REFINITIV/CORECOMMODITY CRB® INDICES

METHODOLOGY

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Introduction

1.1 Refinitiv/CoreCommodity CRB® Indices

This Methodology contains the rules for calculating the Refinitiv/CoreCommodity CRB Indices. This Methodology and all information contained herein is the exclusive property of Refinitiv or its affiliates Refinitiv US LLC ("Refinitiv") and/or CoreCommodity Indexes, LLC. or its affiliates ("CoreCommodity") as applicable. Refinitiv 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").

Refinitiv/CoreCommodity CRB Indices are calculated for the following segments ("Commodity Segments"):  
- the Primary CRB index comprising 19 individual commodities,  
- the Non-Energy CRB index which excludes energy commodities and comprises 15 individual commodities, and  
- the Non-Agri and Livestock CRB index which excludes both agricultural and livestock commodities and comprises 9 individual commodities.

The commodities belonging to each Commodity Segment are shown in section 3.2 below.

For each Commodity Segment, four types of indices are calculated:
- an excess return index based on the front futures expiration month for each commodity (the “Main” excess return index),  
- an excess return index based on the futures expiration months for each commodity that are 3 months behind the front expiration months (the “Forward” excess return index),  
- a total return index derived from the Main excess return index, and  
- a total return index derived from the Forward excess return index.

In addition, a euro denominated and currency hedged index is calculated for the Primary CRB total return index using 1 month FX forwards with a daily adjusted notional.

1.2 Intended Readership

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1.3 Document Publication

This document is available on the Refinitiv website and on request.
2. Calculation Methodology

2.1 Individual Commodity Percent Return

An individual commodity “Percent Return” is calculated for each commodity in each Commodity Segment Main index and Forward index. The futures contract expiration months used in the Main Commodity Segment Main indices and the Forward indices are shown in section 3.3 below.

Each Percent Return on business day \( t \), \( PR_t \), is calculated with reference to the previous business day \( t - 1 \) as

\[
PR_t = PR_{t-1} \times \frac{CPS_t}{CPS_{t-1}} 
\]

where \( CPS \) 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 \( CPS \) shall be the weighted average price of the front and immediate back expiration months (see below).

If day \( t \) falls outside the roll period, \( CPS \) is calculated on day \( t \) as

\[
CPS_t = FP_t 
\]

Similarly, \( CPS \) is calculated on day \( t - 1 \) as

\[
CPS_{t-1} = FP_{t-1} 
\]

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, \( CPS \) is calculated on day \( t \) as

\[
CPS_t = \sum_{i=1}^{2} DW_t^i \times FP_t^i 
\]

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, \( CPS \) is calculated on day \( t - 1 \) as

\[
CPS_{t-1} = \sum_{i=1}^{2} DW_t^i \times FP_{t-1}^i 
\]

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 Commodity Excess Return Indices

The Refinitiv/CoreCommodity Commodity Segment Main and Forward excess return indices are calculated using the individual commodity percent returns calculated in accordance with equation 1 for the relevant Main or Forward index.

Each Commodity Segment excess return index on day $t$, denoted as $ER_t$, is calculated as

$$ER_t = \sum_{i=1}^{n} PR_t^i$$

(6)

The summation is over all $n$ individual commodities belonging to the relevant Commodity Segment Main or Forward index. For each Commodity Segment,

- $n = 19$ for Refinitiv/CoreCommodity CRB index,
- $n = 15$ for Non-Energy, and
- $n = 9$ for Non-Agri and Livestock versions.

The same values apply for $n$ for both the Main and the Forward excess return indices for each particular Commodity Segment.

