

Guidelines relating the Commodity Leverage Index Family

Version 1.8 dated 21th of December, 2018

Contents

Introduction

1 Index specifications

- 1.1 Short name and ISIN
- 1.2 Initial value
- 1.3 Distribution
- 1.4 Levels and calculation frequency
- 1.5 Decision-making bodies
- 1.6 Publication
- 1.7 Licensing

2 Calculation of the Index

- 2.1 Index formula
- 2.2 Roll Period
- 2.3 Extraordinary adjustment of the Excess Return Index
- 2.4 Reverse split
- 2.5 Termination of an Index

3 Definitions

4 Appendix

- 4.1 Contact data
- 4.2 Calculation of the Index – change in calculation method
- 4.3 Identifiers
- 4.4 Roll schedule
- 4.5 Indicative Settlement Time

This document contains the underlying principles and regulations regarding the structure and operating of the Commodity Leverage Index Family. Solactive AG (the “**Index Sponsor**”) shall make every effort to implement regulations. Solactive AG does not offer any explicit or tacit guarantee or assurance, neither pertaining to the results from the use of the Commodity Leverage Index Family nor the Commodity Leverage Index Family values at any certain point in time nor in any other respect. The Commodity Leverage Index Family is merely calculated and published by Solactive AG and it strives to the best of its ability to ensure the correctness of the calculation. There is no obligation for Solactive AG – irrespective of possible obligations to issuers – to advise third parties, including investors and/or financial intermediaries, of any errors in the Index Family. The publication of the Commodity Leverage Index Family by Solactive AG is no recommendation for capital investment and does not contain any assurance or opinion of Solactive AG regarding a possible investment in a financial instrument based on the Commodity Leverage Index Family.

Introduction

This document is to be used as a guideline with regard to the composition, calculation and management of the Commodity Leverage Index Family. Any changes made to the guideline are initiated by the Committee specified in section 1.5. The Commodity Leverage Index Family is calculated and published by Solactive AG.

1 Index specifications

The Commodity Leverage Index Family consists of 20 Indices. Each Index replicates the performance of a hypothetical investment in an underlying commodity asset taking into account interest rates and according to a specific level of leverage. Each Index is calculated and distributed by Solactive AG.

The details of the Indices and their respective underlyings are presented in Section 4.3.

The Indices are calculated as total return indices and their levels are published in USD.

1.1 Short name and ISIN

The levels of the Indices are distributed under the identifiers stated in Section 4.3.

1.2 Initial value

The Indices are based on 1,000 as of the close of trading on 10th of June 2014 except indices on WTI with leverage 7,-7,10,-10,12 and -12 which are based on 1,000 as of the close of trading on 1st March 2016, indices on Natural Gas with leverage 7 and -7 which are based on 1,000 as of the close of trading on 31st December 2015 and any index with leverage 2 which are based on 1,000 as of the close of trading on 3rd January 2017.

1.3 Distribution

The levels of the Indices are published via the price marketing services of Boerse Stuttgart AG and they are distributed to all affiliated vendors. Each vendor decides on an individual basis as to whether the vendor will distribute/display the levels of the Indices via the vendor's information system(s).

1.4 Levels and calculation frequency

The levels of the Indices are calculated on each Business Day based on the prices of the respective underlying assets. During the times of Live Calculation the Indices are calculated based on the "Most recent prices". The Closing Calculation is conducted based on the settlement price of the respective asset. In case there is no settlement price available during the time of the Closing Calculation, the most recent one is used.

The indices are calculated on every Business Day and on each Calculation Time. The level of each Index is calculated continuously in 1-second intervals during these hours. In the event that data cannot be provided to Reuters or to the pricing services of Boerse Stuttgart AG the Index cannot be distributed.

Any incorrect calculation is adjusted on a retrospective basis.

1.5 Decision-making bodies

A committee (in these Index Guidelines referred to as the "**Committee**" or the "**Index Committee**") composed of staff from Solactive AG is responsible for selecting and weighting the new composition of each Index in accordance with the rules as described in these Index Guidelines. The Committee shall also decide about the implementation of any necessary adjustments to any Index in accordance with any applicable regulations that might affect any product that references such Index.

