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FTSE/CoreCommodity CRB[®] Single Commodity Indices

Methodology



**FTSE
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1. Introduction

1.1 FTSE/CoreCommodity CRB® Single Commodity Indices

This Methodology contains the rules for calculating the FTSE/CoreCommodity CRB Single Commodity Indices. This Methodology and all information contained herein is the exclusive property of FTSE Russell, an LSEG business or London Stock Exchange Group plc. or CoreCommodity Indexes, LLC (“CoreCommodity”) or its or their affiliates as applicable. FTSE Russell and CoreCommodity shall have no liability to any person or entity for the accuracy or completeness of the information contained herein. The Indices are administered by Refinitiv Benchmark Services (UK) Limited (“RBSL”).

FTSE/CoreCommodity CRB Single Commodity Indices are calculated for the following types of indices:

- an excess return index based on the front futures expiration month for each single commodity,
- an excess return index based on the futures expiration months for each commodity that are 3 months behind the front expiration months (the “3 Month Forward” excess return index),
- a total return index derived from each excess return index and based on 3-Month US Treasury Bill,
- a total return index derived from each excess return index and based on US Fed published overnight rate,
- a total return index derived from the 3 Month Forward excess return index and based on 3-Month US Treasury Bill, and
- a total return index derived from the 3 Month Forward excess return index and based on US Fed published overnight rate.

1.2 Intended Readership

This document supports data use by FTSE Russell Indices clients. Clients receive the data as part of their desktop license or may be licensed to use FTSE Russell Indices in a separate licensing agreement.

1.3 Document Publication

This document is available on the FTSE Russell website and on request.

2. Calculation Methodology

2.1 Single Commodity Excess Return Indices

Individual commodity excess returns are calculated using front and immediate back expiration months for the relevant futures contract.

Each excess return index on business day t , SER_t , is calculated with reference to the previous business day $t - 1$ as

$$SER_t = SER_{t-1} * \frac{CSR_t}{CSR_{t-1}} \quad (1)$$

where CSR is the price of the front expiration month of the relevant futures contract or, if day t falls within the four day roll period then CSR shall be the weighted average price of the front and immediate back expiration months (Please check 2.4; Page 6).

If day t falls outside the roll period, CSR is calculated on day t as

$$CSR_t = FP_t \quad (2)$$

Similarly, CSR is calculated on day $t - 1$ as

$$CSR_{t-1} = FP_{t-1} \quad (3)$$

where FP_t is the futures price of relevant futures contract on day t .

The roll from the front expiration month to the immediate back expiration month of the relevant futures contract takes place over the first four business day period of each calendar month. Exposure is rolled in equal amounts of 25% on each day during the roll period such that by the fourth day of the roll period, 100% of the weight is in the immediate back expiration month.

If day t falls during a roll period, CSR is calculated on day t as

$$CSR_t = \sum_{i=1}^2 DW_t^i * FP_t^i \quad (4)$$

where the summation is over the front expiration month of the relevant futures contract ($i = 1$) and the immediate back month ($i = 2$). DW_t^i is the daily roll weight for expiration month ' i ' on day t and FP_t^i is the futures price of expiration month ' i ' on day t . Similarly, CSR is calculated on day $t - 1$ as

$$CSR_{t-1} = \sum_{i=1}^2 DW_{t-1}^i * FP_{t-1}^i \quad (5)$$

where FP_{t-1}^i is the futures settlement price of expiration month ' i ' on day $t - 1$

Once the four day roll period is complete, the immediate back month during the roll becomes the relevant futures contract and equations 2 and 3 are then used until the start of the next roll period.

All values throughout this Methodology are rounded to six decimal places.

2.2 Single Commodity Total Return Indices based on 3 Month US Treasury Bill

Single Total return indices are calculated for each Commodity index and 3 Month Forward index. Single total return index, STR_t , replicates the total return of a portfolio of futures and a cash investment. It is calculated using the futures daily returns plus the daily interest from the cash investment as follows -

$$STR_t = STR_{t-1} \times \left(\frac{SER_t}{SER_{t-1}} + TBR_t \right) \times (1 + TBR_t)^{d-1} \quad (6)$$

where d is the number of calendar days between the current and previous business days, and TBR_t is the daily interest from the cash investment calculated as

$$TBR_t = \left(\frac{1}{1 - \frac{91}{360} \times TB_{t-1}^{3mo}} \right)^{\frac{1}{91}} - 1 \quad (7)$$

Single Total Return Index, STR_t , is calculated in USD and TB_{t-1}^{3mo} is the 3 month US Treasury Bill high rate for the previous day.

