

# INDEX GUIDELINE

UBS US Equity Enhanced Call Writing TR Index

Version 1.0

23 May 2024

## TABLE OF CONTENTS

Introduction .....	4
1. Index Specifications .....	5
1.1. Scope of the Index .....	5
1.2. Identifiers and Publication .....	5
1.3. Initial Level of the Index .....	6
1.4. Prices and calculation frequency .....	6
1.5. Licensing.....	6
2. Index Selection .....	7
2.1. Selection of the Index Components .....	7
2.2. Number of Units of the Index Components .....	7
2.2.1. Number of Units of the Call Option .....	7
2.2.2. Number of Units of the Underlying Component .....	8
3. Rebalance .....	10
3.1. Ordinary Rebalance .....	10
3.2. Extraordinary Rebalance .....	10
4. Calculation of the Index .....	11
4.1. Index formula .....	11
4.1.1. Cash Performance.....	11
4.1.2. Total Return Exposure .....	12
4.1.3. Continuing Option Portfolio .....	12
4.1.4. New Option Portfolio .....	12
4.1.5. Cash Component Value .....	13
4.1.6. Index Performance .....	13
4.1.7. Index Rebalancing Cost .....	14
4.1.8. Index Entry/Exit Cost .....	15
4.1.9. Option Transaction Cost .....	15
4.1.10. Underlying Component Transaction Cost.....	16
4.1.11. Vega .....	16
4.1.12. OTC Option Price.....	17
4.1.13. Listed Option Implied Volatility .....	18
4.1.14. Option Universe .....	18
4.1.15. Black Option Price .....	19
4.1.16. OTC Option Implied Volatility .....	20

## INDEX GUIDELINE

4.1.17.	Implied Forward .....	22
4.1.18.	Discount Rate.....	23
4.1.19.	Day Count Fraction .....	24
4.2.	Accuracy .....	24
4.3.	Recalculation.....	24
4.4.	Market Disruption .....	24
5.	Miscellaneous.....	25
5.1.	Discretion .....	25
5.2.	Methodology Review.....	25
5.3.	Changes in Calculation Method.....	25
5.4.	Termination .....	25
5.5.	Index Committee .....	26
6.	Definitions.....	27
7.	Versioning .....	29
	Appendix.....	30
	Contact.....	32

## INTRODUCTION

This document (the "**GUIDELINE**") is to be used as a guideline with regard to the composition, calculation and maintenance of the UBS US Equity Enhanced Call Writing TR Index (the "**INDEX**"). Any amendments to the rules made to the GUIDELINE are approved by the INDEX COMMITTEE specified in Section 5.5. The INDEX is owned by UBS AG London Branch ("**INDEX OWNER**"). The INDEX is calculated, administered and published by Solactive AG ("**SOLACTIVE**") assuming the role as administrator (the "**INDEX ADMINISTRATOR**") under the Regulation (EU) 2016/1011 (the "**BENCHMARK REGULATION**" or "**BMR**") from the **INDEX TRANSFER DATE**. The name "Solactive" is trademarked.

*The text uses defined terms which are formatted with "SMALL CAPS". Such Terms shall have the meaning assigned to them as specified in Section 6 (Definitions).*

**The GUIDELINE and the policies and methodology documents referenced herein contain the underlying principles and rules regarding the structure and operation of the INDEX. The INDEX ADMINISTRATOR does not offer any explicit or tacit guarantee or assurance, neither pertaining to the results from the use of the INDEX nor the level of the INDEX at any certain point in time nor in any other respect. The INDEX ADMINISTRATOR strives to the best of its ability to ensure the correctness of the calculation. There is no obligation for The INDEX ADMINISTRATOR – irrespective of possible obligations to issuers – to advise third parties, including investors and/or financial intermediaries, of any errors in the INDEX. The publication of the INDEX by The INDEX ADMINISTRATOR does not constitute a recommendation for capital investment and does not contain any assurance or opinion of The INDEX ADMINISTRATOR regarding a possible investment in a financial instrument based on this INDEX.**

# 1. INDEX SPECIFICATIONS

## 1.1. SCOPE OF THE INDEX

Category	Description
Asset Class	Equity
Strategy	<p>The INDEX is a rules-based strategy which notionally enters into positions in call OTC options referencing the UNDERLYING INDEX, of 15 business days expiration dates and 103% strike within its portfolio and notionally holds the position until the respective expiration date. The index also includes (if applicable) long notional positions in the UNDERLYING COMPONENT.</p> <p>The INDEX is calculated on a notional basis. The investment exposure provided by the INDEX to the OTC options is purely synthetic and an investor in the INDEX will have no rights in respect of any of OTC option. For the avoidance of doubt, any reference herein to OTC options being "entered into" is purely on a notional basis.</p>
Regional Allocation	North America

Table 1: Index Overview

## 1.2. IDENTIFIERS AND PUBLICATION

The INDEX is published under the following identifiers.

Name	ISIN	Currency	Type	RIC	BBG Ticker
UBS US Equity Enhanced Call Writing TR Index	DE000SL0L524	USD	Total Return	.CSEAUCET	CSEAUCET Index

Table 2: Index Identifiers

The INDEX is published on the website of the INDEX ADMINISTRATOR ([www.solactive.com](http://www.solactive.com)) and is, in addition, available via the price marketing services of Boerse Stuttgart GmbH and may be distributed to all of its affiliated vendors. Each vendor decides on an individual basis as to whether it will distribute or display the INDEX via its information systems.

Any publication in relation to the INDEX (e.g., notices, amendments to the GUIDELINE) will be available at the website of the INDEX ADMINISTRATOR: <https://www.solactive.com/news/announcements/>.

Prior to the INDEX TRANSFER DATE, UBS US Equity Enhanced Call Writing TR Index was named Credit Suisse US Equity Enhanced Call Writing TR Index and it was sponsored, calculated and administered by Credit Suisse International and documented under the Index Specific Rules for the Credit Suisse Enhanced Collar Index Series dated as of 20 September 2018 and amended on 28 May 2019.

### 1.3. INITIAL LEVEL OF THE INDEX

The INDEX is initialized on the INDEX TRANSFER DATE using an initial portfolio, as set forth in the Appendix, and the Index Level as of the CALCULATION DAY immediately preceding the INDEX TRANSFER DATE. Historical values from the INDEX TRANSFER DATE, will be recorded in accordance with Article 8 of the BMR. Levels of the INDEX published prior to the INDEX TRANSFER DATE have been calculated by Credit Suisse International.

### 1.4. PRICES AND CALCULATION FREQUENCY

The level of the INDEX is calculated in respect of each CALCULATION DAY  $t$  and is published at 10:00 a.m. CET on the CALCULATION DAY immediately following CALCULATION DAY  $t$ .

### 1.5. LICENSING

Licenses to use the INDEX as the underlying value for financial instruments, investment funds and financial contracts may be issued to stock exchanges, banks, financial services providers and investment houses by the INDEX OWNER.