The Committee shall also decide about the future composition of any Index in the event that any Extraordinary Event occurs.

The Committee shall make all decisions and any amendments to the Index Guidelines on a commercially reasonable basis.

1.6 Publication

All specifications and information relevant for calculating the Indices are made available on the <http://www.solactive.com> web page and sub-pages (or any successor pages thereto).

1.7 Licensing

Licences, if any, to use the Indices as the underlying value for derivative instruments are issued to stock exchanges, banks, financial services providers and investment houses by Solactive AG.

2 Calculation of the Indices

2.1 Index formula

The level on an Index on a Business Day (t) at a Calculation Time (v) is calculated in accordance with the following formula:

$$I(t, v) = I(t-1) \cdot (1 + TBR(t))^{d-1} \cdot \left[\frac{ER(t, v)}{ER(t-1)} + TBR(t) \right]$$

with:

$I(t, v)$ = Index level on Business Day (t) at Calculation Time (v)

$I(t-1)$ = Index level on Business Day (t-1)

$ER(t-1)$ = Excess Return Index level on Business Day (t-1)

d = number of calendar days between Business Day (t-1) (included) and Business Day (t) (excluded)

$TBR(t)$ = treasury bill return on Business Day (t), calculated as follows:

$$TBR(t) = \left[\frac{1}{1 - \frac{91}{360} \cdot TBDR(t-1)} \right]^{\frac{1}{91}} - 1$$

with:

$TBDR(t-1)$ = The 91-day auction high rate for U.S. Treasury Bills

The level on an Excess Return Index on a Business Day (t) at a Calculation Time (v) is calculated in accordance with the following formula:

$$ER(t, v) = \max \left[0; ER(t-1) \cdot \left(1 + L \cdot \left(\frac{UI(t, v)}{UI(t-1)} - 1 \right) \right) \right]$$

L = Leverage Factor, defined for each Index in section 4.3

$UI(t-1)$ = Underlying Index level on Business Day (t-1)

The level on an Underlying Index on a Business Day (t) at a Calculation Time (v) is calculated in accordance with the following formula:

(i) During a Roll Period

$$UI(t, v) = UI(t-1) \cdot \frac{CRW_A(t) \cdot F_A(t, v) + CRW_{NA}(t) \cdot F_{NA}(t, v)}{CRW_A(t) \cdot F_A(t-1) + CRW_{NA}(t) \cdot F_{NA}(t-1)}$$

(ii) Outside a Roll Period

$$UI(t, v) = UI(t-1) \cdot \frac{F_A(t, v)}{F_A(t-1)}$$

with:

$CRW_A(t)$ = Commodity Roll Weight of the Active Contract on Business Day (t)

$CRW_{NA}(t)$ = Commodity Roll Weight of the Next Active Contract on Business Day (t)

$F_A(t, v)$ = price of the Active Contract on Business Day (t) at Calculation Time (v)

$F_{NA}(t, v)$ = price of the Next Active Contract on Business Day (t) at Calculation Time (v)

$F_A(t-1)$ = settlement price of the Active Contract on Business Day (t-1)

$F_{NA}(t-1)$ = settlement price of the Next Active Contract on Business Day (t-1)

2.2 Roll Period

During the Roll Period the Active Contract is rolled over a five day period into the Next Active Contract. The Roll Period starts on the 5th business day of each month and the Commodity Roll Weight of the Active Contract is decreased by 20% after the Fixing Time of each Business Day of the Roll Period starting at 100% while the Commodity Roll Weight of the Next Active Contract is increased by 20% after the Fixing Time of each Business Day of the Roll Period starting at 0%.

The roll schedule of each underlying asset is listed in Section 4.4.

2.3 Extraordinary adjustment of the Excess Return Index

For all indices where

$ABS(L) > 1$ an intraday Restrike Event can take place.