2.3 Single Commodity Total Return (Overnight Rate) Indices based on US Fed published Overnight Rate

Additional Total return indices are calculated for Single Commodity Segment Main and 3 Month Forward index. Single total return (Overnight Rate) index, STR_{St} , replicates the total return of a portfolio of futures and a cash investment. It is calculated using the futures daily returns plus the daily interest from the cash investment as follows -

$$STR_{St} = STR_{St-1} \cdot \left[\frac{SER_t}{SER_{t-1}} \cdot \left(1 + (d-1) \cdot \frac{SOFR_{t-1}}{360} \right) + \left(\frac{SOFR_{t-1}}{360} \right) \right] \quad (8)$$

where d is the number of calendar days between the current and previous business days, and $SOFR_{t-1}$ is overnight rate published by US Fed on next morning.

Single Total Return (Overnight Rate) index version published on beginning of January 2020 with index calculation start date from 2nd January 2020.

2.4 Futures Contract Expiration Months by Calculation Month

The calendar below shows the relevant futures contract expiration months used during each calendar month prior to the roll over period.

Commodity	Exchange	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WTI Crude Oil	NYMEX	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
Heating Oil	NYMEX	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
Unleaded Gasoline	NYMEX	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
Natural Gas	NYMEX	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan
Gold	COMEX	Feb	Apr	Apr	Jun	Jun	Aug	Aug	Dec	Dec	Dec	Dec	Feb
Copper	COMEX	Mar	Mar	May	May	Jul	Jul	Sep	Sep	Dec	Dec	Dec	Mar
Silver	COMEX	Mar	Mar	May	May	Jul	Jul	Sep	Sep	Dec	Dec	Dec	Mar

The 3 Month Forward index expiration months used during each calendar month are as follows.

Commodity	Exchange	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WTI Crude Oil	NYMEX	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Heating Oil	NYMEX	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Unleaded Gasoline	NYMEX	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Natural Gas	NYMEX	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Gold	COMEX	Jun	Jun	Aug	Aug	Dec	Dec	Dec	Dec	Feb	Feb	Apr	Apr
Copper	COMEX	May	Jul	Jul	Sep	Sep	Dec	Dec	Dec	Mar	Mar	Mar	May
Silver	COMEX	May	Jul	Jul	Sep	Sep	Dec	Dec	Dec	Mar	Mar	Mar	May

3. Data Sources and Index Publication

3.1 Data Source

All commodity prices used in the FTSE/CoreCommodity CRB Single Commodity Indices are taken from commodity futures contract prices published by the CME Group (COMEX, NYMEX). CME Group of exchanges (COMEX, NYMEX, CBOT and CME) are regulated global market place and a well established platform for commodity futures price discovery. 3-month US Treasury bill rates are based on previous day high value. US Fed published overnight rates are based upon previous day's rate.

3.2 Index Dissemination

Each of the FTSE/CoreCommodity CRB Single Commodity Indices is published at the close of business day on which US futures market NYMEX is open for business.

3.3 Index Publication

The FTSE/CoreCommodity CRB Single Commodity Indices are published on LSEG Workspace with the following RICs:

FTSE/CoreCommodity CRB® Gold Excess Return Index	.CRBGC
FTSE/CoreCommodity CRB® Gold Total Return Index	.CRBGCT
FTSE/CoreCommodity CRB® Gold Total Return (Overnight Rate) Index	.CRBGCTS
FTSE/CoreCommodity CRB® Gold 3-Month Forward Excess Return Index	.CRBGC3
FTSE/CoreCommodity CRB® Gold 3-Month Forward Total Return Index	.CRBGCT3
FTSE/CoreCommodity CRB® Gold 3-Month Forward Total Return (Overnight Rate) Index	.CRBGCS3
FTSE/CoreCommodity CRB® Silver Excess Return Index	.CRBSI
FTSE/CoreCommodity CRB® Silver Total Return Index	.CRBSIT
FTSE/CoreCommodity CRB® Silver Total Return (Overnight Rate) Index	.CRBSITS
FTSE/CoreCommodity CRB® Silver 3-Month Forward Excess Return Index	.CRBSI3
FTSE/CoreCommodity CRB® Silver 3-Month Forward Total Return Index	.CRBSIT3
FTSE/CoreCommodity CRB® Silver 3-Month Forward Total Return (Overnight Rate) Index	.CRBSIS3
FTSE/CoreCommodity CRB® Copper Excess Return Index	.CRBHG
FTSE/CoreCommodity CRB® Copper Total Return Index	.CRBHGT
FTSE/CoreCommodity CRB® Copper Total Return (Overnight Rate) Index	.CRBHGTS
FTSE/CoreCommodity CRB® Copper 3-Month Forward Excess Return Index	.CRBHG3
FTSE/CoreCommodity CRB® Copper 3-Month Forward Total Return Index	.CRBHGT3
FTSE/CoreCommodity CRB® Copper 3-Month Forward Total Return (Overnight Rate) Index	.CRBHGS3

