures contracts normally specify a certain date for delivery of the underlying physical commodity. As this date approaches, investors may replace the contracts having near-term expirations with contracts having more distant expirations to avoid the risk of physical delivery. For example, a light sweet crude oil futures contract purchased and held in October may specify a January expiration. As the expiration date approaches, the contract expiring in January may be replaced by a contract for delivery in March. This process is known as “rolling.”

To reflect the rolling process, the Bloomberg Commodity Index methodology specifies that as the futures contracts within the indexes approach expiration, they be replaced by similar contracts with later expirations.

INDEX PERFORMANCE VS. NEAR-TERM CONTRACT PERFORMANCE

Because of this rolling process, the Bloomberg Commodity Indexes do not always track the price of the nearest-term futures contract. The Bloomberg WTI Crude Oil Subindex, for example, typically tracks the nearest-term futures contract only part of the time—at other times it tracks a longer-term futures contract.

Furthermore, two factors primarily determine the index returns:

- » The timing of the index roll as defined by the index methodology
- » The relative price movements of the incoming contract and the outgoing contract

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FACTOR #1: TIMING OF THE INDEX ROLL

The futures that underlie the indexes within the Bloomberg Commodity Index family roll approximately every other month. Each commodity has a schedule that defines what contracts are held at any time. For example, while Nymex Light Sweet Crude Oil futures have monthly expirations, the Bloomberg WTI Crude Oil Subindex rolls every other month—to the contract that is two months longer in maturity. As a result, the Bloomberg WTI Crude Oil Subindex will reflect 100% of the returns of the “nearby” contract only part of the time and, at other times, will include returns for a longer-term future.

Rolls are implemented over a 5-day period—increasing the weighting of the new contract from 0% to 20%, 40%, 60%, 80% and finally 100%. The BCOM index is calculated as if the weighting adjustments occur at the close of each day, with the adjusted weights used for the next day’s calculations.

BLOOMBERG COMMODITY INDEX CONTRACT SCHEDULE

The following table outlines the contract schedule for the Bloomberg Commodity Index. The contracts under the current month are referred to as the “lead future.” The contracts under the next month are referred to as the “next future.” If the lead future and next future are different, then the index calculations are based on weightings that shift from the lead future to the next future at the closing prices on the fifth through ninth business days of each month.^{1,2}

¹This contract schedule and roll methodology reflect the rules of the Bloomberg Commodity Index and its subindexes as of July 2014. This schedule and other index rules are subject to change over time.

²For the “Forward Month” versions of the Bloomberg Commodity Index, the contracts that would be included in the Bloomberg Commodity Index in one month’s, two months’ and three months’ time are included in the current month for the BCOM index One Month Forward, BCOM index Two Month Forward and BCOM index Three Month Forward Index, respectively. For example, the “Lead Future” for WTI crude oil in March would be the May contract for the standard Bloomberg Commodity Index, the May contract for the BCOM index One Month Forward, the July contract for the BCOM index Two Month Forward and the July contract for the BCOM index Three Month Forward.

COMMODITY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	F*	G	H	J	K	M	N	Q	U	V	X	Z
Aluminum	MAR	MAR	MAY	MAY	JUL	JUL	SEP	SEP	NOV	NOV	JAN	JAN
Cocoa	MAR	MAR	MAY	MAY	JUL	JUL	SEP	SEP	DEC	DEC	DEC	MAR
Coffee	MAR	MAR	MAY	MAY	JUL	JUL	SEP	SEP	DEC	DEC	DEC	MAR
Copper	MAR	MAR	MAY	MAY	JUL	JUL	SEP	SEP	DEC	DEC	DEC	MAR
Corn	MAR	MAR	MAY	MAY	JUL	JUL	SEP	SEP	DEC	DEC	DEC	MAR
Cotton	MAR	MAR	MAY	MAY	JUL	JUL	DEC	DEC	DEC	DEC	DEC	MAR
Crude (Brent)	MAR	MAY	MAY	JUL	JUL	SEP	SEP	NOV	NOV	JAN	JAN	MAR
Crude (WTI)	MAR	MAR	MAY	MAY	JUL	JUL	SEP	SEP	NOV	NOV	JAN	JAN
Feeder Cattle	MAR	MAR	MAY	MAY	AUG	AUG	AUG	OCT	OCT	JAN	JAN	JAN
Gas Oil	MAR	MAR	MAY	MAY	JUL	JUL	SEP	SEP	NOV	NOV	JAN	JAN
Gold	FEB	APR	APR	JUN	JUN	AUG	AUG	DEC	DEC	DEC	DEC	FEB
Heating Oil	MAR	MAR	MAY	MAY	JUL	JUL	SEP	SEP	NOV	NOV	JAN	JAN
Lead	MAR	MAR	MAY	MAY	JUL	JUL	SEP	SEP	NOV	NOV	JAN	JAN
Lean Hogs	FEB	APR	APR	JUN	JUN	JUL	AUG	OCT	OCT	DEC	DEC	FEB
Live Cattle	FEB	APR	APR	JUN	JUN	AUG	AUG	OCT	OCT	DEC	DEC	FEB
Natural Gas (NG)	MAR	MAR	MAY	MAY	JUL	JUL	SEP	SEP	NOV	NOV	JAN	JAN
Nickel	MAR	MAR	MAY	MAY	JUL	JUL	SEP	SEP	NOV	NOV	JAN	JAN
Orange Juice	MAR	MAR	MAY	MAY	JUL	JUL	SEP	SEP	NOV	NOV	JAN	JAN
Platinum	APR	APR	APR	JUL	JUL	JUL	OCT	OCT	OCT	JAN	JAN	JAN
Silver	MAR	MAR	MAY	MAY	JUL	JUL	SEP	SEP	DEC	DEC	DEC	MAR
Soybean Meal	MAR	MAR	MAY	MAY	JUL	JUL	DEC	DEC	DEC	DEC	JAN	JAN
Soybean Oil	MAR	MAR	MAY	MAY	JUL	JUL	DEC	DEC	DEC	DEC	JAN	JAN
Soybeans	MAR	MAR	MAY	MAY	JUL	JUL	NOV	NOV	NOV	NOV	JAN	JAN
Sugar	MAR	MAR	MAY	MAY	JUL	JUL	OCT	OCT	OCT	MAR	MAR	MAR
Tin	MAR	MAR	MAY	MAY	JUL	JUL	SEP	SEP	NOV	NOV	JAN	JAN
Unleaded Gas	MAR	MAR	MAY	MAY	JUL	JUL	SEP	SEP	NOV	NOV	JAN	JAN
Wheat	MAR	MAR	MAY	MAY	JUL	JUL	SEP	SEP	DEC	DEC	DEC	MAR
Zinc	MAR	MAR	MAY	MAY	JUL	JUL	SEP	SEP	NOV	NOV	JAN	JAN

