Horizons Crude Oil Rolling Futures Index (CMDYCLER)

Updated and Effective: January 20, 2021

Overview

The Horizons Crude Oil Rolling Futures Index (the "Index") is designed to provide accurate returns that mirror the holding of the underlying commodity and in so doing, represent a liquid benchmark for investors that desire exposure to that underlying commodity.

The Index is calculated based on daily returns of a Daily Contract Settlement Price of the WTI Crude Oil for the Designated Relevant Contracts.

The Index is a proprietary index owned and operated by Horizons ETFs Management (Canada) Inc. ("Horizons ETFs").

Horizons ETFs has the discretion to change the Primary Contract, Secondary Contract and Roll Methodology of the Index in response to the then market conditions, while seeking to maintain exposure to as close to the Prompt Contract. Please refer to the defined contract terms below.

Bloomberg Code

The following index will be tracked daily and reported on Bloomberg no later than 6:00 PM Eastern Time on each Business Day.

Index Code (Bloomberg)	Underlying Commodity Contract
CMDYCLER<Index>	WTI Crude Oil futures ("CL")

Prompt, Primary, and Secondary Contracts

The Horizons Crude Oil Rolling Futures Index, Bloomberg Ticker: CMDYCLER, tracks the WTI Crude Oil futures ("CL"). The Prompt Contract refers to the CL futures contract that is closest to expiration and is usually for delivery in the current calendar month. For the purposes of calculating CMDYCLER, the Secondary Contract is the contract that will be partly used the day after the Prompt Contract expires each calendar month. The Index rolls into the Secondary Contract as described in the section "Index Contract Roll Period and Weights" below. For more detail, please refer to the Contract Roll Period and Weights Section below.

Month Begin Date	Prompt Contract	Primary Contract	Secondary Contract
January	G	H	J
February	H	J	K
March	J	K	M
April	K	M	N
May	M	N	Q
June	N	Q	U
July	Q	U	V
August	U	V	X
September	V	X	Z
October	X	Z	F
November	Z	F	G
December	F	G	H

CL Month Codes

Month	Month Code	Month	Month Code
January	F	July	N
February	G	August	Q
March	H	September	U
April	J	October	V
May	K	November	X
June	M	December	Z

Index Contract Roll Period and Weights

During the Roll Period the Primary Contract is rolled over a four day period into the Secondary Contract immediately following the Prompt Contract expiry. The Roll Period starts on the day after the last trading day of the Prompt Contract expiry of each month and the Commodity Roll Weight of the Primary Contract is decreased by 25% after the Close of Business of each Trading Day of the Roll Period starting at 100% while the Commodity Roll Weight of the Secondary Contract is increased by 25% after the Close of Business of each Trading Day of the Roll Period starting at 0%. After the end of the roll period the Secondary Contract becomes the active contract for the Index.

If the Prompt Contract expires on a non-Business Day, then the Primary Contract will roll to the Secondary Contract on the next Business Day following the date. For the purposes of the Index, a Business Day is defined as any day in which all of the following are true: (i) the CL futures contracts are trading and there is a published Contract Settlement Price for the Prompt and Primary Contracts; (ii) the Toronto Stock Exchange ("TSX") is open and publishes closing prices; and (iii) a day where both CAD and USD can settle. The determination of the appropriate Prompt and Primary and Secondary Contract is based on the day of the month and is based on the rules below:

Trading Day(s)	Primary Contract	Secondary Contract
Prompt Contract Expiry	**100%**	**0%**
Prompt Expiry +1	**75%**	**25%**
Prompt Expiry + 2	**50%**	**50%**
Prompt Expiry + 3	**25%**	**75%**
Prompt Expiry + 4	**0%**	**100%**

Market Disruption Events

From time to time, market disruption events may occur that will result in the postponement of the Index and/or the adjustment of the roll period. A Market Disruption Day will be deemed to have occurred if any of the following events occur:

i. The Daily Contract Settlement Price is not published by 4:00 PM, Eastern Time;
ii. The Daily Contract Settlement Price is erroneous, in the reasonable judgment of Horizons ETFs, and such error is not corrected by 4:00pm, Eastern Time;
iii. The Daily Contract Settlement Price is a Limit price; or
iv. Trading in the relevant contract is disrupted during the trading day and does not trade for at least 30 minutes prior to the scheduled closing time (or rescheduled closing time if the contract closing time is rescheduled).

If any of these events occur on a non-roll date, the Index will not be posted for that Business Day.

