Barclays Index Methodology Description

Barclays Enhanced Commodity Indices

Barclays Index Administration
Strategy Indices
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This Index Methodology Description is separate and distinct from the technical index documentation used by the Index Sponsor which sets out the full technical details for the calculation and governance of the Index (the "Technical Index Rules"). In particular, this Index Methodology Description includes less information than the Technical Index Rules. In respect of investment by a fund, the Technical Index Rules will be made available to the relevant fund manager on request.

Introduction

Each Barclays enhanced commodity index (a "**Commodity Index**") is a rules based index that provides investors with long-only exposure to the commodity underlying a specified reference index (an "Underlying Index"). Each Commodity Index aims to outperform the Underlying Index through a static or dynamic commodity curve positioning process as described below. Each index comprises a basket of futures contracts (each a "**Futures Contract**") for the same commodities (each a "**Commodity**") that are included in the Underlying Index, which is amended from time to time. If the sponsor of the Underlying Index makes any amendments to the constituent Commodities, Futures Contracts or the index weightings relating to those Commodities, then these adjustments will be reflected in each respective Commodity Index. Schedule 2A contains the Commodities and related Futures Contracts currently referenced by a number of Underlying Indices.

The delivery month in respect of each commodity included in the Commodity Index is selected based on the specified component index (a "**Component Index**") and the dollar weight of such commodity follows the dollar weight of such commodity in the Underlying Index.

Barclays Bank PLC owns the intellectual property and licensing rights relating to each Commodity Index and the Index Rules (in such capacity, the "**Index Owner**"). Barclays Bank PLC in its appointed role as Index Sponsor (the "**Index Sponsor**") is responsible for the administration of each Commodity Index.

The Index Sponsor has appointed Bloomberg Index Services Limited (the "**Index Calculation Agent**") to calculate and maintain each Commodity Index in accordance with the index calculation methodology. While the Index Sponsor is responsible for the operation of the Commodity Index, certain aspects have thus been outsourced to the Index Calculation Agent.

Subject to the occurrence of index adjustment events, index disruption events or termination events, a daily level of each Index will be calculated by the Index Calculation Agent and published on the Barclays Index Website (*https://indices.barclays*, or any successor thereto) and such other generally available source for each index business day as soon as reasonably practicable thereafter.

Composition of the Commodity Index

Each Commodity Index is calculated using the same methodology as the Underlying Index, except that the static schedule of futures contract expiration months used in the Underlying Index is replaced by a set of futures contracts selected each month using the relevant Barclays enhancement methodology (each an "**Enhancement Methodology**") and defined by a Component Index. The contract allocation for each Commodity in a Commodity Index is determined using the relevant Enhancement Methodology, if applicable, as set out in Schedule 2. Where the Enhancement Methodology is marked as "N/A" for a specific Commodity, the contract allocation will be the same as for the Underlying Index. Each Enhancement Methodology adjusts the Futures Contract exposure across the term structure for a given Commodity.

Index Formula

For informational purposes, a generalised formula for a composite commodity index excess return for an index business day (t) is given by:

$$\mathbf{ER_t = ER_{t-1} \times (1 + PR_t)}$$

where the daily Price Return (PR_t) inside of a roll period, being a five-day period starting on the fifth index business day each month, is determined by the formula:

$$\mathbf{PR_t = \frac{\sum_{K=1}^{N}\left(CW_{k,t-1} \times IH_{k,t} \times P_{k,t} + \left(1 - CW_{k,t-1}\right) \times IH'_{k,t} \times P'_{k,t}\right)}{\sum_{K=1}^{N}\left(CW_{k,t-1} \times IH_{k,t} \times P_{k,t-1} + \left(1 - CW_{k,t-1}\right) \times IH'_{k,t} \times P'_{k,t-1}\right)} - 1}$$

and which outside of a roll period (when CW = 1) simplifies to:

$$\mathbf{PR_t = \frac{\sum_{K=1}^{N}\left(IH_{k,t} \times P_{k,t}\right)}{\sum_{K=1}^{N}\left(IH_{k,t} \times P_{k,t-1}\right)} - 1}$$

where IH and IH' are, the index holdings for respectively the current contract and roll contract, P and P' are the exchange settlement prices for respectively the current and roll contract, and CW is the weight of the current contract, which reduces through each five-day roll period from 1 to 0, in equal increments, all in respect of each Commodity (k) and index business day (t) or the immediately preceding index business day (t-1).