## 2. INDEX SELECTION

### 2.1. SELECTION OF THE INDEX COMPONENTS

In respect to each CALCULATION DAY  $t$ , the notional portfolio generated by the index strategy is subject to the features included in the index according to Table 4: Index Parameters and comprises:

- Short notional positions in OTC call options on the UNDERLYING INDEX, with respect to an Index where Option Included specified in Table 4 includes 'Call' . The OTC Call Option is entered into with the following properties:
  - o TRADE DATE  $T_Q$  of the Call OPTION  $Q_{c,m,t}^k$  is CALCULATION DAY  $t$
  - o EXPIRATION DATE  $m$  of the Call OPTION  $Q_{c,m,t}^k$  entered into on CALCULATION DAY  $t$  is the fifteenth CALCULATION DAY following CALCULATION DAY  $t$
  - o The STRIKE PRICE  $K_{c,t}$  of the call OPTION  $Q_{c,m,t}^k$  entered on CALCULATION DAY  $t$  is calculated in accordance with the following formula:

$$K_{c,t} = \text{round}(Cap_c \times UI_{t-1})$$

With:

**round:** means the FUNCTION rounding any number to an integer value

**Cap<sub>c</sub>:** means 103 percent

**UI<sub>t-1</sub>:** means the UNDERLYING INDEX CLOSING LEVEL in respect of the CALCULATION DAY immediately preceding CALCULATION DAY  $t$

- With respect to the index where Underlying Component is specified in Table 4, Long notional positions in the UNDERLYING COMPONENT, in an amount determined in Section 2.2.2 below.
- A notional cash component representing a funded deposit accruing interest at a CASH RATE. The cash component is entered into for the respective Index with the properties as defined in the Table 5: Index Cash Component Parameters

### 2.2. NUMBER OF UNITS OF THE INDEX COMPONENTS

In relation to CALCULATION DAY  $t$  that is also the INDEX START DATE  $t_0$ , the level of the INDEX on the INDEX START DATE  $t_0$  should be used in the calculation of the Number of Units below.

#### 2.2.1. Number of Units of the Call Option

In relation to any CALCULATION DAY  $t$ , the NUMBER OF UNITS  $Units_t^{C_m^k}$  in respect of each Call Option Contract  $C_m^k$  will be calculated with the following formulae:

- With respect to any Call Option Contract with Option Expiration Date  $m$  falling on CALCULATION DAY  $t$

$$Units_t^{C_{m=t}^k} = 0$$

- With respect to any Call Option Contract with Option Expiration Date  $m$  falling 15 Calculation Days following CALCULATION DAY  $t$ , and with Option Strike  $K_{c,t}$  :
  - o Where Scaling specifies "Notional" in Table 4: Index Parameters Error! Reference source not found.:

$$- Units_t^{C_{m=t+15}^{k=K_{c,t}}} = - \frac{1000}{UI_{t-1} \times 15}$$

- o Else, where Scaling specifies "Index" in Table 4: Index Parameters:

$$Units_t^{C_{m=t+15}^{k=K_{c,t}}} = - \frac{Index_{t-1}^{TR}}{UI_{t-1} \times 15}$$

- With respect to any other Call Option Contract:

$$Units_t^{C_m^k} = Units_{t-1}^{C_m^k}$$

With:

$C_{m=t}^k$ : means the Call Option Contract  $C_m^k$  with Option Expiration Date falling on CALCULATION DAY  $t$

$C_{m=t+15}^{k=K_{c,t}}$ : means the Call Option Contract  $C_m^k$  with Option Expiration Date falling 15 Calculation Days following CALCULATION DAY  $t$ , and with Option Strike  $K_{c,t}$

$Index_{t-1}^{TR}$ : means the Total Return level of the INDEX in respect of the CALCULATION DAY immediately preceding CALCULATION DAY  $t$

$UI_{t-1}$ : means the UNDERLYING INDEX CLOSING LEVEL in respect of the CALCULATION DAY immediately preceding CALCULATION DAY  $t$

### 2.2.2. Number of Units of the Underlying Component

In relation to a CALCULATION DAY  $t$ , the NUMBER OF UNITS  $Units_t^{UC}$  in respect of UNDERLYING COMPONENT  $UC$  is calculated in accordance with the following formula:

- Where Underlying Component is specified in Table 4: Index Parameters:

$$Units_t^{UC} = \frac{Index_{t-1}^{TR}}{UCV_{t-1}^{UC}}$$

With:

$Index_{t-1}^{TR}$ : means the Total Return level of the INDEX in respect of the CALCULATION DAY immediately preceding CALCULATION DAY  $t$

$UCV_{t-1}^{UC}$ : means the UNDERLYING COMPONENT VALUE of the UNDERLYING COMPONENT  $UC$  in respect of the CALCULATION DAY immediately preceding CALCULATION DAY  $t$





## 3. REBALANCE

### 3.1. ORDINARY REBALANCE

No ordinary rebalance takes place.

### 3.2. EXTRAORDINARY REBALANCE

No extraordinary rebalance takes place.

## 4. CALCULATION OF THE INDEX

### 4.1. INDEX FORMULA

The Total Return Index level  $Index_t^{TR}$  is calculated in accordance with the following formula:

- In relation to the INDEX START DATE DAY  $t_0$ :

$$Index_{t_0}^{TR} = 1,000$$

- In relation to any following CALCULATION DAY  $t$ :

$$Index_t^{TR} = Index_{t-1}^{TR} + CashPerf_t + Perf_t - RC_t - Index_{t-1}^{TR} \times Fee \times \frac{DC_{t-1,t}}{Basis}$$

With:

$Index_{t-1}^{TR}$ : means the Total Return level of the INDEX in respect of the CALCULATION DAY immediately preceding CALCULATION DAY  $t$

$CashPerf_t$ : the CASH PERFORMANCE in respect of CALCULATION DAY  $t$

$Perf_t$ : the INDEX PERFORMANCE in respect of CALCULATION DAY  $t$

$RC_t$ : the INDEX REBALANCING COST in respect of CALCULATION DAY  $t$

$Fee$ : the annual INDEX FEE

$DC_{t-1,t}$ : means the number of CALENDAR DAYS in the period commencing on (and including) CALCULATION DAY  $t-1$  and ending on (but excluding) CALCULATION DAY  $t$

$Basis$ : the INDEX FEE BASIS

$CC_t$ : means the CASH COMPONENT VALUE in respect of CALCULATION DAY  $t$

$CC_{t-1}$ : means the CASH COMPONENT VALUE in respect of the CALCULATION DAY immediately preceding CALCULATION DAY  $t$

#### 4.1.1. Cash Performance

In relation to CALCULATION DAY  $t$ , the CASH PERFORMANCE  $CashPerf_t$  is calculated in accordance with the following formula:

$$CashPerf_t = [Index_{t-1}^{TR} - TRE_{t-1}] \times \left( \frac{CC_t}{CC_{t-1}} - 1 \right)$$

With:

$Index_{t-1}^{TR}$ : means the Total Return level of the INDEX in respect of the CALCULATION DAY immediately preceding CALCULATION DAY  $t$

$TRE_{t-1}$ : means the TOTAL RETURN EXPOSURE in respect of the CALCULATION DAY immediately preceding CALCULATION DAY  $t$

$CC_t$ : means the CASH COMPONENT VALUE in respect of CALCULATION DAY t

$CC_{t-1}$ : means the CASH COMPONENT VALUE in respect of the CALCULATION DAY immediately preceding CALCULATION DAY t

#### 4.1.2. Total Return Exposure

In relation to CALCULATION DAY t, the TOTAL RETURN EXPOSURE  $TRE_t$  is calculated in accordance with the following formula:

$$TRE_t = \sum_{Q_m^k \in COP_t} Units_t^{Q_m^k} \times PX_t^{Q_m^k} \times FX_t^{CCY_{Q_m^k}} + (1_{RT_{UC}=TotalReturn} \times Units_t^{UC} \times UCV_t^{UC} \times FX_t^{CCY_{UC}})$$