2.3 Commodity Total Return Indices

Total return indices are calculated for each Commodity Segment Main and Forward index. Each total return index, $TR_t$, 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

$$TR_t = TR_{t-1} \times \left(\frac{ER_t}{ER_{t-1}} + TBR_t\right) \times (1 + TBR_t)^{d-1}$$

(7)

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

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

(8)

Each Total Return Index, $TR_t$, is calculated in USD and $TB_{t-1}^{3mo}$ is the 3 month US Treasury Bill high rate for the previous day.
2.4 Commodity Euro Daily Hedged Indices

The Refinitiv/CoreCommodity CRB Total Return Euro Daily Hedged Index $TH_t$ is a euro denominated index that combines the Refinitiv/CoreCommodity CRB Total Return Index with the return from a one month FX forward purchase of euros and sale of US dollars. The notional of the FX forward is adjusted on a daily basis.

$$\frac{TH_{t}^{EUR}}{TH_{0}^{EUR}} = \frac{FX_t}{FX_0} \cdot \frac{TR_{t}^{USD}}{TR_{0}^{USD}} + \sum_{i=1}^{t} \left( \frac{TR_{i-1}^{USD}}{TR_{0}^{USD}} \cdot \frac{[FX_{i-1}^{T} - FX_{i}^{T}]}{FX_0} \right)$$  \hspace{1cm} (9)

Where:

$TH_{t}^{EUR}$ = Refinitiv/Core Commodity CRB Total Return Euro Daily Hedged Index

$TR_{t}^{USD}$ = Refinitiv/Core Commodity CRB Total Return Index in US dollars

$FX_t$ = Spot Forex rate (on a “USD1 <-> EUR x.xx” basis) at the time $t$

The one month FX forward contract will expire and be replaced at the close of the 6th US business day of each month (i.e. at the monthly rebalance). The date and time of the last rebalance is denoted $t = 0$ and the date and time of the next rebalance is denoted $T$. The forward rate $FX_t^T$ used during the month on day $t$ (where $0 < t \leq T$) for maturity at $T$ is derived using an interpolation:

$$FX_t^T = FX_t + (FX_{t+1 \text{Month}} - FX_t) \cdot \frac{n(t,T)}{n(t, t + 1 \text{Month})}$$ \hspace{1cm} (10)

where:

$FX_{t+1 \text{Month}}$ = One Month Forward Rate on day $t$ for maturity one month from $t$

$n(t,T)$ = Actual number of days from $t$ to $T$

$n(t, t + 1 \text{Month})$ = Actual number of days from $t$ to $t + 1$ month

$t - 1 = \text{Previous Business Day}$
3. Weights, Futures Expiries and Rebalances

3.1 Monthly Rebalance

The Refinitiv/CoreCommodity CRB Commodity Segment Main and Forward indices are rebalanced monthly after close of 6th Business day to reinstate the fixed weights allocations from 2005 revision. This is done by rescaling the percent return for individual commodities \( PR_{it} \) belonging to each Commodity Segment Main and Forward excess return index \( ER_t \) as follows

\[
PR_{it} = W_i \times ER_t
\]

(11)

where \( W_i \) is the weight of the individual commodity in that Commodity Segment excess return index. Note that weights of individual commodities are the same in both the Main index and the Forward index for each Commodity Segment.

The consequence of the monthly rebalance is that by the end of the seventh business day, each individual percent return for a particular Commodity Segment Main and Forward index is equal to

\[
PR_{i,r} = ER_{r-1} \times W_i \times \frac{CPS_{i,r}}{CPS_{i,r-1}}
\]

(12)

where \( r \) is defined as the seventh business day.
## 3.2 Index Weights

The weight of individual commodities within each Commodity Segment index is as follows. Note that the weights of individual commodities are the same in both the main index and the 3-month forward index for any particular Commodity Segment.