Adjustment of Weighting of Futures Contracts

The index holdings of each such Futures Contract in a Commodity Index are also adjusted each month to reflect the inclusion of the futures contracts that are different from the futures contracts in the Underlying Index with the aim of matching, as closely as possible, the weight of the respective Commodity in the Underlying Index. If the Underlying Index methodology has a normalising constant, it shall be deemed to be 1.0.

Commodity Index Calculation and Publication

The Index Sponsor will calculate a daily value for each Commodity Index in US Dollars for each index business day. The Index Sponsor will publish these index values on the following website: https://indices.barclays, or any successor thereto, as soon as reasonably practicable on or after each index business day, subject to the occurrence of force majeure events or disruption events. For informational purposes only, these index values will also be made available on Bloomberg.

THE ENHANCEMENT METHODOLOGIES

The Roll Yield Index Methodology

The Barclays roll yield index methodology ("Roll Yield") uses a systematic algorithm to dynamically adjust exposure across the commodity term structure on a monthly basis. Roll Yield seeks to locate the position on the curve with the most favourable implied roll yield, which is calculated for each liquid contract that expires within the next nine months. Implied roll yield will be positive for forward curves in backwardation, where the forward curve is downward sloping, whereas it will be negative for forward curves in "contango", where the forward curve is upward sloping. At any given time, each Commodity enhanced by Roll Yield will reference a long futures contract position for that Commodity, that expires within the next nine months, and which has exhibited the most favourable implied roll yield.

The Momentum Alpha Index Methodology

The Barclays momentum alpha index methodology ("Momentum Alpha") uses a systematic algorithm to dynamically adjust exposure across the commodity term structure on a monthly basis. Momentum Alpha seeks to locate the position on the curve with the highest historical annual outperformance versus the nearby index, or "alpha". The performance of the different parts of the curve is measured using specified deferred indices. A deferred index tracks the performance of holding and rolling the futures contracts that would be in the related nearby index a specified number of calendar months in the future.

At any given time, each Commodity enhanced by Momentum Alpha will reference a long futures contract position for that Commodity that corresponds to the nearby, one-month deferred, two-month-deferred or five-month-deferred Index for such a Commodity, which has exhibited the highest historical alpha.

The Seasonal Index Methodology

The Barclays seasonal index methodology ("Seasonal") aims to take advantage of seasonal supply and demand nature exhibited in a number of different commodities markets. Seasonal futures contracts tend to be the most liquid contracts throughout the year and provide exposure to a commodity at key points during a production or demand cycle, where supply/demand dynamics systematically affect prices. Each Commodity Index enhanced by Seasonal will reference a long futures contract position for a relevant Commodity in the seasonal contract closest to expiry until the roll period of the month immediately prior to expiry, at which point the exposure rolls to the next seasonal contract.

For the energy commodities of natural gas, heating oil and gas oil the seasonal contract is December. For grain and oil seed commodities, the seasonal contracts are July and December (or November for soybeans). For livestock commodities, the seasonal contracts are April and

December, with the exception of feeder cattle, which are April and October. For soft commodities the seasonal contracts are: March and December for coffee and cotton; and March and October for sugar.

The Dynamic Seasonal Index Methodology

The Barclays dynamic seasonal index methodology (“Dynamic Seasonal”) uses a systematic algorithm that measures changes in the curve slope, measured from the prompt contract to a contract with an expiry of up to 12 months in the future from the prompt contract, up to five months prior to prior to the expiry of a seasonal contract in order to determine when to roll exposure between two seasonal futures contracts. If the curve slope becomes less backwardated (less downward sloping), the Dynamic Seasonal index will roll into the next following seasonal contract. Seasonal futures contracts provide exposure to a commodity at key points during a production cycle, where supply/demand dynamics systematically affect prices.

At any given time, each Commodity enhanced by Dynamic Seasonal will reference a long seasonal futures contract position for that Commodity.