FTSE/CoreCommodity CRB® Crude Oil Excess Return Index	.CRBCL
FTSE/CoreCommodity CRB® Crude Oil Total Return Index	.CRBCLT
FTSE/CoreCommodity CRB® Crude Oil Total Return (Overnight Rate) Index	.CRBCLTS
FTSE/CoreCommodity CRB® Crude Oil 3-Month Forward Excess Return Index	.CRBCL3
FTSE/CoreCommodity CRB® Crude Oil 3-Month Forward Total Return Index	.CRBCLT3
FTSE/CoreCommodity CRB® Crude Oil 3-Month Forward Total Return (Overnight Rate) Index	.CRBCLTS3
FTSE/CoreCommodity CRB® Heating Oil Excess Return Index	.CRBHO
FTSE/CoreCommodity CRB® Heating Oil Total Return Index	.CRBHOT
FTSE/CoreCommodity CRB® Heating Oil Total Return (Overnight Rate) Index	.CRBHOTS
FTSE/CoreCommodity CRB® Heating Oil 3-Month Forward Excess Return Index	.CRBHO3
FTSE/CoreCommodity CRB® Heating Oil 3-Month Forward Total Return Index	.CRBHOT3
FTSE/CoreCommodity CRB® Heating Oil 3-Month Forward Total Return (Overnight Rate) Index	.CRBHOTS3
FTSE/CoreCommodity CRB® Natural Gas Excess Return Index	.CRBNG
FTSE/CoreCommodity CRB® Natural Gas Total Return Index	.CRBNGT
FTSE/CoreCommodity CRB® Natural Gas Total Return (Overnight Rate) Index	.CRBNGTS
FTSE/CoreCommodity CRB® Natural Gas 3-Month Forward Excess Return Index	.CRBNG3
FTSE/CoreCommodity CRB® Natural Gas 3-Month Forward Total Return Index	.CRBNGT3
FTSE/CoreCommodity CRB® Natural Gas 3-Month Forward Total Return (Overnight Rate) Index	.CRBNGTS3
FTSE CRB® CoreCommodity Unleaded Gasoline Excess Return Index	.CRBRB
FTSE/CoreCommodity CRB® Unleaded Gasoline Total Return Index	.CRBRBT
FTSE/CoreCommodity CRB® Unleaded Gasoline Total Return (Overnight Rate) Index	.CRBRBTS
FTSE/CoreCommodity CRB® Unleaded Gasoline 3-Month Forward Excess Return Index	.CRBRB3
FTSE/CoreCommodity CRB® Unleaded Gasoline 3-Month Forward Total Return Index	.CRBRBT3
FTSE/CoreCommodity CRB® Unleaded Gasoline 3-Month Forward Total Return (Overnight Rate) Index	.CRBRBTS3

4. Quality Control

4.1 Quality Control

LSEG has quality control procedures in place to monitor any prices, whether they are obtained from a regulated exchange or other market, prior to calculation of indices as well as prior to publication.

4.2 Re-Fix Policy

A retrospective recalculation will only be made when a manifest and material error has been identified. Any retrospective recalculation will be notified to users via the alert system on LSEG Workspace.

4.3 Whistleblowing Policy

FTSE/CoreCommodity CRB Single Commodity Indices are subject to RBSL's Whistleblowing arrangements where RBSL maintains an independent whistleblowing hotline for all benchmarks it administers, which can be accessed on its public [website](#).

4.4 Insufficient Data and Market Disruptions

RBSL endeavours to develop and publish indices only where RBSL has a high level of confidence of long-term availability and access to the necessary data to administer the indices.

A "Market Emergency" is herein defined as any unscheduled and extraordinary condition in which liquidity in the markets used to source input data is interrupted (such as an event resulting in the unscheduled closing of futures exchanges). Should a Market Emergency occur, RBSL reserves the right to take such action with respect to the FTSE/CoreCommodity CRB Single Commodity Indices as it deems appropriate given the circumstances and after consulting with the Index Oversight Committee as appropriate (see section 5).

RBSL will attempt to notify interested parties of any such actions as well in advance as is practicable. There is no assurance, however, that following a Market Emergency, the actions taken in response to such Market Emergency, or any other force majeure event, will not have an adverse effect on the value of the FTSE/CoreCommodity CRB Single Commodity Indices or the manner in which they are calculated.