*Letters represent months and are a standard convention in futures contracts.

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EXAMPLE OF BLOOMBERG WTI CRUDE OIL SUBINDEX ROLL PERIOD, DECEMBER 2013

BUSINESS DAY OF THE MONTH	DATE	CONTRACTS REPRESENTING THE BLOOMBERG WTI CRUDE OIL SUBINDEX
5th	Dec. 5, 2013	100% Jan '14
6th	Dec. 8, 2013	80% Jan '14 + 20% Mar '14
7th	Dec. 9, 2013	60% Jan '14 + 40% Mar '14
8th	Dec. 10, 2013	40% Jan '14 + 60% Mar '14
9th	Dec. 11, 2013	20% Jan '14 + 80% Mar '14
10th	Dec. 12, 2013	100% Mar '14

The daily settlement value of the index is calculated at the close of the trading day. During a roll period, once the daily value of the index has been calculated, the index is reconstituted to reflect the new contract weighting on the next business day. Additional rules regarding annual rebalancing and market disruptions are contained in the Bloomberg Commodity Index Methodology.

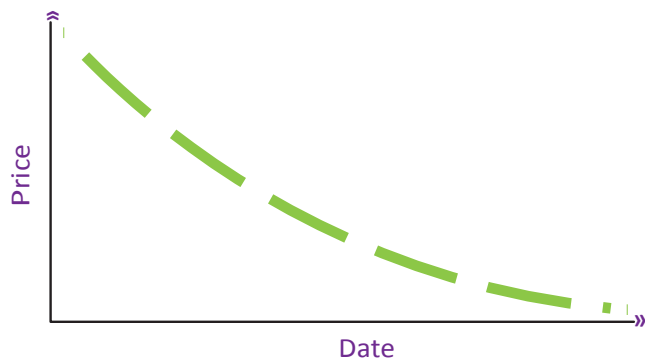
FACTOR #2: RELATIVE PRICES OF CONTRACTS: BACKWARDATION VS. CONTANGO

Backwardation

When the prices for exchange-traded futures contracts are lower in the distant delivery months than in the nearer delivery months, the market is said to be in "backwardation." For example, the sale of a January contract would take place at a price that is higher than the purchase price of a March contract.

Holding other factors constant, backwardation generally has a positive impact on index values, as the lower longer-term future prices move higher over time in relation to shorter-term prices. This potential convergence over time is often referred to as a positive "roll yield." For example, if the longer-term price was \$40 and the shorter-term price remained at \$50, then one would expect, if other factors remained constant, to earn \$10, which would theoretically be realized when the contract purchased at \$40 was later sold at \$50.

EXAMPLE OF BACKWARDATION



Contango

When the prices for exchange-traded futures contracts are higher in the distant delivery months than in the nearer delivery months, the market is said to be in "contango." For example, the sale of a January contract would take place at a price that is lower than the purchase price of a March contract.

Holding other factors constant, contango generally has a negative impact on index values, as the higher longer-term future prices move lower over time in relation to shorter-term prices. This potential convergence over time is often referred to as a negative "roll yield." For example, if the longer-term price was \$50 and the shorter-term price remained at \$40, then one would expect, if other factors remained constant, to lose \$10, which would theoretically be realized when the contract purchased at \$50 was later sold at \$40.

EXAMPLE OF CONTANGO