The Deferred Index Methodology

The Barclays deferred index methodology (“Deferred”) selects the contract that the related nearby index, that references market standard static futures schedules, will select a specified number of months in the future.

SCHEDULE 1

Underlying Indices Overview

Below are summary descriptions of the benchmark indices that can be enhanced by Barclays enhanced commodity index methodology.

Brief Overview of the Barclays Commodity Index (BCI)

The Barclays Commodity Index ("**BCI**"), the composition and valuation of which follows the methodology set out in the Barclays Commodity Index guide, the current version of which is dated June 2014, and which may be updated from time to time by Barclays, the index sponsor of the BCI. The BCI measures the performance of a well-diversified basket of commodities that has been constructed to offer a useful benchmark of the global commodity markets. Intended to be representative of the tradable market in USD commodity futures, the BCI is reviewed and rebalanced each year according to the index methodology and currently (2020) includes the 24 most liquid dollar-denominated commodities from six commodity sectors. The BCI is constructed as a weighted basket of commodity futures that track the returns of rolling the respective commodity futures from "front month" contract to "second month" contract as they approach the delivery dates.

To provide investors with a more balanced exposure to the global commodity markets, the BCI benchmark imposes diversification rules that cap liquidity-based sector and commodity weights on an annual basis. In particular, two levels of weight caps are imposed:

- Any broad commodity sector (Energy, Precious Metals, Industrial Metals, Grains and Oilseeds, Livestock, and Softs) is capped at 35% of the total index exposure; sectors with exposure greater than 35% are reduced to 35%.

- Specific commodity groups, which can reflect a single commodity or group of related commodities (for example, the Petroleum group includes Brent Crude, WTI Crude, Heating Oil, Gas Oil and Gasoline) are also capped. The largest group by liquidity is capped at 35%, and all others are capped at 20%.

Any excess weight is redistributed to commodities unaffected by the weights cap. As a result, once the biggest commodities reach the maximum limits, any weights in excess will be redistributed to smaller commodities to achieve a more balanced overall index exposure.

The BCI guidebook is available at https://indices.barclays

Brief Overview of the Bloomberg Commodity Index^SM^

The Bloomberg Commodity Index^SM^ ("BCOM"), the composition and valuation of which follows the methodology set out in the Bloomberg Commodity Index^SM^ Methodology, the current version of which is dated December 2018, may be updated by from time to time by the sponsor of the BCOM. According to the Bloomberg Commodity Index^SM^ methodology, the BCOM is designed to be a highly liquid and diversified benchmark for commodity investments, providing a broad-based exposure to commodities as an asset class. The composition of the BCOM is rebalanced on an annual basis, taking into account the following key principles:

1. Economic Significance: The BCOM uses both liquidity data and US Dollar-weighted production data in determining the relative quantities of included commodities.

2. Diversification: The following diversification rules are applied annually:

    a. No single commodity (e.g., natural gas or silver) may constitute over 15% of the BCOM

    b. No single commodity, together with its derivatives (e.g., WTI crude oil and brent crude oil, together with ULS diesel and unleaded gas), may constitute more than 25% of the BCOM

    c. No related group of commodities (e.g., energy, precious metal, livestock or grains) may constitute more than 33% of the BCOM

3. Continuity: The BCOM is intended to provide a stable benchmark while at the same time being responsive to the changing nature of commodity markets.

4. Liquidity: The BCOM is intended to provide a liquid benchmark.

The Bloomberg Commodity Index[SM] methodology is available at https://data.bloomberglp.com/professional/sites/10/BCOM-Methodology-December-2019.pdf

Brief Overview of the S&P GSCI

The S&P GSCI is a production-weighted basket of futures contracts on physical commodities traded on trading facilities in major industrialized countries.

The S&P GSCI is designed as a benchmark for investment in the commodity markets and as a measure of commodity market performance over time. The S&P GSCI includes contracts on physical commodities that are liquid, traded on trading facilities in major industrialized countries and that satisfy certain criteria. The commodities represented in the S&P GSCI are weighted based on a rolling five year world production basis, to reflect the relative significance of each commodity to the world economy. The value of the S&P GSCI has been normalized such that its hypothetical level on January 2, 1970 was 100. The S&P GSCI is calculated and maintained by S&P Dow Jones Indices ("SPDJ").