If at any given moment θ during a Business Day (t) an “**Intraday Restrike Event**” takes place, which means the following condition holds:

$$\begin{aligned} \text{(i)} \quad & \text{If } L > 0 \\ & \frac{UI(t, \theta)}{UI(EA_{i-1})} < 1 - EAT \\ \text{(ii)} \quad & \text{If } L < 0 \\ & \frac{UI(t, \theta)}{UI(EA_{i-1})} > 1 + EAT \end{aligned}$$

with

$UI(EA_0) = UI(t-1)$

EAT = Extraordinary adjustment threshold as defined under 4.3 Identifiers

Then such moment θ is deemed to be an “**Intraday Restrike Event Time**” and we define $UI(EA_i)$ as follows:

$$\begin{aligned} \text{(i)} \quad & \text{If } L > 0 \\ & UI(EA_i) = \min_{v \in [\theta, \theta^+]} [UI(t, v)] \\ \text{(ii)} \quad & \text{If } L < 0 \\ & UI(EA_i) = \max_{v \in [\theta, \theta^+]} [UI(t, v)] \end{aligned}$$

and in such case the level on the Excess Return Index shall be calculated in accordance with the following formulae:

$$ER(t, v) = \max \left[0; ER(EA_i) \cdot \left(1 + L \cdot \left(\frac{UI(t, v)}{UI(EA_i)} - 1 \right) \right) \right]$$

With:

$$ER(EA_i) = \max \left[0; ER(t-1) \cdot \left(1 + L \cdot \left(\frac{UI(EA_i)}{UI(t-1)} - 1 \right) \right) \right]$$

And

$$ER(EA_0) = ER(t-1)$$

The period $[\theta, \theta^+]$ is the Intraday Restrike Event Observation Period.

The “**Intraday Restrike Event Observation Period**” is in respect of an Intraday Restrike Event, the period starting on and excluding the Intraday Restrike Event Time and finishing on and including the time falling 15 minutes after the Intraday Restrike Event Time θ .

Where, during such 15 minute period, the Index Sponsor determines that the Exchange is not open for continuous trading, the Intraday Restrike Event Observation Period will be extended to the extent necessary until the Exchange is open for continuous trading for an aggregate period of 15 minutes.

If the Intraday Restrike Event Observation Period would not end by the Fixing Time: (1) such day will not be a Business Day for the purposes of determining any element of the relevant Index, except (a) for the purpose of calculating $ER(EA_i)$ and $UI(EA_i)$ (and the constituent parts thereof) corresponding to the applicable Intraday Restrike Event and (b) for the purpose of calculating $ER(EA_i)$ and $UI(EA_i)$ (and the constituent parts thereof) with respect to any previous Intraday Restrike Event that has occurred on such day, if any; and (2) such Intraday Restrike Event Observation Period shall be extended to the following Business Day to the extent necessary until the Calculation Agent determines that the Exchange are open for continuous trading for an aggregate period of 15 minutes.

For the purpose of determining the Intraday Restrike Event Observation Period only, the Exchange shall not be considered to be open for continuous trading during its closing auction period (if any, as provided under the rules of the Exchange).

2.4 Reverse split

The Index level is reviewed every first Friday of the month.

If the Index level on Business Day (t-1) is below 10, a reverse split is implemented on the 3rd Friday of the same month (or, if such day is not a Business Day, the immediately preceding Business Day). As at the Fixing Time on that day the Index level will be multiplied by 100 and information about the reverse split will be published on Bloomberg and the Solactive website.

2.5 Termination of an Index

If at the Intraday Restrike Event Time the level of the Excess Return Index is calculated as zero, the relevant Excess Return Index and its corresponding Total Return Index are immediately terminated.

The Calculation Agent will announce such termination on its website www.solactive.com as soon as reasonably possible after such Intraday Restrike Event Time.

For clarification, Solactive may terminate indices for other reasons and in accordance with Solactive's policies.

3 Definitions

“Active Contract” means the contract given in the roll schedule under Section 4.4 for the current month.

“Business Day” means a day on which the Exchange is scheduled to be open for trading during its regular trading session.

“Calculation Time” means, in respect of each Business Day and each Index, any time between 3:00 PM CET and the Fixing Time of such Index on such Business Day.

“Closing Calculation” means, in respect of a Business Day, the calculation which takes place at least 15 minutes after the settlement price of the corresponding underlying commodity asset of such Business Day is available.

“Commodity Leverage Index Family” means the family of Indices to which these Index Guidelines apply, as presented in Section 4.3.