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Index Weight</th>
<th>Contract Months</th>
<th>Exchange</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CRB</td>
<td>Non-Energy</td>
<td>Non-Agri</td>
</tr>
<tr>
<td>WTI Crude Oil</td>
<td>23.00%</td>
<td>-</td>
<td>23.00%</td>
</tr>
<tr>
<td><strong>Group I</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heating Oil</td>
<td>5.00%</td>
<td>-</td>
<td>5.00%</td>
</tr>
<tr>
<td>Unleaded Gas</td>
<td>5.00%</td>
<td>-</td>
<td>5.00%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>33.00%</td>
<td>-</td>
<td>33.00%</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>6.00%</td>
<td>-</td>
<td>15.00%</td>
</tr>
<tr>
<td>Corn</td>
<td>6.00%</td>
<td>9.84%</td>
<td>-</td>
</tr>
<tr>
<td>Soybeans</td>
<td>6.00%</td>
<td>9.84%</td>
<td>-</td>
</tr>
<tr>
<td><strong>Group II</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Live Cattle</td>
<td>6.00%</td>
<td>9.84%</td>
<td>-</td>
</tr>
<tr>
<td>Gold</td>
<td>6.00%</td>
<td>9.84%</td>
<td>15.00%</td>
</tr>
<tr>
<td>Aluminum</td>
<td>6.00%</td>
<td>9.84%</td>
<td>15.00%</td>
</tr>
<tr>
<td>Copper</td>
<td>6.00%</td>
<td>9.84%</td>
<td>15.00%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>42.00%</td>
<td>59.04%</td>
<td>60.00%</td>
</tr>
<tr>
<td>Sugar</td>
<td>5.00%</td>
<td>8.20%</td>
<td>-</td>
</tr>
<tr>
<td><strong>Group III</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cotton</td>
<td>5.00%</td>
<td>8.20%</td>
<td>-</td>
</tr>
<tr>
<td>Cocoa</td>
<td>5.00%</td>
<td>8.20%</td>
<td>-</td>
</tr>
<tr>
<td>Coffee</td>
<td>5.00%</td>
<td>8.20%</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>20.00%</td>
<td>32.80%</td>
<td></td>
</tr>
<tr>
<td>Nickel</td>
<td>1.00%</td>
<td>1.64%</td>
<td>3.50%</td>
</tr>
<tr>
<td>Wheat</td>
<td>1.00%</td>
<td>1.64%</td>
<td>-</td>
</tr>
<tr>
<td><strong>Group IV</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lean Hogs</td>
<td>1.00%</td>
<td>1.64%</td>
<td>-</td>
</tr>
<tr>
<td>Orange Juice</td>
<td>1.00%</td>
<td>1.60%</td>
<td>-</td>
</tr>
<tr>
<td>Silver</td>
<td>1.00%</td>
<td>1.64%</td>
<td>3.50%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>5.00%</td>
<td>8.16%</td>
<td>7.00%</td>
</tr>
</tbody>
</table>

The historic CRB Index has undergone 9 previous weighting revisions since its inception to ensure market representative and the current model is a continuation from 2005 revision.
### 3.3 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.