SPDJ monitor and determine the contracts to be included in the S&P GSCI and their weighting factors periodically, typically in November each year for the following calendar year. The following summarised process is used by SPDJ to determine the contracts to be included in the S&P GSCI:

i. Identify those contracts that meet the general criteria for eligibility (including being a contract on a physical commodity, traded on a trading facility in an OECD country, being denominated in US dollars, and to have sufficient history and quality of daily pricing and volume information);

ii. Apply the minimum absolute and relative contract traded volume requirements;

iii. Determine the number of contracts for each commodity.

The S&P GSCI Methodology is available at
http://www.spindices.com/documents/methodologies/methodology-sp-gsci.pdf

SCHEDULE 2A

Multi-Strategy 1 (With Seasonal Energy) Index Specification

The following Enhancement Methodologies will apply, as appropriate, to the Futures Contracts of the relevant Underlying Index. For the avoidance of doubt, the Underlying Index can be any one of the following:

1. the Barclays Commodity Index;
2. the Bloomberg Commodity Index[SM];
3. the S&P GSCI; or
4. such other composite sub index or capped index of the above indices.

			Included in the Underlying Index 2018		
Commodity	**Futures Contract**	**Enhancement Methodology**	**BCI**	**BCOM**	**S&P GSCI**
WTI Crude	Light Sweet Crude Oil	Roll Yield	✓	✓	✓
Brent Crude	Brent Crude	Roll Yield	✓	✓	✓
Gas Oil	Gasoil	Seasonal	✓	-	✓
Heating Oil	Heating Oil	Seasonal	✓	✓	✓
Unleaded Gasoline	RBOB Gasoline	Roll Yield	✓	✓	✓
Natural Gas	Henry Hub Natural Gas	Seasonal	✓	✓	✓
Aluminium	Aluminium (High Grade Primary)	Roll Yield	✓	✓	✓
Copper (LME)	Copper (Grade A)	Roll Yield	✓	-	✓
US Copper (US)	Copper (Grade 1)	Roll Yield	✓	✓	-
Lead	Lead (Standard)	Roll Yield	-	-	✓
Nickel	Nickel (Primary)	Roll Yield	✓	✓	✓
Tin	Tin	Roll Yield	-	-	-
Zinc	Zinc (Special High Grade)	Roll Yield	✓	✓	✓
Gold	Gold	N/A	✓	✓	✓
Silver	Silver	N/A	✓	✓	✓
Platinum	Platinum	N/A	-	-	-
Corn	Corn	Momentum Alpha	✓	✓	✓
Soybeans	Soybeans	Momentum Alpha	✓	✓	✓
Soybean Oil	Soybean Oil	Momentum Alpha	✓	✓	-
Soybean Meal	Soybean Meal	Momentum Alpha	✓	✓	-
Wheat	Wheat	Momentum Alpha	✓	✓	✓
Kansas Wheat	Hard Red Winter Wheat	Momentum Alpha	✓	-	✓
Spring Wheat	Hard Red Spring Wheat	N/A	-	-	-
Cocoa	Cocoa	Momentum Alpha	-	-	✓

Coffee	Coffee "C"	Momentum Alpha	✓	✓	✓
Cotton	Cotton No.2	Momentum Alpha	✓	✓	✓
Sugar	Sugar No. 11	Momentum Alpha	✓	✓	✓
Orange Juice	Orange Juice	N/A	-	-	-
Lean Hogs	Lean Hogs	Momentum Alpha	✓	✓	✓
Live Cattle	Live Cattle	Momentum Alpha	✓	✓	✓
Feeder Cattle	Feeder Cattle	Momentum Alpha	-	-	✓

Where the Enhancement Methodology is marked as "N/A", the contract allocation will be the same as for the Underlying Index. If a commodity is not included in the Underlying Index, it will not form part of the Barclays enhanced commodity index.

