

RBC Commodity Index

Backwardation Measure

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Strictly Private and Confidential

This document contains a description of the RBC Commodity Index “Backwardation Measure” methodology, which we refer to as the “Method” herein.



RBC Capital Markets

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Description of the Methodology

The purpose of the Method is to quantify the degree of backwardation of a commodity price curve. On each Backwardation Measure Calculation Day, the Method calculates the Backwardation Measure defined in this document.¹

Section 1. Terms and Notations

Term/Notation	Definition
Index Business Day	Any weekday that is not an NYSE holiday.
$P(t, T)$	Denotes the Settlement Price of the Commodity with Contract Month T on Index Business day t . If there is a Market Disruption Event for the Commodity, the most recently available Settlement Price will be used.
$CM[T]$	Denotes the Calendar Month of date T . For examples, $CM[12/17/2015] = 12/2015$.
$t_0(T)$	Denotes the Backwardation Measure Calculation Day associated with a specific commodity in a specific Index. Note that $t_0(T) < T$. Please refer to Section 3 of “Index Information” for the Backwardation Measure Calculation Day used in a specific index.
$BM_{t_0(T)}$	Denotes the Backwardation Measure calculated on the Backwardation Measure Calculation Day $t_0(T)$. The Backwardation Measure is a measure of the degree of backwardation exhibited along a segment of the commodity forward curve. It is defined using the prices of a specified Near Month Contract and Far Month Contract. Please refer Section 3 below for the calculation of Backwardation Measure.
$F_{Near}(M)$	Denotes the Near Month Contract of the Commodity in the calendar month M . Please refer to Section 3 of “Index Information” for the Near Month Contract of a specific commodity involved in a specific Index.
$F_{Far}(M)$	Denotes the Far Month Contract of the Commodity in the calendar month M . This contract refers: <ul style="list-style-type: none"> • The contract with expiry 12 months later than the Near Month Contract if it exists, or • The contract with expiry closest to 12 months after the expiry of the Near Month Contract, within 12 months of the expiry of the Near Month Contract. Please refer to Section 3 of “Index Information” for any exceptions in the selection of the Backwardation Measure Far Month Contract.
$Month(T_j, T_k)$	Denotes the number of the calendar months between the two Contract Months T_j and T_k .

¹ This document is issued as an addendum to each of the “Index Methodology – RBC Basket of Commodity Indices Excess Return Index” dated May 8, 2017, and the “RBC Index Methodology – Excess Return and Total Return” dated May 8, 2017 (collectively, the “Index Methodology”). For greater certainty, the Disclaimer on page A of the Index Methodology applies equally to this document.

Section 2. Calculation of Backwardation Measure

On each Backwardation Measure Calculation Day $t_0(T)$, the Method calculate the Backwardation Measure as follows:

$$BM_{t_0(T)} = \frac{1 - \frac{P(t_0(T), F_{Far}(CM[T]))}{P(t_0(T), F_{Near}(CM[T]))}}{Month(F_{Near}(CM[T]), F_{Far}(CM[T]))}.$$

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