“Commodity Roll Weight” means the target weight determined as per Section 2.2.

“Excess Return Index” means the excess return version of an Index, the level of which is determined as per Sections 2.2 and 2.3.

“Exchange” means the Chicago Mercantile Exchange.

“EAT” Extraordinary adjustment threshold as defined under 4.3 Identifiers

“Extraordinary Event” is referring to the case if one or more contracts mentioned in the roll schedule under Section 4.4 are not listed anymore.

“Fixing Time” means, in respect of a Business Day, the time at which the Index Closing Calculation takes place on such Business Day, which is 15 minutes after the settlement price of the corresponding underlying commodity asset of such Business Day is available. As an indication, the Settlement Time in respect of each underlying commodity is provided in Section 4.5.

“Index” means an index which belongs to the Commodity Leverage Index Family and defined in Section 4.3.

“Index Sponsor” means Solactive AG.

“Live Calculation” means the Index calculation that takes place from 3:00 PM CET until the Fixing Time on each Business Day.

“Next Active Contract” means the contract given in the roll schedule under Section 4.4 for the upcoming month.

“Most recent price” is calculated as the arithmetic average of the last available bid, ask and mid price.

“Roll Period” means a roll period as defined in Section 2.2.

“Underlying Index” means, in respect of each Index, the index set out in section 4.3.

4 Appendix

4.1 Contact data

Solactive AG

Guiolettstr. 54

60325 Frankfurt am Main

Germany

Tel.: +49 69 719 160 00

Email: indexing@solactive.com

4.2 Calculation of the Index – change in calculation method

The application by the Index Sponsor of the method described in this document is final and binding. The Index Sponsor shall apply the method described above for the calculation of the Index. However it cannot be excluded that the market environment, supervisory, legal, financial, or tax reasons may require changes to be made to this method. The Index Sponsor may also make changes to the terms and conditions of the Index and the method applied to calculate the Index, which he deems to be necessary and desirable in order to prevent obvious or demonstrable error or to remedy, correct or supplement incorrect terms and conditions. The Index Sponsor will update the guideline on any such modifications or changes and publish it on his website. Despite the modifications and changes, the Index Sponsor will take the appropriate steps to ensure that the calculation method applied is consistent with the method described above.

4.3 Identifiers

Index	Underlying	Underlying Ticker	ISIN	Index RIC	Index Ticker	Leverage Factor	EAT in %
Natural Gas Futures Long Index	Natural Gas	NG	DE000SLA28W9	.GAS1L	GAS1L	1	Not applicable
Natural Gas Futures x2 Leveraged Index	Natural Gas	NG	DE000SLA28V1	.GAS2L	GAS2L	2	40
Natural Gas Futures x3 Leveraged Index	Natural Gas	NG	DE000SLA0GC6	.GAS3L	GAS3L	3	15
Natural Gas Futures x3 short Leveraged Index	Natural Gas	NG	DE000SLA0GD4	.GAS3S	GAS3S	-3	15
Natural Gas Futures x7 Leveraged Index	Natural Gas	NG	DE000SLA2D16	.GAS7L	GAS7L	7	11
Natural Gas Futures x7 short Leveraged Index	Natural Gas	NG	DE000SLA2D24	.GAS7S	GAS7S	-7	11
Silver Futures Long Index	Silver	SI	DE000SLA28T5	.SLVR1L	SLVR1L	1	Not applicable
Silver Futures x2 Leveraged Index	Silver	SI	DE000SLA28S7	.SLVR2L	SLVR2L	2	40
Silver Futures x3 Leveraged Index	Silver	SI	DE000SLA0GJ1	.SLVR3L	SLVR3L	3	15
Silver Futures x3 short Leveraged Index	Silver	SI	DE000SLA0GK9	.SLVR3S	SLVR3S	-3	15
Silver Futures x5 Leveraged Index	Silver	SI	DE000SLA4XW1	.SLVR5L	SLVR5L	5	15
Silver Futures x5 short Leveraged Index	Silver	SI	DE000SLA6XY2	.SLVR5S	SLVR5S	-5	15
Silver Futures x7 Leveraged Index	Silver	SI	DE000SLA2D57	.SLVR7L	SLVR7L	7	11
Silver Futures x7 short Leveraged Index	Silver	SI	DE000SLA2D65	.SLVR7S	SLVR7S	-7	11
WTI Futures Long Index	WTI	CL	DE000SLA0GS2	.OIL1L	OIL1L	1	Not applicable
WTI Futures Short Index	WTI	CL	DE000SLA0GT0	.OIL1S	OIL1S	-1	Not applicable
WTI Futures x2 Leveraged Index	WTI	CL	DE000SLA28Q1	.OIL2L	OIL2L	2	40
WTI Futures x3 Leveraged Index	WTI	CL	DE000SLA0GL7	.OIL3L	OIL3L	3	15
WTI Futures x3 short Leveraged Index	WTI	CL	DE000SLA0GM5	.OIL3S	OIL3S	-3	15
WTI Futures x5 Leveraged Index	WTI	CL	DE000SLA0B77	.OIL5L	OIL5L	5	15