$COP_t$ : each Option  $Q_m^k$  comprising the CONTINUING OPTION PORTFOLIO in respect of CALCULATION DAY t

$Units_t^{Q_m^k}$ : the NUMBER OF UNITS in respect of OPTION  $Q_m^k$  on CALCULATION DAY t

$PX_t^{Q_m^k}$ : the PRICE of OPTION  $Q_m^k$  in respect of CALCULATION DAY t

$FX_t^{CCY_{Q_m^k}}$ : the INDEX CURRENCY /  $CCY_{Q_m^k}$  FX Rate (quoted as the number of INDEX CURRENCY per 1 unit of  $CCY_{Q_m^k}$ ) in respect of CALCULATION DAY t (or if such rate is not available the immediately preceding FX Rate)

$CCY_{Q_m^k}$ : OPTION CURRENCY of OPTION  $Q_m^k$  as specified in the Table 4: Index Parameters

$Units_t^{UC}$ : the NUMBER OF UNITS in respect of UNDERLYING COMPONENT  $UC$  on CALCULATION DAY t

$UCV_t^{UC}$ : means the UNDERLYING COMPONENT VALUE in respect of UNDERLYING COMPONENT  $UC$  on CALCULATION DAY t

$1_{RT_{UC}=TotalReturn}$ : 1 where the Asset Type of the UNDERLYING COMPONENT  $UC$  is Total Return, and 0 otherwise

$FX_t^{CCY_{UC}}$ : the INDEX CURRENCY /  $CCY_{UC}$  FX Rate (quoted as the number of INDEX CURRENCY per 1 unit of  $CCY_{UC}$ ) in respect of CALCULATION DAY t (or if such rate is not available the immediately preceding FX Rate)

$CCY_{UC}$ : Underlying Component Currency of UNDERLYING COMPONENT  $UC$  as specified in Table 4: Index Parameters

#### 4.1.3. Continuing Option Portfolio

In relation to CALCULATION DAY t, the CONTINUING OPTION PORTFOLIO  $COP_t$  is the set comprising of those OPTIONS  $Q_m^k$  that each satisfy the following criteria:

- TRADE DATE ( $T_Q$ ) in respect of OPTION  $Q_m^k$  falls on or prior to CALCULATION DAY t
- EXPIRATION DATE ( $m$ ) in respect of OPTION  $Q_m^k$  falls after CALCULATION DAY t

#### 4.1.4. New Option Portfolio

In relation to CALCULATION DAY t, the NEW OPTION PORTFOLIO  $NOP_t$  is the set comprising of those OPTIONS  $Q_m^k$  that each satisfy the following criteria:

- TRADE DATE ( $T_Q$ ) in respect of OPTION  $Q_m^k$  falls on CALCULATION DAY t

#### 4.1.5. Cash Component Value

The Cash Component Value  $CC_t$  is calculated according to the following formula:

- In relation to the INDEX START DATE DAY  $t_0$ :

$$CC_{t_0} = 1,000$$

- In relation to any following CALCULATION DAY t:

$$CC_t = CC_{t-1} \times \left[ 1 + (Cash\ Rate_{t-1} + Cash\ Spread) \times \frac{DC_{t-1,t}}{Cash\ Basis} \right]$$

With:

$CC_{t-1}$ : means the CASH COMPONENT VALUE in respect of the CALCULATION DAY immediately preceding CALCULATION DAY t

$CashRate_{t-1}$ : means the CASH RATE, as defined in Table 5: Index Cash Component Parameters, on the CALCULATION DAY immediately preceding CALCULATION DAY t (or if such rate is not available, the prevailing rate published as of the CALCULATION DAY immediately preceding CALCULATION DAY t)

$Cash\ Spread$ : the CASH SPREAD as defined in Table 5: Index Cash Component Parameters

$Cash\ Basis$ : the CASH BASIS as defined in Table 5: Index Cash Component Parameters

$DC_{t-1,t}$ : means the number of CALENDAR DAYS in the period commencing on (and including) CALCULATION DAY t-1 and ending on (but excluding) CALCULATION DAY t

#### 4.1.6. Index Performance

In relation to CALCULATION DAY t, the INDEX PERFORMANCE  $Perf_t$  is calculated in accordance with the following formula:

$$Perf_t = \sum_{Q_m^k \in COP_{t-1}} Units_{t-1}^{Q_m^k} \times \left( PX_t^{Q_m^k} \times FX_t^{CCY_{Q_m^k}} - PX_{t-1}^{Q_m^k} \times FX_{t-1}^{CCY_{Q_m^k}} \right) + Units_{t-1}^{UC} \times \left( UCV_t^{UC} \times FX_t^{CCY_{UC}} - UCV_{t-1}^{UC} \times FX_{t-1}^{CCY_{UC}} \right)$$

With:

$COP_{t-1}$ : each Option  $Q_m^k$  comprising the CONTINUING OPTION PORTFOLIO in respect of CALCULATION DAY immediately preceding CALCULATION DAY t

$Units_{t-1}^{Q_m^k}$ : the NUMBER OF UNITS in respect of OPTION  $Q_m^k$  on CALCULATION DAY immediately preceding CALCULATION DAY t

$PX_t^{Q_m^k}$ : the PRICE of OPTION  $Q_m^k$  in respect of CALCULATION DAY t

$PX_{t-1}^{Q_m^k}$ : the PRICE of OPTION  $Q_m^k$  in respect of CALCULATION DAY immediately preceding CALCULATION DAY t

$FX_t^{CCY_{Q_m^k}}$ : the INDEX CURRENCY /  $CCY_{Q_m^k}$  FX Rate (quoted as the number of INDEX CURRENCY per 1 unit of  $CCY_{Q_m^k}$ ) in respect of CALCULATION DAY t (or if such rate is not available the immediately preceding FX Rate)

$CCY_{Q_m^k}$ : OPTION CURRENCY of OPTION  $Q_m^k$  as specified in Table 4: Index Parameters

$Units_{t-1}^{UC}$ : the NUMBER OF UNITS in respect of UNDERLYING COMPONENT  $UC$  on CALCULATION DAY immediately preceding CALCULATION DAY t

$UCV_t^{UC}$ : means the UNDERLYING COMPONENT VALUE in respect of UNDERLYING COMPONENT  $UC$  on CALCULATION DAY t

$UCV_{t-1}^{UC}$ : means the UNDERLYING COMPONENT VALUE in respect of UNDERLYING COMPONENT  $UC$  on CALCULATION DAY immediately preceding CALCULATION DAY t

$FX_t^{CCY_{UC}}$ : the INDEX CURRENCY /  $CCY_{UC}$  FX Rate (quoted as the number of INDEX CURRENCY per 1 unit of  $CCY_{UC}$ ) in respect of CALCULATION DAY t (or if such rate is not available the immediately preceding FX Rate)

$CCY_{UC}$ : Underlying Component Currency of UNDERLYING COMPONENT  $UC$  as specified in Table 4: Index Parameters

#### 4.1.7. Index Rebalancing Cost

The INDEX REBALANCING COST is calculated in accordance with the following formula:

- In relation to the INDEX START DATE DAY  $t_0$ :

$$RC_{t_0} = 0$$

- In relation to any following CALCULATION DAY t:

$$RC_t = \sum_{Q_m^k \in COP_t} \left| Units_t^{Q_m^k} - Units_{t-1}^{Q_m^k} \right| \times TC_t^{Q_m^k} \times FX_t^{CCY_{Q_m^k}} \\ + \left| Units_t^{UC} - Units_{t-1}^{UC} \right| \times TC_t^{UC} \times FX_t^{CCY_{UC}} \\ + \left| Units_t^{UC} \right| \times TC_t^{UC} \times FX_t^{CCY_{UC}} \times N_{t-1,t}^{Roll_{UC}}$$

With:

$COP_t$ : each Option  $Q_m^k$  comprising the CONTINUING OPTION PORTFOLIO in respect of CALCULATION DAY t

$Units_t^{Q_m^k}$ : the NUMBER OF UNITS in respect of OPTION  $Q_m^k$  on CALCULATION DAY t

$Units_{t-1}^{Q_m^k}$ : the NUMBER OF UNITS in respect of OPTION  $Q_m^k$  on CALCULATION DAY immediately preceding CALCULATION DAY t

$TC_t^{Q_m^k}$ : the TRANSACTION COST of OPTION  $Q_m^k$  in respect of CALCULATION DAY t as defined in Section 4.1.9

$FX_t^{CCY_{Q_m^k}}$ : the INDEX CURRENCY /  $CCY_{Q_m^k}$  FX Rate (quoted as the number of INDEX CURRENCY per 1 unit of  $CCY_{Q_m^k}$ ) in respect of CALCULATION DAY t (or if such rate is not available the immediately preceding FX Rate)

$CCY_{Q_m^k}$ : OPTION CURRENCY of OPTION  $Q_m^k$  as specified in Table 4: Index Parameters

$Units_t^{UC}$ : the NUMBER OF UNITS in respect of UNDERLYING COMPONENT  $UC$  on CALCULATION DAY t

$Units_{t-1}^{UC}$ : the NUMBER OF UNITS in respect of UNDERLYING COMPONENT  $UC$  on CALCULATION DAY immediately preceding CALCULATION DAY t

$TC_t^{UC}$ : means the TRANSACTION COST in respect of UNDERLYING COMPONENT  $UC$  on CALCULATION DAY t as defined in Section 4.1.10

$FX_t^{CCY_{UC}}$ : the INDEX CURRENCY /  $CCY_{UC}$  FX Rate (quoted as the number of INDEX CURRENCY per 1 unit of  $CCY_{UC}$ ) in respect of CALCULATION DAY t (or if such rate is not available the immediately preceding FX Rate)

$CCY_{UC}$ : Underlying Component Currency of UNDERLYING COMPONENT  $UC$  as specified in Table 4: Index Parameters

$N_{t-1,t}^{Roll_{UC}}$ : means the number of UNDERLYING COMPONENT ROLL DATES in respect of UNDERLYING COMPONENT  $UC$  that occurred from, and excluding, on CALCULATION DAY t-1 to, and including, CALCULATION DAY t

#### 4.1.8. Index Entry/Exit Cost

The INDEX ENTRY/EXIT COST  $EC_t$  is calculated in accordance with the following formula:

- In relation to any CALCULATION DAY t:

$$EC_t = \sum_{Q_m^k \in COP_t} |Units_t^{Q_m^k}| \times TC_t^{Q_m^k} \times FX_t^{CCY_{Q_m^k}} + |Units_t^{UC}| \times TC_t^{UC} \times FX_t^{CCY_{UC}}$$

With:

$COP_t$ : each Option  $Q_m^k$  comprising the CONTINUING OPTION PORTFOLIO in respect of CALCULATION DAY t

$Units_t^{Q_m^k}$ : the NUMBER OF UNITS in respect of OPTION  $Q_m^k$  on CALCULATION DAY t

$TC_t^{Q_m^k}$ : the TRANSACTION COST of OPTION  $Q_m^k$  in respect of CALCULATION DAY t as defined in Section 4.1.9

$FX_t^{CCY_{Q_m^k}}$ : the INDEX CURRENCY /  $CCY_{Q_m^k}$  FX Rate (quoted as the number of INDEX CURRENCY per 1 unit of  $CCY_{Q_m^k}$ ) in respect of CALCULATION DAY t (or if such rate is not available the immediately preceding FX Rate)

$CCY_{Q_m^k}$ : OPTION CURRENCY of OPTION  $Q_m^k$  as specified in Table 4: Index Parameters

$Units_t^{UC}$ : the NUMBER OF UNITS in respect of UNDERLYING COMPONENT  $UC$  on CALCULATION DAY t

$TC_t^{UC}$ : means the TRANSACTION COST in respect of UNDERLYING COMPONENT  $UC$  on CALCULATION DAY t as defined in Section 4.1.10

$FX_t^{CCY_{UC}}$ : the INDEX CURRENCY /  $CCY_{UC}$  FX Rate (quoted as the number of INDEX CURRENCY per 1 unit of  $CCY_{UC}$ ) in respect of CALCULATION DAY t (or if such rate is not available the immediately preceding FX Rate)

$CCY_{UC}$ : Underlying Component Currency of UNDERLYING COMPONENT  $UC$  as specified in Table 4: Index Parameters

#### 4.1.9. Option Transaction Cost

In relation to OPTION  $Q_{m,t}^k$  and CALCULATION DAY t, the OPTION TRANSACTION COST  $TC_t^{Q_{m,t}^k}$  is calculated in accordance with the following formula:

$$TC_t^{Q_{m,t}^k} = Vega_t^{Q_{m,t}^k} \times Vega\ Charge_t^{Q_{m,t}^k}$$

With:

$Vega_t^{Q_{m,t}^k}$ : the VEGA of Option  $Q_{m,t}^k$  in respect of CALCULATION DAY t

$Vega\ Charge_t^{Q_{m,t}^k}$ : the VEGA CHARGE of Option  $Q_{m,t}^k$  in respect of CALCULATION DAY t as determined for the respective Index depending on the implied volatility of Option  $Q_{m,t}^k$  in accordance with the table below:

Implied Volatility	CSEAU CET Index
	Vega Charge
$\sigma_t^{Q_m^k} < 20\%$	0.5
$20\% \leq \sigma_t^{Q_m^k} < 30\%$	0.6
$30\% \leq \sigma_t^{Q_m^k} < 60\%$	1.0
$\sigma_t^{Q_m^k} \geq 60\%$	3.0

#### 4.1.10. Underlying Component Transaction Cost

In relation to UNDERLYING COMPONENT  $UC$  and CALCULATION DAY t, the UNDERLYING COMPONENT TRANSACTION COST  $TC_t^{UC}$  is calculated in accordance with the following formula:

$$TC_t^{UC} = 0.03\% \times UCV_t^{UC}$$

With:

$TC_t^{UC}$ : means the TRANSACTION COST in respect of UNDERLYING COMPONENT  $UC$  on CALCULATION DAY t

$UCV_t^{UC}$ : means the UNDERLYING COMPONENT VALUE in respect of UNDERLYING COMPONENT  $UC$  on CALCULATION DAY t