SCHEDULE 2B

Barclays Commodity Strategy 1496/1497 Excess/Total Return Index Specification

Underlying Index: The Bloomberg Commodity Index[SM] Excess/Total Return Index

Underlying Index Methodology: The Bloomberg Commodity Index[SM] Handbook (January 2018) as supplemented or amended from time to time

Index Commencement Date: February 29, 2000

Bloomberg Ticker (ER): BXCS1496

Bloomberg Ticker (TR): BXCS1497

Index Objective: The index is designed to outperform the Underlying Index by trying to capture theoretical risk premia that may be available in commodity markets

Table 1: Component Indices 2020

Commodity	Futures Contract	Component Index
WTI Crude	Light Sweet Crude Oil	Barclays WTI Crude Roll Yield 9M
Brent Crude	Brent Crude	Barclays Brent Crude Roll Yield 9M
Heating Oil	Heating Oil	Barclays Heating Oil Seasonal
Unleaded Gasoline	RBOB Gasoline	Barclays Unleaded Gasoline Roll Yield 9M
Gasoil	Low Sulphur Gasoil	Barclays Gasoil Seasonal
Natural Gas	Henry Hub Natural Gas	Barclays Natural Gas Seasonal
Aluminium	Aluminium (High Grade Primary)	Barclays Aluminium Roll Yield 9M
US Copper (US)	Copper (Grade 1)	Barclays US Copper Roll Yield 9M
Nickel	Nickel (Primary)	Barclays Nickel Roll Yield 9M
Zinc	Zinc (Special High Grade)	Barclays Zinc Roll Yield 9M
Gold	Gold	Barclays Gold Nearby
Silver	Silver	Barclays Silver Nearby
Corn	Corn	Barclays Corn Momentum Alpha
Soybeans	Soybeans	Barclays Soybeans Momentum Alpha
Soybean Oil	Soybean Oil	Barclays Soybean Oil Momentum Alpha
Soybean Meal	Soybean Meal	Barclays Soybean Meal Momentum Alpha
Wheat	Wheat	Barclays Wheat Momentum Alpha
Wheat	Hard Red Winter Wheat	Barclays Kansas Wheat Momentum Alpha
Coffee	Coffee “C”	Barclays Coffee Momentum Alpha
Cotton	Cotton No.2	Barclays Cotton Momentum Alpha
Sugar	Sugar No. 11	Barclays Sugar Momentum Alpha
Lean Hogs	Lean Hogs	Barclays Lean Hogs Momentum Alpha
Live Cattle	Live Cattle	Barclays Live Cattle Momentum Alpha

Adjustment of Weighting of Futures Contracts:

The index holdings of each Futures Contract in the Commodity Index are adjusted each month to reflect the inclusion of the futures contracts that are different from the futures contracts in the Underlying Index and also in accordance with the following process:

Determination of the Target Weights:

Calculate the target weight in respect of such Futures Contract for such Observation Date in accordance with the following formula:

$$\mathbf{TW_{k,t} = Z \times W_{k,t} + (1 - Z) \times \frac{W_{k,t} \times I_{k,t}}{\sum_{k=1}^{N} W_{k,t} \times I_{k,t}}}$$

Where:

"**Z**" means a parameter set at 50%;

"$\mathbf{W_{k,t}}$" means the estimated weight of the Futures Contract k for the Observation Date t, calculated as follows:

$$\mathbf{W_{k,t} = \frac{IH_k \times P_{k,t}}{\sum_{i=1}^{N} IH_i \times P_{i,t}}}$$

"$\mathbf{TW_{k,t}}$" means the target weight of Futures Contract k for Observation Date t;

"**N**" means the number of Futures Contracts in the index

IH_k and **IH_i** are the Underlying Index holdings of the roll contract for Futures Contract i and k respectively and **P_k** and **P_i** are the corresponding exchange settlement prices;

"$\mathbf{I_{k,t}}$" is an indicator function equal to 1 if, in accordance with the Backwardation Measure (as defined below), the Futures Contract K ranks within the top ten Futures Contracts as of the Observation Date t where each Futures Contract is ranked in descending order.