If any of these events occur on a roll date, the Index will not be posted for that Business Day AND the roll that was to take place on the Market Disruption Day will take place on the next non-Market Disruption Business Day. For instance, if the Market Disruption Day occurred on expiry of the Prompt Contract, the roll that was to take place that day will take place on the next non-Market Disruption Business Day.

Index Calculation

The following explains, in detail, how the CMDYCLER Index is to be calculated on a daily basis.

t	The index of time for the life of the transaction, from the first day (0) to the last day (T). $t \in I \mid t \in [0, T]$
a	The index for "throughout trading day" (0) and "end of trading day" (1). $a \in I \mid a \in [0, 1]$
n	The index for the commodity contract, where the "Primary contract" (0) and the "Secondary contract" (1) are the only ones contemplated. $n \in I \mid n \in [0, 1]$
m	The number of days that the futures contracts are rolled from the front month to the next month. The number of days contemplated for this index is 4 days.
$q_n(t,a)$	The percentage of the commodity index explained by contract "n" on day "t" at timestep "a". The sum of the percentages for all "n" must equal one. Before the roll period, q0(t,1) is equal to one and q1(t,1) is equal to zero. During the roll period, q0(t,1) is equal to q0(t,0) less 1/m and q1(t,1) is equal to q1(t,0) plus 1/m for each of the "m" days. For the remainder of the month after the roll period, q0(t,1) is equal to zero and q1(t,1) is equal to one.$q_n(t,a)$. $\in R \mid q_n(t,a) \in [0, 1]$
$v_n(t,a)$	The quantity of futures that would be invested in $C_n(t)$ if it were solely invested in that contract. The following is true: $v_n(0,1) \in R \mid U(0,0) / C_n(0)$; $t = 0$ $v_n(t,0) \in R \mid v_n(t,0) = v_n(t-1,1)$; $t > 0$ $v_n(t,1) \in R \mid v_n(t,1) = U(t,1) / C_n(t)$; $t > 0$
$C_n(t)$	The closing value of the listed commodity contract "n" on day "t". Please note that the actual contracts will change as they get rolled. This is a market-observed factor.
$U(t,a)$	The value of the commodity index on day "t" at time step "a''. Please note that the value of the index is unchanged for a given day "t" for either of the two time steps to observe the conservation of value as measured using closing prices of the listed commodity contracts. The index value is the weighted summation of the "front contract" and the "next contract".

The Index

The formula to determine the Index is as follows:

$U(t,a)= q_0(t,a)\times v_0(t,a)\times C_0(t) + q_1(t,a)\times v_1(t,a)\times C_1(t)$

The initial condition of the index is as follows:

$U(0,0)=100$

The rebalancing equations of the index are as follows:

$U(t,0)= q_0(t,0)\times v_0(t,0)\times C_0(t) + q_1(t,0)\times v_1(t,0)\times C_1(t)$
$U(t,1) = q_0(t,1) \times v_0(t,1) \times C_0(t) + q_1(t,1) \times v_1(t,1) \times C_1(t)$
$U(t,1) =U(t,0)$

Changes to the Index

From time to time, and as market forces dictate, it may become necessary for Horizons ETFs and/or the Calculation Agent to change this index methodology (the "Index Methodology") as explained in this document. Changes may include, but will not be limited to, roll period adjustments, market disruption events, and Designated Relevant Contracts. Horizons ETFs will attempt to give as much notice as possible of any changes that may occur.

Neither this Index Methodology nor any set of procedures are capable of anticipating all possible circumstances and events that may occur with respect to the Index and the methodology for its composition, weighting and calculation. Accordingly, a number of subjective judgments must be made in connection with the operation of the Index that cannot be adequately reflected in this Index Methodology. Further, modifications to the methodology to calculate the Index, and consequently the Index Methodology, may be necessary from time to time. The Calculation Agent reserves the right to make such changes or refinements to the methodology set forth in this Index Methodology as it believes necessary in order to preserve and enhance the utility of the Index as a benchmark for commodity market performance. The Calculation Agent also reserves the right to take such action with respect to the Index as it deems necessary or appropriate, in order to address market emergencies or other extraordinary market events or conditions. Wherever practicable, any such changes or actions will be publicly announced prior to their effective date.

Disclaimer

The data and information presented of the Index (the "Information") reflects the methodology for determining the composition and calculation of the Index. This Index Methodology, the Information and the Index are compiled and published by Horizons ETFs.

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