#### 4.1.11. Vega

The VEGA of OPTION  $Q_{m,t}^k$  as of CALCULATION DAY t is calculated as follows:



$$Vega_t^{Q_{m,t}^k} = 0.01 \times \sqrt{DCFT_{t,TEQ}} \times F_t^{Q_{m,t}^k} \times \exp\left(-r_t^{Q_{m,t}^k} \times DCFT_{t,m}\right) \times \left( \frac{\exp\left(\frac{-d_1\left(F_t^{Q_{m,t}^k}, k, t, m, \sigma_t^{Q_{m,t}^k}\right)^2}{2}\right)}{\sqrt{2 \times \pi}} \right)$$

Where:

$$d_1\left(F_t^{Q_{m,t}^k}, k, t, m, \sigma_t^{Q_{m,t}^k}\right) = \frac{\log\left(\frac{F_t^{Q_{m,t}^k}}{k}\right) + \frac{\sigma_t^{Q_{m,t}^k, 2}}{2} \times DCFT_{t,m}}{\sigma_t^{Q_{m,t}^k} \times \sqrt{DCFT_{t,m}}}$$

With:

$\sigma_t^{Q_{m,t}^k}$ : the Implied Volatility as of CALCULATION DAY t in relation to OPTION  $Q_{m,t}^k$  as defined in Section 4.1.16

$F_t^{Q_{m,t}^k}$ : the Implied Forward as of CALCULATION DAY t in relation to OPTION  $Q_{m,t}^k$  as defined in Section 4.1.17

$r_t^{Q_{m,t}^k}$ : the Discount Rate as of CALCULATION DAY t in relation to OPTION  $Q_{m,t}^k$  as defined in Section 4.1.18

$k$ : The STRIKE PRICE of OPTION  $Q_{m,t}^k$ .

$DCFT_{t,m}$ : The DAY COUNT FRACTION in respect to EXPIRATION DATE  $m$  of OPTION  $Q_{m,t}^k$  as of CALCULATION DAY t.

$\log(\cdot)$ : The NATURAL LOGARITHM FUNCTION

$\exp(\cdot)$ : EXPONENTIAL FUNCTION to the Basis of Euler's number  $e$ .

#### 4.1.12. OTC Option Price

The PRICE  $PX_t^{Q_{m,t}^k}$  of OPTION  $Q_{m,t}^k$  as of CALCULATION DAY t is calculated in accordance with the following formula:

- In relation to the any CALCULATION DAY t up to, and excluding, the Option Expiration Date  $m$

$$PX_t^{Q_{m,t}^k} = BlackOptionPrice\left(OptionType, F_t^{Q_{m,t}^k}, r_t^{Q_{m,t}^k}, k, t, m, \sigma_t^{Q_{m,t}^k}\right)$$

- In relation to the Option Expiration Date  $m$ :

$$PX_t^{Q_{m,t}^k} = \begin{cases} \max(0, k - S_m) & \text{if type of Option } Q_{m,t}^k \text{ is Put} \\ \max(0, S_m - k) & \text{if type of Option } Q_{m,t}^k \text{ is Call} \end{cases}$$

With:

**BlackOptionPrice** ( $OptionType, F_t^{Q_{m,t}^k}, r_t^{Q_{m,t}^k}, k, t, m, \sigma_t^{Q_{m,t}^k}$ ): the BLACK OPTION PRICE of OPTION  $Q_{m,t}^k$  as of CALCULATION DAY t as defined in Section 4.1.14

$\sigma_t^{Q_{m,t}^k}$ : the Implied Volatility as of CALCULATION DAY t in relation to OPTION  $Q_{m,t}^k$  as defined in Section 4.1.16

$F_t^{Q_{m,t}^k}$ : the Implied Forward as of CALCULATION DAY t in relation to OPTION  $Q_{m,t}^k$  as defined in Section 4.1.17

$r_t^{Q_{m,t}^k}$ : the Discount Rate as of CALCULATION DAY t in relation to OPTION  $Q_{m,t}^k$  as defined in Section 4.1.18

**Max**: means the MAXIMUM FUNCTION

$S_m$ : the UNDERLYING SETTLEMENT INDEX LEVEL as of EXPIRATION DATE  $m$

$k$ : the STRIKE PRICE of OPTION  $Q_{m,t}^k$

$m$ : the of EXPIRATION DATE of OPTION  $Q_{m,t}^k$

#### 4.1.13. Listed Option Implied Volatility

The Listed Option Implied Volatility in relation to a LISTED OPTION  $O_{m,t}^k$  with strike  $k$  and maturity  $m$  on any CALCULATION DAY t is calculated as the implied volatility  $\sigma_t^{O_{m,t}^k}$  for which the Black Price for such option matches the LISTED OPTION Mid Price:

$$Mid_t^{O_{m,t}^k} = BlackOptionPrice \left( OptionType, F_t^{O_{m,t}^k}, r_t^{O_{m,t}^k}, k, t, m, \sigma \right)$$

With:

$Mid_t^{O_{m,t}^k}$ : The average of the BID and ASK PRICE of LISTED OPTION  $O_{m,t}^k$  on CALCULATION DAY t as defined in Section 6: Definitions

**BlackOptionPrice**: The Black Option Price Function as determined in accordance with Section 4.1.15

**OptionType**: The type of LISTED OPTION  $O_{m,t}^k$ , where type can be either Put or Call

$F_t^{O_{m,t}^k}$ : IMPLIED FORWARD of LISTED OPTION  $O_{m,t}^k$  as of CALCULATION DAY t.

$r_t^{O_{m,t}^k}$ : The DISCOUNT RATE in relation to LISTED OPTION  $O_{m,t}^k$  as of CALCULATION DAY t

If no such solution exists, then the Implied Volatility of the LISTED OPTION  $O_{m,t}^k$  is set to the Implied Volatility of the LISTED OPTION with the next closest strike that is nearer to the UNDERLYING INDEX LEVEL.

The Listed Option Implied Volatility is rounded to 5 d.p.

#### 4.1.14. Option Universe

With respect to the interpolation of options, the following listed options are used (the LISTED OPTION UNIVERSE, and each a LISTED OPTION or OPTION CONTRACT):

- Weekly expiring options for interpolations on OTC Options on the UNDERLYING INDEX
- Monthly expiring options for interpolations on OTC Options on the UNDERLYING INDEX

- Only options where bid and ask prices exist are included
  - o Options with a missing BID PRICE, and an ASK PRICE lower or equal to 0.1 in OPTION CURRENCY will be added to the Option Universe with a bid equal to 0.
  - o With respect to options with a strike lower or equal to 80% of the UNDERLYING INDEX CLOSING LEVEL with respect CALCULATION DAY t , only options where the strike is a multiple of 50 in OPTION CURRENCY will be selected
- With respect to CALCULATION DAY t, only options with maturities falling after CALCULATION DAY t are included
- Only options with maturities where an At-The-Money Strike can be identified
- Only options with maturities where at least two different strikes are available for each option type (Call or Put).

With respect to expiry dates where both a monthly and a weekly option expire, the weekly option will be selected.