"**Observation Date**" means the fourth index business day of each month;

"**Backwardation Observation Date**" means in respect of each calendar month the index business day immediately preceding the relevant Observation Date;

"**Backwardation Measure**" means, in respect of a Futures Contract k and a Backwardation Observation Date t, the measure calculated according to the following formula:

$$\mathbf{BKM_{k,t} = \left(\frac{PF_{k,t}}{PB_{k,t}} - 1\right) \times \frac{365}{DB_{k,t} - DF_{k,t}}}$$

Where:

"**k**" refers to a Futures Contract;

"**t**" refers to a Backwardation Observation Date

"$\mathbf{BKM_{k,t}}$" means the Backwardation Measure of Futures Contract k on Backwardation Observation Date t;

"$\mathbf{PF_{k,t}}$" means the closing price of the Front Contract of Futures Contract k on Backwardation Observation Date t;

"$\mathbf{DF_{k,t}}$" is the number of calendar days from and including Backwardation Observation Date t to but excluding the Last Trade Date of the Front Contract of Futures Contract k;

"$\mathbf{PB_{k,t}}$" is the closing price of the Back Contract of Futures Contract k on Backwardation Observation Date t;

"$\mathbf{DB_{k,t}}$" is the number of calendar days from and including Backwardation Observation Date t to but excluding the Last Trade Date of the Back Contract of Futures Contract k;

"Back Contract" means, in respect of a Front Contract of a Futures Contract and a Backwardation Observation Date, the futures contract traded on the relevant exchange as at that Backwardation Observation Date whose delivery month falls closest in time but not after the one year anniversary of the delivery month of that Front Contract and for which the relevant exchange has published a closing price;

"Front Contract" means, in respect of a Futures Contract and a Backwardation Observation Date, the futures contract on the relevant exchange whose Last Trading Date falls after but closes in time to that Backwardation Observation Date;

"Last Trade Date" means, in respect of any Front Contract or Back Contract, the last day that such Front Contract or Back Contract is scheduled to trade on the applicable commodity exchange.

SCHEDULE 2C

Barclays Backwardation Tilt Multi-Strategy Capped Excess/Total Return Index Specification

Underlying Index: The Bloomberg Commodity Index^{SM} Index

Bloomberg Ticker (ER/TR): BCC3C3TP / BCC3C3TT

Index Objective: The index is designed to outperform the Underlying Index by trying to capture theoretical risk premia that may be available in commodity markets, with an embedded Index Amendment Rate equal to 0.13%.

The below table lists commodities and the corresponding Component Index referenced to determine the contract selection of the Underlying Index, as further described in the section entitled "Composition of the Commodity Index" above.

			Included in the Underlying Index 2020
Commodity	Futures Contract	Component Index	BCOM
WTI Crude	Light Sweet Crude Oil	Barclays WTI Crude Roll Yield 9M	✓
Brent Crude	Brent Crude	Barclays Brent Crude Roll Yield 9M	✓
Heating Oil	Heating Oil	Barclays Heating Oil Seasonal	✓
Unleaded Gasoline	RBOB Gasoline	Barclays Unleaded Gasoline Roll Yield 9M	✓
Gasoil	Low Sulphur Gasoil	Barclays Gasoil Seasonal	✓
Natural Gas	Henry Hub Natural Gas	Barclays Natural Gas Seasonal	✓
Aluminium	Aluminium (High Grade Primary)	Barclays Aluminium Roll Yield 9M	✓
US Copper (US)	Copper (Grade 1)	Barclays US Copper Roll Yield 9M	✓
Nickel	Nickel (Primary)	Barclays Nickel Roll Yield 9M	✓
Zinc	Zinc (Special High Grade)	Barclays Zinc Roll Yield 9M	✓
Gold	Gold	Barclays Gold Nearby	✓
Silver	Silver	Barclays Silver Nearby	✓
Corn	Corn	Barclays Corn Momentum Alpha	✓
Soybeans	Soybeans	Barclays Soybeans Momentum Alpha	✓
Soybean Oil	Soybean Oil	Barclays Soybean Oil Momentum Alpha	✓
Soybean Meal	Soybean Meal	Barclays Soybean Meal Momentum Alpha	✓
Wheat	Wheat	Barclays Wheat Momentum Alpha	✓
Wheat	Hard Red Winter Wheat	Barclays Kansas Wheat Momentum Alpha	✓
Coffee	Coffee "C"	Barclays Coffee Momentum Alpha	✓
Cotton	Cotton No.2	Barclays Cotton Momentum Alpha	✓
Sugar	Sugar No. 11	Barclays Sugar Momentum Alpha	✓
Lean Hogs	Lean Hogs	Barclays Lean Hogs Momentum Alpha	✓
Live Cattle	Live Cattle	Barclays Live Cattle Momentum Alpha	✓