WTI Futures x5 short Leveraged Index	WTI	CL	DE000SLA0B85	.OIL5S	OIL5S	-5	15
WTI Futures x7 Leveraged Index	WTI	CL	DE000SLA1Z52	.OIL7L	OIL7L	7	11
WTI Futures x7 short Leveraged Index	WTI	CL	DE000SLA1Z60	.OIL7S	OIL7S	-7	11
WTI Futures x10 Leveraged Index	WTI	CL	DE000SLA1Z78	.OIL10L	OIL10L	10	8
WTI Futures x10 short Leveraged Index	WTI	CL	DE000SLA1Z86	.OIL10S	OIL10S	-10	8
WTI Futures x12 Leveraged Index	WTI	CL	DE000SLA1Z94	.OIL12L	OIL12L	12	7
WTI Futures x12 short Leveraged Index	WTI	CL	DE000SLA10A3	.OIL12S	OIL12S	-12	7
Gold Futures Long Index	Gold	GC	DE000SLA0GN3	.GOLD1L	GOLD1L	1	Not applicable
Gold Futures short Index	Gold	GC	DE000SLA0GQ6	.GOLD1S	GOLD1S	-1	Not applicable
Gold Futures x2 Leveraged Index	Gold	GC	DE000SLA28Y5	.GOLD2L	GOLD2L	2	40
Gold Futures x3 Leveraged Index	Gold	GC	DE000SLA0GF9	.GOLD3L	GOLD3L	3	15
Gold Futures x3 short Leveraged Index	Gold	GC	DE000SLA0GH5	.GOLD3S	GOLD3S	-3	15
Gold Futures x5 Leveraged Index	Gold	GC	DE000SLA6XW6	.GOLD5L	GOLD5L	5	15
Gold Futures x5 short Leveraged Index	Gold	GC	DE000SLA6XX4	.GOLD5S	GOLD5S	-5	15
Gold Futures x7 Leveraged Index	Gold	GC	DE000SLA2D32	.GOLD7L	GOLD7L	7	11
Gold Futures x7 short Leveraged Index	Gold	GC	DE000SLA2D40	.GOLD7S	GOLD7S	-7	11
Gold Futures x10 Leveraged Index	Gold	GC	DE000SLA0B28	.GOLD10L	GOLD10L	10	8
Gold Futures x10 short Leveraged Index	Gold	GC	DE000SLA0B36	.GOLD10S	GOLD10S	-10	8

4.4 Roll schedule

Contract/Month	1	2	3	4	5	6	7	8	9	10	11	12
Natural Gas	G	H	J	K	M	N	Q	U	V	X	Z	F+
Gold	G	J	J	M	M	Q	Q	Z	Z	Z	Z	G+
Silver	H	H	K	K	N	N	U	U	Z	Z	Z	H+
WTI	G	H	J	K	M	N	Q	U	V	X	Z	F+

A “+” defines a contract of the following year. The following naming convention of the contracts holds:

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

4.5 Indicative Settlement Times

Underlying	Settlement Time EDT/EST
Natural Gas	2:30 pm
Gold	3:45 pm
Silver	3:45 pm
WTI Oil	2:30 pm