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Exchange</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTI Crude Oil</td>
<td>NYMEX</td>
<td>Feb</td>
<td>Mar</td>
<td>Apr</td>
<td>May</td>
<td>Jun</td>
<td>Jul</td>
<td>Aug</td>
<td>Sep</td>
<td>Oct</td>
<td>Nov</td>
<td>Dec</td>
<td>Jan</td>
</tr>
<tr>
<td>Heating Oil</td>
<td>NYMEX</td>
<td>Feb</td>
<td>Mar</td>
<td>Apr</td>
<td>May</td>
<td>Jun</td>
<td>Jul</td>
<td>Aug</td>
<td>Sep</td>
<td>Oct</td>
<td>Nov</td>
<td>Dec</td>
<td>Jan</td>
</tr>
<tr>
<td>Unleaded Gas</td>
<td>NYMEX</td>
<td>Feb</td>
<td>Mar</td>
<td>Apr</td>
<td>May</td>
<td>Jun</td>
<td>Jul</td>
<td>Aug</td>
<td>Sep</td>
<td>Oct</td>
<td>Nov</td>
<td>Dec</td>
<td>Jan</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>NYMEX</td>
<td>Feb</td>
<td>Mar</td>
<td>Apr</td>
<td>May</td>
<td>Jun</td>
<td>Jul</td>
<td>Aug</td>
<td>Sep</td>
<td>Oct</td>
<td>Nov</td>
<td>Dec</td>
<td>Jan</td>
</tr>
<tr>
<td>Corn</td>
<td>CBOT</td>
<td>Mar</td>
<td>Mar</td>
<td>May</td>
<td>May</td>
<td>Jul</td>
<td>Jul</td>
<td>Nov</td>
<td>Nov</td>
<td>Nov</td>
<td>Jan</td>
<td>Jan</td>
<td>Jan</td>
</tr>
<tr>
<td>Soybeans</td>
<td>CBOT</td>
<td>Mar</td>
<td>Mar</td>
<td>May</td>
<td>May</td>
<td>Jul</td>
<td>Jul</td>
<td>Nov</td>
<td>Nov</td>
<td>Nov</td>
<td>Jan</td>
<td>Jan</td>
<td>Jan</td>
</tr>
<tr>
<td>Live Cattle</td>
<td>CME</td>
<td>Feb</td>
<td>Apr</td>
<td>Apr</td>
<td>Jun</td>
<td>Jun</td>
<td>Aug</td>
<td>Aug</td>
<td>Oct</td>
<td>Oct</td>
<td>Dec</td>
<td>Dec</td>
<td>Feb</td>
</tr>
<tr>
<td>Gold</td>
<td>COMEX</td>
<td>Feb</td>
<td>Apr</td>
<td>Apr</td>
<td>Jun</td>
<td>Jun</td>
<td>Aug</td>
<td>Aug</td>
<td>Dec</td>
<td>Dec</td>
<td>Dec</td>
<td>Dec</td>
<td>Feb</td>
</tr>
<tr>
<td>Aluminum</td>
<td>LME</td>
<td>Mar</td>
<td>Mar</td>
<td>Jun</td>
<td>Jun</td>
<td>Sep</td>
<td>Sep</td>
<td>Dec</td>
<td>Dec</td>
<td>Dec</td>
<td>Dec</td>
<td>Dec</td>
<td>Mar</td>
</tr>
<tr>
<td>Copper</td>
<td>COMEX</td>
<td>Mar</td>
<td>Mar</td>
<td>May</td>
<td>May</td>
<td>Jul</td>
<td>Jul</td>
<td>Sep</td>
<td>Sep</td>
<td>Dec</td>
<td>Dec</td>
<td>Dec</td>
<td>Mar</td>
</tr>
<tr>
<td>Cotton</td>
<td>NYBOT</td>
<td>Mar</td>
<td>Mar</td>
<td>May</td>
<td>May</td>
<td>Jul</td>
<td>Jul</td>
<td>Dec</td>
<td>Dec</td>
<td>Dec</td>
<td>Dec</td>
<td>Dec</td>
<td>Mar</td>
</tr>
<tr>
<td>Cocoa</td>
<td>NYBOT</td>
<td>Mar</td>
<td>Mar</td>
<td>May</td>
<td>May</td>
<td>Jul</td>
<td>Jul</td>
<td>Sep</td>
<td>Sep</td>
<td>Dec</td>
<td>Dec</td>
<td>Dec</td>
<td>Mar</td>
</tr>
<tr>
<td>Coffee</td>
<td>NYBOT</td>
<td>Mar</td>
<td>Mar</td>
<td>May</td>
<td>May</td>
<td>Jul</td>
<td>Jul</td>
<td>Sep</td>
<td>Sep</td>
<td>Dec</td>
<td>Dec</td>
<td>Dec</td>
<td>Mar</td>
</tr>
<tr>
<td>Nickel</td>
<td>LME</td>
<td>Mar</td>
<td>Mar</td>
<td>Jun</td>
<td>Jun</td>
<td>Sep</td>
<td>Sep</td>
<td>Dec</td>
<td>Dec</td>
<td>Dec</td>
<td>Dec</td>
<td>Dec</td>
<td>Mar</td>
</tr>
<tr>
<td>Wheat</td>
<td>CBOT</td>
<td>Mar</td>
<td>Mar</td>
<td>May</td>
<td>May</td>
<td>Jul</td>
<td>Jul</td>
<td>Sep</td>
<td>Sep</td>
<td>Dec</td>
<td>Dec</td>
<td>Dec</td>
<td>Mar</td>
</tr>
<tr>
<td>Lean Hogs</td>
<td>CME</td>
<td>Feb</td>
<td>Apr</td>
<td>Apr</td>
<td>Jun</td>
<td>Jun</td>
<td>Jul</td>
<td>Aug</td>
<td>Oct</td>
<td>Oct</td>
<td>Dec</td>
<td>Dec</td>
<td>Feb</td>
</tr>
<tr>
<td>Orange Juice</td>
<td>NYBOT</td>
<td>Mar</td>
<td>Mar</td>
<td>May</td>
<td>May</td>
<td>Jul</td>
<td>Jul</td>
<td>Sep</td>
<td>Sep</td>
<td>Nov</td>
<td>Nov</td>
<td>Jan</td>
<td>Jan</td>
</tr>
<tr>
<td>Silver</td>
<td>COMEX</td>
<td>Mar</td>
<td>Mar</td>
<td>May</td>
<td>May</td>
<td>Jul</td>
<td>Jul</td>
<td>Sep</td>
<td>Sep</td>
<td>Dec</td>
<td>Dec</td>
<td>Dec</td>
<td>Mar</td>
</tr>
</tbody>
</table>