Index Formula

The Index Formula is amended as follows:

$$\mathbf{ER_t} = \mathbf{ER_{t-1}} \times \left(\mathbf{1} + \mathbf{PR_t} - \boldsymbol{IAR} \times \frac{d}{365}\right)$$

Where:

"**IAR**" means the Index Amendment Rate, equals to 0.13%;

"**d**" means the number of calendar days between index business day t and the immediately preceding index business day; and

All other terms as defined on page 2.

Determination of Target Weights of the Commodity Index

This Commodity Index employs a methodology to allocate to weights that differ from those of the Underlying Index. The formula described below aims to increase weights of the 10 commodities with more backwardated futures curves (as determined by the Backwardation Measure) and to decrease weights of the remaining commodities.

The index holdings of each Futures Contract in the Commodity Index are calculated each month as a function of the Target Weights. The Target Weights are determined as follows.

1. Calculate the uncapped target weight in respect of such Futures Contract for such Observation Date in accordance with the following formula:

$$\mathbf{UTW_{k,t} = Z \times W_{k,t} + (1 - Z) \times \frac{W_{k,t} \times I_{k,t}}{\sum_{k=1}^{N} W_{k,t} \times I_{k,t}}}$$

where:

"Z" means a parameter set at 50%;

"$\mathbf{W_{k,t}}$" means the estimated weight of the Futures Contract k for the Observation Date t in the Underlying Index, calculated as follows:

$$\mathbf{W_{k,t} = \frac{IH_k \times P_{k,t}}{\sum_{i=1}^{N} IH_i \times P_{i,t}}}$$

"$\mathbf{UTW_{k,t}}$" means the uncapped target weight of Futures Contract k for Observation Date t;

"**N**" means the number of Futures Contracts in the index

IH_k and **IH_i** are the Underlying Index holdings of the roll contract for Futures Contract i and k respectively and **P_k** and **P_i** are the corresponding exchange settlement prices;

"$\mathbf{I_{k,t}}$" is an indicator function equal to 1 if, in accordance with the Backwardation Measure (as defined below), the Futures Contract k ranks within the top ten Futures Contracts as of the Observation Date t where each Futures Contract is ranked in descending order;

"**Observation Date**" means the fourth index business day of each month;

"**Backwardation Observation Date**" means in respect of each calendar month the index business day immediately preceding the relevant Observation Date;

"**Backwardation Measure**" means, in respect of a Futures Contract k and a Backwardation Observation Date t, the measure calculated according to the following formula:

$$\mathbf{BKM_{k,t} = \left(\frac{PF_{k,t}}{PB_{k,t}} - 1\right) \times \frac{365}{DB_{k,t} - DF_{k,t}}}$$

where:

"**k**" refers to a Futures Contract;

"**t**" refers to a Backwardation Observation Date;

"$\mathbf{BKM_{k,t}}$" means the Backwardation Measure of Futures Contract k on Backwardation Observation Date t;

"$\mathbf{PF_{k,t}}$" means the closing price of the Front Contract of Futures Contract k on Backwardation Observation Date t;

"$\mathbf{DF_{k,t}}$" is the number of calendar days from and including Backwardation Observation Date t to but excluding the Last Trade Date of the Front Contract of Futures Contract k;

"$\mathbf{PB_{k,t}}$" is the closing price of the Back Contract of Futures Contract k on Backwardation Observation Date t;

"$\mathbf{DB_{k,t}}$" is the number of calendar days from and including Backwardation Observation Date t to but excluding the Last Trade Date of the Back Contract of Futures Contract k;

"Back Contract" means, in respect of a Front Contract of a Futures Contract and a Backwardation Observation Date, the futures contract traded on the relevant exchange as at that Backwardation Observation Date whose delivery month falls closest in time but not after the one year anniversary of the delivery month of that Front Contract and for which the relevant exchange has published a closing price;

"Front Contract" means, in respect of a Futures Contract and a Backwardation Observation Date, the futures contract on the relevant exchange whose Last Trading Date falls after but closest in time to that Backwardation Observation Date;

"Last Trade Date" means, in respect of any Front Contract or Back Contract, the last day that such Front Contract or Back Contract is scheduled to trade on the applicable commodity exchange.