#### 4.1.15. Black Option Price

The Black Option Price is calculated in relation to any LISTED OPTION  $O_{m,t}^k$  on any CALCULATION DAY t in accordance with the following formula:

$$\begin{aligned} \text{BlackOptionPrice(Put, } F, r, k, t, m, \sigma) & \\ &= \exp(-r \times DCFT_{t,m}) \\ &\times (k \times IN(-d_2(F, r, k, t, m, \sigma)) - F \times IN(-d_1(F, r, k, t, m, \sigma))) \end{aligned}$$

$$\begin{aligned} \text{BlackOptionPrice(Call, } F, r, k, t, m, \sigma) & \\ &= \exp(-r \times DCFT_{t,m}) \\ &\times (F \times IN(d_1(F, r, k, t, m, \sigma)) - k \times IN(d_2(F, r, k, t, m, \sigma))) \end{aligned}$$

- Where:

$$d_1(F, r, k, t, m, \sigma) = \frac{\log\left(\frac{F}{k}\right) + \frac{\sigma^2}{2} \times DCFT_{t,m}}{\sigma \times \sqrt{DCFT_{t,m}}}$$

and

$$d_2(F, r, k, t, m, \sigma) = d_1(F, r, k, t, m, \sigma) - \sigma \times \sqrt{DCFT_{t,m}}$$

With:

$DCFT_{t,m}$ : The DAY COUNT FRACTION in respect to EXPIRATION DATE  $m$  of LISTED OPTION  $O_{m,t}^k$  as of CALCULATION DAY t.

$\exp(\cdot)$ : EXPONENTIAL FUNCTION to the Basis of Euler's number  $e$ .

$IN(\cdot)$ : CUMULATIVE DISTRIBUTION FUNCTION of the Standard Normal Distribution

$\log(\cdot)$ : The NATURAL LOGARITHM FUNCTION

#### 4.1.16. OTC Option Implied Volatility

The OTC Option Implied Volatility to be used to interpolate OTC Option prices will be calculated using the following two-step approach:

- Step 1: Select the strikes and maturities of LISTED OPTIONS to be used for volatility interpolation
- Step 2: Where the strike of the OTC Option is not the strike of LISTED OPTION, the implied volatility of the OTC Option for such strike will be interpolated using the implied volatilities of the two LISTED OPTIONS with strikes closest to the strike of the OTC Option; and
- Step 3: Where the maturity of the OTC Option is not the maturity of a LISTED OPTION, the implied volatility of the OTC Option for such maturity will be interpolated from the implied volatilities of the two LISTED OPTIONS with maturities closest to the maturity of the OTC Option, using (if necessary) the implied volatility interpolated under step 2.

##### 4.1.16.1. Selecting Listed Options for Interpolation

In order to calculate the OTC Option Implied Volatility, up to four listed options are required:

Maturity Selection

- Where the maturity of OTC Option  $OTC_{m,t}^k$  is equal to the maturity of a LISTED OPTION, only one maturity is selected which is the same as the maturity of the OTC Option (i.e.,  $m=m_1=m_2$ );
- Where the maturity of OTC Option  $OTC_{m,t}^k$  is lower than any maturity of a LISTED OPTION, the two shortest maturities of LISTED OPTIONS will be selected (i.e.,  $m < m_1 < m_2$ );
- Where the maturity of OTC Option  $OTC_{m,t}^k$  is higher than any maturity of a LISTED OPTION, the two longest maturities of LISTED OPTIONS will be selected (i.e.,  $m_1 < m_2 < m$ );
- Otherwise, the maturity of (i) the LISTED OPTIONS with the longest maturity less than the maturity  $m$  of the OTC Option ( $m_1$ ), and (ii) the LISTED OPTION with the shortest maturity greater than the maturity  $m$  of the OTC Option ( $m_2$ ) will be selected (i.e.,  $m_1 < m < m_2$ ).

Strike Selection

- With respect to each selected maturity, the forward adjusted strike will be calculated in as follows:

$$\tilde{k} = k \times \frac{F_t^{O_{\tilde{m},t}^k}}{F_t^{OTC_{m,t}^k}}$$

- Where  $\tilde{m}$  is the selected maturity:
  - o Where the strike  $\tilde{k}$  is equal to the strike of an option with maturity  $m$  within the Listed Option Universe, only one strike is selected which is the same as the strike  $k$  (i.e.,  $\tilde{k}_{UP} = \tilde{k}_{LOW}$ )

- Otherwise, the closest two strikes of listed options with maturity  $\tilde{m}$  within the Listed Option Universe ( $\tilde{k}_{UP}$  and  $\tilde{k}_{LOW}$ ) will be selected
- For the second closest strike, in case two strikes are equidistant of  $\tilde{k}$ , interpolation will be prioritized, i.e the furthest of the two from the first closest strike will be selected.

And with:

$F_t^{O_{\tilde{m},t}^k}$ : the IMPLIED FORWARD of Listed Option  $O_{\tilde{m},t}^k$  with maturity  $\tilde{m}$

$F_t^{OTC_{m,t}^k}$ : the IMPLIED FORWARD of OTC Option  $OTC_{m,t}^k$  with maturity  $m$

$k$ : The STRIKE PRICE of OTC Option  $OTC_{m,t}^k$

The following rule shall be added to the Strike Selection:

- With respect to Put Option Contracts:

○ If  $\tilde{k}_{UP} > \tilde{k}_{LOW}$  and  $Mid_t^{O_{\tilde{m},t}^{\tilde{k}_{UP}}} < Mid_t^{O_{\tilde{m},t}^{\tilde{k}_{LOW}}}$  then:

- If  $Mid_t^{O_{\tilde{m},t}^{\tilde{k}_{LOW}}} \leq \$0.35$  then:  $Mid_t^{OTC_{m,t}^k} = 0$ , and  $\sigma_t^{OTC_{m,t}^k} = 0$
- Else: The option with the strike furthest away from  $\tilde{k}$  shall be removed and the Strike Selection process repeated. In case such ATM spot level is equidistant from the two nearest strikes, the lowest strike will be removed.

- With respect to Call Option Contracts:

○ If  $\tilde{k}_{UP} > \tilde{k}_{LOW}$  and  $Mid_t^{O_{\tilde{m},t}^{\tilde{k}_{UP}}} > Mid_t^{O_{\tilde{m},t}^{\tilde{k}_{LOW}}}$  then:

- If  $Mid_t^{O_{\tilde{m},t}^{\tilde{k}_{UP}}} \leq \$0.35$  then:  $Mid_t^{OTC_{m,t}^k} = 0$ , and  $\sigma_t^{OTC_{m,t}^k} = 0$
- Else: The option with the strike furthest away from  $\tilde{k}$  shall be removed and the Strike Selection process repeated. In case such ATM spot level is equidistant from the two nearest strikes, the highest strike will be removed.

#### 4.1.16.2. Estimating the Implied Volatility for a given Maturity

In relation to each selected maturity  $\tilde{m}$  and strike  $\tilde{k}$ , the volatility will be calculated as follow:

$$\sigma_t^{O_{\tilde{m},t}^{\tilde{k}}} = \max \left[ 0; \frac{\tilde{k}_{UP} - \tilde{k}}{\tilde{k}_{UP} - \tilde{k}_{LOW}} \times \sigma_t^{O_{\tilde{m},t}^{\tilde{k}_{LOW}}} + \frac{\tilde{k} - \tilde{k}_{LOW}}{\tilde{k}_{UP} - \tilde{k}_{LOW}} \times \sigma_t^{O_{\tilde{m},t}^{\tilde{k}_{UP}}} \right]$$