Exceptional Roll schedule for 2020 to address exceptional market conditions, including the negative settlement price of the WTI Crude Oil May 2020 futures contract.

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Exchange</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTI Crude Oil</td>
<td>NYMEX</td>
<td>Feb</td>
<td>Mar</td>
<td>Apr</td>
<td>May</td>
<td>Jun</td>
<td>Sep</td>
<td>Sep</td>
<td>Sep</td>
<td>Sep</td>
<td>Oct</td>
<td>Nov</td>
<td>Dec</td>
</tr>
</tbody>
</table>
The Forward index expiration months used during each calendar month are as follows.

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Exchange</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
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<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTI Crude Oil</td>
<td>NYMEX</td>
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<td>Jun</td>
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<tr>
<td>Heating Oil</td>
<td>NYMEX</td>
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<tr>
<td>Unleaded Gas</td>
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<tr>
<td>Heating Oil</td>
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<td>Jun</td>
<td>Aug</td>
<td>Aug</td>
<td>Dec</td>
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<td>Jul</td>
<td>Jul</td>
<td>Sep</td>
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<td>Dec</td>
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<tr>
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<td>Jul</td>
<td>Aug</td>
<td>Oct</td>
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<tr>
<td>Orange Juice</td>
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<td>Jul</td>
<td>Jul</td>
<td>Sep</td>
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<tr>
<td>Silver</td>
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<td>Jul</td>
<td>Jul</td>
<td>Sep</td>
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<td>Dec</td>
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<td>May</td>
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Exceptional 2020 WTI Crude Oil roll schedule for 2020 forward index expiration months

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<tr>
<th>Commodity</th>
<th>Exchange</th>
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<th>Feb</th>
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</tr>
</thead>
<tbody>
<tr>
<td>WTI Crude Oil</td>
<td>NYMEX</td>
<td>May</td>
<td>Jun</td>
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<td>Aug</td>
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</tr>
</tbody>
</table>
4. **Data Sources and Index Publication**

4.1 **Data Source**

All commodity prices used in the Refinitiv/CoreCommodity CRB indices are taken from commodity futures contract prices published by the CME Group (COMEX, NYMEX, CBOT and CME) and London Metal Exchange (LME). CME Group of exchanges (COMEX, NYMEX, CBOT and CME) and London Metal Exchange (LME) regulated global market place and a well established platform for commodity futures price discovery.

4.2 **Index Dissemination**

The Refinitiv/CoreCommodity CRB Excess and Total Return Indices are disseminated in real time from 07:30 EST (11:30 GMT) to 16:40 EST (20:40 GMT) on each business day on which US futures market NYMEX is open for business.