2. Calculate the capped target weights by performing the following process:

    a. Aggregate the uncapped target weights by commodity group (as defined in Figure 1).

    b. The commodity group with the highest weight in the index is capped at 33%, with all remaining commodity groups capped at 19%. With respect to a capped commodity group, any excess weight is redistributed proportionally among the remaining commodities outside capped commodity groups.

    c. If a commodity group contains one commodity, then the target weight of such commodity is equal to the weight of the commodity group.

    d. If a commodity group contains more than one commodity, then the weight of the commodity group is split in proportion to the uncapped target weights.

FIGURE 1

Commodity Groups

Commodity	Commodity Group
Natural Gas	Natural Gas
WTI Crude	Petroleum
Brent Crude	Petroleum
Unleaded Gasoline	Petroleum
Heating Oil	Petroleum
Gasoil	Petroleum
Live Cattle	Live Cattle
Lean Hogs	Lean Hogs
Wheat	Wheats
Kansas Wheat	Wheats
Corn	Corn
Soybeans	Soybeans
Soybean Meal	Soybeans
Soybean Oil	Soybeans
Aluminium	Aluminum
US Copper (US)	Coppers
Zinc	Zinc
Nickel	Nickel
Gold	Gold
Silver	Silver
Sugar	Sugar
Cotton	Cotton
Coffee	Coffee

Source: Barclays

Treatment of New Commodities

If a commodity is added to the Underlying Index, the Index Sponsor will determine the appropriate Component Index by employing the following process:

1. If the new commodity is a precious metal, then the Barclays Nearby single commodity index shall be used.

2. If the new commodity is an industrial metal or energy commodity other than Heating Oil, Natural Gas or Gas Oil, then the Barclays Roll Yield single commodity index shall be used, if the Index Sponsor publishes a Roll Yield single commodity index for such commodity. If the Index Sponsor does not, then the Barclays Nearby single commodity index shall be used.

3. If the new commodity is one of Heating Oil, Natural Gas or Gas Oil, then the Barclays Seasonal single commodity index shall be used, if the Index Sponsor publishes a Seasonal single commodity index for such commodity. If the Index Sponsor does not, then the Barclays Nearby single commodity index shall be used.

4. If the new commodity is an agricultural or livestock commodity, then the Barclays Momentum Alpha single commodity index shall be used, if the Index Sponsor publishes a Momentum Alpha single commodity index for such commodity. If the Index Sponsor does not, then the Barclays Nearby single commodity index shall be used.

5. If the new commodity is a commodity other than a precious metal, industrial metal, energy, agriculture or livestock commodity, then the Barclays Nearby single commodity index shall be used.

If a commodity is added to the Underlying Index, the Index Sponsor will determine the appropriate commodity group by employing the following process:

1. If the new commodity is a component of the Barclays Commodity Index, then the same commodity group as used in the Barclays Commodity Index shall be used.

2. If the new commodity is not a component of the Barclays Commodity Index, then the Index Sponsor will determine the commodity group.

Important Notice

As of 18 June 2021, the daily index levels for each of the Barclays Backwardation Tilt Multi-Strategy Capped Excess Return and Total Return Indices (Tickers in Figure 1) include an Index Amendment Rate equal to 0.13%. Prior to that date, daily index levels for these indices were calculated exclusive of such rate. The historical performance data for these indices available on the Barclays index website (*http://indices.barclays*) has been restated to take into account this 0.13% Index Amendment Rate since their base date (29 February 2000). These changes have been approved by Barclays Index Administration (*Link to notice*).

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