#### 4.1.16.3. Estimating the Implied Volatility of the OTC Option

From the previous section, the Implied Volatility of the selected Listed Options is now calculated with respect to maturities  $m1$  and  $m2$ . The Implied Volatility of the OTC Option is then interpolated as follows:

$$\sigma_t^{OTC_{m,t}^k} = \max \left[ 0; \frac{1}{\sqrt{DCFT_{t,m}}} \times \left( \frac{DCFT_{m,m2}}{DCFT_{m1,m2}} \times \sigma_t^{o_{m1,t}^{\bar{k}}} \times \sqrt{DCFT_{t,m1}} + \frac{DCFT_{m1,m}}{DCFT_{m1,m2}} \times \sigma_t^{o_{m2,t}^{\bar{k}}} \times \sqrt{DCFT_{t,m2}} \right) \right]$$

#### 4.1.17. Implied Forward

##### 4.1.17.1. Selecting Listed Options for Interpolation

In order to calculate the OTC Option Implied Forward, two maturities are required:

- Where the maturity of OTC Option  $OTC_{m,t}^k$  is equal to the maturity of a Listed Option, only one maturity is selected which is the same as the maturity of the OTC Option (i.e.,  $m=m1=m2$ )
- Where the maturity of OTC Option  $OTC_{m,t}^k$  is lower than any maturity of a Listed Option, the two shortest maturities of Listed Options will be selected (i.e.,  $m < m1 < m2$ )
- Where the maturity of OTC Option  $OTC_{m,t}^k$  is higher than any maturity of a Listed Option, the two longest maturities of Listed Options will be selected (i.e.,  $m1 < m2 < m$ )
- Otherwise, the maturity of (i) the Listed Options with the longest maturity less than the maturity  $m$  of the OTC Option ( $m1$ ), and (ii) the Listed Option with the shortest maturity greater than the maturity  $m$  of the OTC Option ( $m2$ ) will be selected (i.e.,  $m1 < m < m2$ ).

##### 4.1.17.2. Estimating the Listed Option Implied Forward

The Implied Forward  $F_t^{O_{m,t}^k}$  is calculated with respect to any LISTED OPTION  $O_{m,t}^k$  on any CALCULATION DAY  $t$  according to the following formula:

$$F_t^{O_{m,t}^k} = \exp \left( r_t^{O_{m,t}^k} \times DCFT_{t,m} \right) \left[ Mid_t^{C_{m,t}^{ATM}} - Mid_t^{P_{m,t}^{ATM}} \right] + ATMK_t^{O_{m,t}^k}$$

With:

$F_t^{O_{m,t}^k}$ : IMPLIED FORWARD OF LISTED OPTION  $O_{m,t}^k$  as of CALCULATION DAY  $t$ .

$r_t^{O_{m,t}^k}$ : The DISCOUNT RATE in relation to LISTED OPTION  $O_{m,t}^k$  as of CALCULATION DAY  $t$

$Mid_t^{C_{m,t}^{ATM}}$ : The MID PRICE of the Call Option Contract  $C_{m,t}^{ATM}$  as of CALCULATION DAY  $t$

$C_{m,t}^{ATM}$ : The Call Option Contract with EXPIRATION DATE  $m$  and Strike Price  $ATMK_t^{O_{m,t}^k}$  as of CALCULATION DAY  $t$

$Mid_t^{P_{m,t}^{ATM}}$ : The MID PRICE of the Put Option Contract  $P_{m,t}^{ATM}$  as of CALCULATION DAY  $t$

$P_{m,t}^{ATM}$ : The Put Option Contract with EXPIRATION DATE  $m$  and Strike Price  $ATMK_t^{O_{m,t}^k}$  as of CALCULATION DAY  $t$

$ATMK_t^{O_{m,t}^k}$ : AT-The-Money Strike with respect to LISTED OPTION  $O_{m,t}^k$  on CALCULATION DAY t, which is the strike closes to the ATM spot level of the UNDERLYING INDEX. In case such ATM Spot level is equidistant from the two nearest strikes, the lowest strike will be selected.

#### 4.1.17.3. Estimating the OTC Option Implied Forward

The OTC Option Implied Forward  $F_t^{OTC_{m,t}^k}$  to be used to interpolate the OTC option prices will be calculated as follows:

- Where the maturity of OTC Option is equal to the maturity of a LISTED OPTION:

$$F_t^{OTC_{m,t}^k} = F_t^{O_{m,t}^k}$$

- Else:

$$F_t^{OTC_{m,t}^k} = F_t^{O_{m1,t}^k} + \left( F_t^{O_{m2,t}^k} - F_t^{O_{m1,t}^k} \right) \times \frac{DCFT_{m1,m}}{DCFT_{m1,m2}}$$

With:

$F_t^{O_{m1,t}^k}$ : The Implied Forward of a LISTED OPTION  $O_{m1,t}^k$  with maturity **m1**

**m1**: The maturity of LISTED OPTION  $O_{m1,t}^k$  being the LISTED OPTION with the longest maturity less than the maturity of Option  $OTC_{m,t}^k$  on CALCULATION DAY t

$F_t^{O_{m2,t}^k}$ : The Implied Forward of a LISTED OPTION  $O_{m2,t}^k$  with maturity **m2**

**m2**: The maturity of LISTED OPTION  $O_{m2,t}^k$  being the LISTED OPTION with the shortest maturity greater than the maturity of Option  $OTC_{m,t}^k$  on CALCULATION DAY t

$DCFT_{m1,m}$ : The number of CALENDAR DAYS from (and including) EXPIRATION DATE **m1** to (and excluding) EXPIRATION DATE **m** divided by 365.

$DCFT_{m1,m2}$ : The number of CALENDAR DAYS from (and including) EXPIRATION DATE **m1** to (and excluding) EXPIRATION DATE **m2** divided by 365.

#### 4.1.18. Discount Rate

The Discount Rate  $r_t^{OTC_{m,t}^k}$  to be used to interpolate OTC option prices on any CALCULATION DAY t is calculated as follows:

$$r_t^{OTC_{m,t}^k} = r_{t-1}$$

Where:

$r_{t-1}$ : The Rate in the currency in which the relevant UNDERLYING INDEX is denominated as of the CALCULATION DAY immediately preceding CALCULATION DAY t (or if such rate is not available the immediately preceding rate)

With:

Currency	Rate	Rate RIC
USD	Secured Overnight Financing Rate (SOFR)	USDSOFR=

#### 4.1.19. Day Count Fraction

The DAY COUNT FRACTION  $DCFT_{t,m}$  in respect of EXPIRATION DATE  $m$  as of CALCULATION DAY  $t$  is (i) the number of CALENDAR DAYS from (and including) CALCULATION DAY  $t$  to (and excluding) EXPIRATION DATE  $m$  divided by (ii) 365.

## 4.2. ACCURACY

The level of the INDEX will be rounded to 2 decimal places.

## 4.3. RECALCULATION

The INDEX ADMINISTRATOR makes the greatest possible efforts to accurately calculate and maintain the INDEX. However, errors in the determination process may occur from time to time for a variety of reasons (internal or external) and therefore cannot be completely ruled out in respect of any INDEX. The INDEX ADMINISTRATOR endeavors to correct all errors that have been identified within a reasonable period of time. The understanding of “a reasonable period of time” as well as the general measures to be taken generally depend on the underlying and is specified in the SOLACTIVE Correction Policy, which is incorporated by reference and available on the SOLACTIVE website: <https://www.solactive.com/documents/correction-policy/>.

## 4.4. MARKET DISRUPTION

In periods of market stress the INDEX ADMINISTRATOR shall calculate the INDEX following predefined and exhaustive arrangements as described in the SOLACTIVE Disruption Policy, which is incorporated by reference and available on the SOLACTIVE website: <https://www.solactive.com/documents/disruption-policy/>. Such market stress can arise due to a variety of reasons, but generally results in inaccurate or delayed prices for one or more INDEX COMPONENTS. The determination of the INDEX may be limited or impaired at times of illiquid or fragmented markets and market stress.