Refinitiv/CoreCommodity CRB Total Return Euro Daily Hedged Index is published at the close of every day.

4.3 **Index Publication**

The Refinitiv/CoreCommodity CRB Indices are published on Refinitiv Eikon with the following RICs:

- Refinitiv/CoreCommodity CRB® Excess Return Index .TRCCRB
- Refinitiv/CoreCommodity CRB® Total Return Index .TRCCRBTR
- Refinitiv/CoreCommodity CRB® Total Return Euro Daily Hedge Index .TRCCRBTH
- Refinitiv/CoreCommodity CRB® 3-Month Forward Excess Return Index .TRCCTBER
- Refinitiv/CoreCommodity CRB® 3-Month Forward Total Return Index .TRCCTBTR
- Refinitiv/CoreCommodity CRB® Ex-Energy Excess Return Index .TRCCRBNEER
- Refinitiv/CoreCommodity CRB® Ex-Energy Total Return Index .TRCCRBNETR
- Refinitiv/CoreCommodity CRB® 3-Month Forward Ex-Energy Excess Return Index .TRCCTXER
- Refinitiv/CoreCommodity CRB® 3-Month Forward Ex-Energy Total Return Index .TRCCTXTR
- Refinitiv/CoreCommodity CRB® Index Non-Agriculture and Livestock Excess Return .TRCCRBNALER
- Refinitiv/CoreCommodity CRB® Index Non-Agriculture and Livestock Total Return .TRCCRBNALTR
- Refinitiv/CoreCommodity CRB® 3-Month Forward Index Non-Agriculture and Livestock Excess Ret .TRCCAXER
- Refinitiv/CoreCommodity CRB® 3-Month Forward Index Non-Agriculture and Livestock Total Return .TRCCAXTR
5. **Quality Control**

5.1 **Quality Control**

Refinitiv 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.

5.2 **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 Refinitiv Eikon.

5.3 **Whistleblowing Policy**

Refinitiv/CoreCommodity CRB 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](#) or via whistleblowing.benchmarks@refinitiv.com.

5.3 **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 Refinitiv/CoreCommodity CRB Indices as it deems appropriate given the circumstances and after consulting with the Index Oversight Committee as appropriate (see section 6).

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 Refinitiv/CoreCommodity CRB Indices or the manner in which they are calculated.

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.

If, on any date the Refinitiv/CoreCommodity CRB Indices are scheduled to rebalance an official settlement price for any one or more of the commodities in the Refinitiv/CoreCommodity CRB Indices is unavailable, then the price used in rebalancing the Index for those commodities will be the price on the previous Business Day upon which a price is available. In the event that any one or more individual commodities settle at the daily maximum price or the daily minimum price, that price will be used for the purpose of rebalancing the Index.
6. Refinitiv/CoreCommodity CRB® Indices Governance

6.1 Overview
The Refinitiv/CoreCommodity CRB Indices are administered by Refinitiv Benchmark Services (UK) Limited (“RBSL”) and as administrator, RBSL is responsible for the maintenance, calculation and distribution of the Refinitiv/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.

6.2 CC/CRB Oversight Committee
The CC/CRB Oversight Committee is responsible for overseeing the provision of the Refinitiv/CoreCommodity CRB 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.

6.3 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 7.1 below and in accordance with the RBSL Benchmark Change and Cessation Policy
- Managing interaction with Index stakeholders

6.4 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.

6.5 Enquiries
RSBL welcomes feedback and any queries or questions regarding this Methodology should be sent to Refinitiv at index_queries@refinitiv.com or CoreCommodity Indexes at Indexes@CoreCommodityllc.com.
7. Methodology Reviews and Change Procedures

7.1 Review of the Methodology

The Refinitiv/CoreCommodity CRB 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.