4.4.1 Monthly Rollover Disruptions

A "Rollover Disruption Event" is defined as any day on which a commodity is scheduled to roll, on which either: a) the front month or back month contracts for the commodity settle at the daily maximum or minimum price as determined by the rules for the relevant exchange, or b) the exchange fails to publish an official settlement price for the commodity, or c) the exchange on which the commodity trades is not scheduled to be open. If a Rollover Disruption Event occurs for any commodity, that portion of the rollover for that commodity only which was scheduled to occur on that day will be deferred until the next business day upon which no Rollover Disruption Event occurs for that commodity.

5. FTSE/CoreCommodity CRB® Single Commodity Indices Governance

5.1 Overview

The FTSE/CoreCommodity CRB Single Commodity Indices are administered by Refinitiv Benchmark Services (UK) Limited (“RBSL”) and as administrator, RBSL is responsible for the maintenance, calculation and distribution of the FTSE/CoreCommodity CRB Indices in accordance with EU Benchmark Regulations. RBSL is incorporated in the United Kingdom (“UK”) and is a wholly owned subsidiary of Refinitiv. RBSL is authorised and regulated in the UK by the Financial Conduct Authority (“FCA”), FCA Reference Number 610678.

5.2 CC/CRB Oversight Committee

The CC/CRB Oversight Committee is responsible for overseeing the provision of the FTSE/CoreCommodity CRB Single Commodity Indices, including reviewing the benchmark definition and methodology at least annually, overseeing any changes to the benchmark methodology or cessation of the benchmark, and overseeing the administrator’s control framework, management and operation of the benchmark. The CC/CRB Oversight Committee shall include at least two representatives from CoreCommodity Indexes, LLC and one representative from RBSL.

5.3 Benchmark Manager

A Benchmark Manager is appointed by RBSL from time to time. The Benchmark Manager is a subject matter expert and is responsible for the integrity and quality of the Index which includes the following specific responsibilities:

- Interpreting the Index Methodology and implement the change procedure (if any)
- Reviewing feedback received from the Index stakeholders and the CC/CRB Oversight Committee.
- Developing and implementing changes to the Index Methodology pursuant to feedback from Index stakeholders or in response to market events, subject to Section 6.1 below and in accordance with the RBSL Benchmark Change and Cessation Policy
- Managing interaction with Index stakeholders

5.4 Index Stakeholder Feedback

The Benchmark Manager may seek the views of market participants and other Index stakeholders on a bilateral basis from time to time or through one or more Index Advisory Groups. Issues on which the Benchmark Manager may consult Index stakeholders include conditions in the underlying markets that the Index represents, the representativeness of the input data used in the determination of the Index, the performance of the index with respect to the underlying markets that it represents, potential changes to the index calculation methodology, the constituents of index baskets, the weight calculation algorithm and exceptional market events. RBSL welcomes feedback and comments from Index stakeholders.

5.5 Enquiries

LSEG welcomes feedback and any queries or questions regarding this Methodology should be sent to LSEG at index_queries@lseg.com.

6. Methodology Reviews and Change Procedures

6.1 Review of the Methodology

The FTSE/CoreCommodity CRB Single Commodity Indices Methodology is reviewed once per year and, if required by market events, more frequently. Any potential changes to the Methodology are reviewed by the CC/CRB Oversight Committee and are subject to the RBSL Benchmark Change and Cessation Policy.

All reasonable efforts will be made to provide at least one month's notice of any changes to the Methodology prior to their implementation.

The FTSE/CoreCommodity CRB® Single Commodity Indices has been back-tested (both excess returns and total returns versions) from 4th Jan 1999 till end of 31st Aug 2024 and no discrepancies from published index values for the same time period have been found.

6.2 Cessation of An Index

Cessation of Index as defined in this methodology will follow the [RBSL Benchmark Change and Cessation Policy](#) as published on FTSE Russell website.

7. ESG Disclosures - Low Carbon benchmarks regulation (2019/2089)

EXPLANATION OF HOW ESG FACTORS ARE REFLECTED IN THE KEY ELEMENTS OF THE BENCHMARK METHODOLOGY	
Item 1. Name of the benchmark administrator.	Refinitiv Benchmark Services (UK) Limited
Item 2. Type of benchmark or family of benchmarks.	Commodity
Item 3. Name of the benchmark or family of benchmarks.	FTSE/CoreCommodity CRB® Single Commodity Indices
Item 4. Does the benchmark methodology for the benchmark or family of benchmarks take into account ESG factors?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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