7.2 Cessation of An Index

Cessation of Index as defined in this methodology will follow the RBSL Benchmark Change and Cessation Policy as published on Refinitiv’s website.
Disclaimers

This information, including the Refinitiv/CoreCommodity CRB® Index and related indices and sub-indices (collectively the “RF/CC-CRB”) and materials relating thereto, is the property of Refinitiv or Refinitiv US LLC, or its affiliates (“Refinitiv”) and/or CoreCommodity Indexes, LLC, or its affiliates (“CoreCommodity”). It may not be used to create, offer, trade, market or promote any financial products without the express written consent of CoreCommodity and Refinitiv. All historical data for the RF/CC-CRB before June 17, 2005 are simulated by applying the index construction and methodology as of June 17, 2005 to available historical futures values. The simulated data do not reflect the actual performance of the index as it was constructed at the time of reporting index values. Instead, the simulated historical values reflect the index construction and methodology as of June 17, 2005 which were designed with the benefit of hindsight. None of CoreCommodity, Refinitiv or any other of their subsidiaries or affiliates makes any representations as to their accuracy or completeness. Certain techniques such as interpolation and estimation were employed where data was unavailable. Simulated historical returns do not reflect the impact (if any) of market disruption or market emergency events. Simulated historical returns do not reflect the impact that material changes in the underlying markets might have had on the decisions to use or continue using certain commodities and weightings in the RF/CC-CRB. All simulated historic data for the RF/CC-CRB is based on fixed weights and rollover and rebalancing schedules. The historical data used for simulated returns for sub-indices was not in all cases the same data used for the full index or indices. None of CoreCommodity, Refinitiv or any of their subsidiaries or affiliates shall have any liability, contingent or otherwise, to any person or entity for the quality, accuracy, timeliness and/or completeness of the information contained herein, the RF/CC-CRB, or for delays, errors, omissions or interruptions in the publication of the RF/CC-CRB or any related data. CoreCommodity and Refinitiv may discontinue operation of the RF/CC-CRB and may discontinue disseminating information about the RF/CC-CRB at any time without prior notice. Refinitiv and CoreCommodity may operate and market other indices that may compete with the RF/CC-CRB. CoreCommodity and its affiliates and their respective directors, officers and employees may buy or sell securities or commodities mentioned or contemplated herein as agent or as principal for their own account and may have positions or engage in transactions based on or indexed to the RF/CC-CRB. It is possible that CoreCommodity’s trading activity will affect the value of the RF/CC-CRB. CoreCommodity, Refinitiv and their subsidiaries and affiliates do not guarantee the accuracy, timeliness or completeness of the RF/CC-CRB or any information, material or data related thereto. CoreCommodity, Refinitiv and their subsidiaries and affiliates including directors, officers and employees, with respect to use of this material or the RF/CC-CRB, including but not limited to the trading of or investments in products based on or related to the RF/CC-CRB, (a) make no warranty, express or implied, as to the results to be obtained by any person or entity, (b) make no warranty, express or implied, and expressly disclaim any warranty or merchantability or fitness for a particular purpose, and (c) without limiting any of the foregoing, shall have no liability for any direct, indirect, special, punitive, consequential or any other damages (including lost profits), even if notified of the possibility of such damages. Certain third parties, pursuant to license agreements with CoreCommodity and Refinitiv, may create, offer, trade, market and promote financial products or transactions based on, indexed to, or calculated with regard to, the RF/CC-CRB (the “Third Party Products”). CoreCommodity, Refinitiv and their subsidiaries and affiliates do not sponsor or endorse any Third Party Products, except as expressly and duly acknowledged by the applicable CoreCommodity or Refinitiv entity, and may operate the RF/CC-CRB without regard to the possible effects on such Third Party Products. This is not an offer or solicitation of an offer to buy or sell any security or investment. Past performance of the RF/CC-CRB is not necessarily indicative of future results. For a more complete description of the RF/CC-CRB, reference is made to the RF/CC-CRB Calculation Supplement. For more information, please contact Refinitiv (care of index_queries@refinitiv.com) or CoreCommodity Indexes at Indexes@CoreCommodityllc.com.

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