## 5. MISCELLANEOUS

### 5.1. DISCRETION

Any discretion which may need to be exercised in relation to the determination of the INDEX (for example the determination of the Index Universe (if applicable), the selection of the INDEX COMPONENTS (if applicable) or any other relevant decisions in relation to the INDEX) shall be made in accordance with strict rules regarding the exercise of discretion or expert judgement by the INDEX ADMINISTRATOR.

### 5.2. METHODOLOGY REVIEW

The methodology of the INDEX is subject to regular review, at least annually. If a change of the methodology has been identified within such review (e.g. if the underlying market or economic reality has changed since the launch of the INDEX or if the present methodology is based on obsolete assumptions and factors and no longer reflects the reality as accurately, reliably and appropriately as before), such change will be made in accordance with the SOLACTIVE Methodology Policy, which is incorporated by reference and available on the SOLACTIVE website: <https://www.solactive.com/documents/methodology-policy/>.

Such change in the methodology will be announced on the SOLACTIVE website under the Section "Announcements", which is available at <https://www.solactive.com/news/announcements/>. The date of the last amendment of this INDEX is contained in this GUIDELINE.

### 5.3. CHANGES IN CALCULATION METHOD

The application by the INDEX ADMINISTRATOR of the method described in this document is final and binding. The INDEX ADMINISTRATOR shall apply the method described above for the composition and calculation of the INDEX from the **INDEX TRANSFER DATE**. However, it cannot be excluded that the market environment, supervisory, legal and financial or tax reasons may require changes to be made to this method. The INDEX ADMINISTRATOR may also make changes to the terms and conditions of the INDEX and the method applied to calculate the INDEX that it 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 ADMINISTRATOR is not obliged to provide information on any such modifications or changes. Despite the modifications and changes, the INDEX ADMINISTRATOR will take the appropriate steps to ensure a calculation method is applied that is consistent with the method described above.

### 5.4. TERMINATION

The INDEX ADMINISTRATOR makes the greatest possible efforts to ensure the resilience and continued integrity of its indices over time. Where necessary, the INDEX ADMINISTRATOR shall follow a clearly defined and transparent procedure to adapt INDEX methodologies to account for changing underlying markets (see

Section 5.2 "Methodology Review") in order to maintain continued reliability and comparability of the indices. Nevertheless, if no other options are available the orderly cessation of the INDEX may be indicated. This is usually the case when the underlying market or economic reality, which an index is set to measure or to reflect, changes substantially and in a way not foreseeable at the time of inception of the INDEX, the index rules, and particularly the selection criteria, can no longer be applied coherently or the INDEX is no longer used as the underlying value for financial instruments, investment funds and financial contracts.

The INDEX ADMINISTRATOR has established and maintains clear guidelines on how to identify situations in which the cessation of an index is unavoidable, how stakeholders are to be informed and consulted and the procedures to be followed for a termination or the transition to an alternative index. Details are specified in the SOLACTIVE Termination Policy, which is incorporated by reference and available on the SOLACTIVE website: <https://www.solactive.com/documents/termination-policy/>.

### 5.5. INDEX COMMITTEE

An index committee composed of staff from the INDEX ADMINISTRATOR and its subsidiaries (the "**INDEX COMMITTEE**") is responsible for decisions regarding any amendments to the rules of the INDEX. Any such amendment, which may result in an amendment of the GUIDELINE, must be submitted to the INDEX COMMITTEE for prior approval and will be made in compliance with the Methodology Policy, which is available on the SOLACTIVE website: <https://www.solactive.com/documents/methodology-policy/>.

## 6. DEFINITIONS

**“ASK PRICE”** shall mean the last available quoted ask between 3:59:00 p.m. (including) and 4:00:00pm ET (excluding) [and 12:59:00p.m. (including) and 1:00:00p.m. (excluding) ET for half trading days] as published by the primary exchange on which the relevant option is listed.

**“BENCHMARK REGULATION”** shall have the meaning as defined in Section “Introduction”.

**“BID PRICE”** shall mean the last available quoted bid between 3:59:00 p.m. (including) and 4:00:00pm ET (excluding) [and 12:59:00p.m. (including) and 1:00:00p.m. (excluding) ET for half trading days] as published by the primary exchange on which the relevant option is listed.

**“BMR”** shall have the meaning as defined in Section “Introduction”.

**“CALCULATION DAY”** shall mean each Weekday where the Chicago Board Option Exchange (MIC: XCBO) is open for business

**“CASH COMPONENT VALUE”** shall have the meaning defined in Section 4.1.5

**“CASH PERFORMANCE”** shall have the meaning defined in Section 4.1.1

**“CASH RATE”** shall have the meaning as specified in Table 5: Index Cash Component Parameters

**“CONTINUING OPTION PORTFOLIO”** has the meaning given to it in Section 4.1.3

**“CUMULATIVE DISTRIBUTION FUNCTION”** defines the standard normal distribution.

**“DAY COUNT FRACTION”** has the meaning given to it in Section 4.1.19

**“EXPIRATION DATE”** is defined in relation to an OPTION.

**“GUIDELINE”** shall have the meaning as defined in Section “Introduction”.

**“INDEX”** shall have the meaning as defined in Section “Introduction”.

**“INDEX ADMINISTRATOR”** shall have the meaning as defined in Section “Introduction”.

**“INDEX COMMITTEE”** shall have the meaning as defined in Section 5.5.

**“INDEX CURRENCY”** is the currency specified in the column “Currency” in Table 2: Index Identifiers.

**“INDEX FEE”** shall mean 0.00%

**“INDEX FEE BASIS”** shall mean 360

**“INDEX OWNER”** shall have the meaning as defined in Section “Introduction”.

**“INDEX PERFORMANCE”** shall have the meaning defined in Section 4.1.6

**“INDEX REBALANCING COST”** shall have the meaning defined in Section 4.1.7

**“INDEX START DATE”** is January 6th, 2004

“**INDEX TRANSFER DATE**” is as specified in Table 6: Index Initialization and shall mean the **CALCULATION DAY**  $t$  from which **SOLACTIVE** assumes the role of **INDEX ADMINISTRATOR**

“**LISTED OPTION**” shall have the meaning as defined in Section 4.1.14

“**MAXIMUM FUNCTION**” means, when followed by a series of amounts inside brackets, whichever is the larger of the amounts separated by a comma inside those brackets

“**MID PRICE**” is the average of **BID** and **ASK PRICE**.

“**MINIMUM FUNCTION**” means, when followed by a series of amounts inside brackets, whichever is the lesser of the amounts separated by a comma inside those brackets

“**NATURAL LOGARITHM FUNCTION**” is the inverse of the **EXPONENTIAL FUNCTION**.

“**NEW OPTION PORTFOLIO**” has the meaning given to it in Section 4.1.4.

“**NUMBER OF UNITS**” has the meaning given to it in Section 2.2

“**OPTION**” means an OTC (Over the counter) derivative that securitizes the right but not the obligation to buy (an option of type Call) or sell (an option of type Put) a pre-defined reference instrument relating to a position in respect of the **UNDERLYING INDEX** at a pre-defined day, the **EXPIRATION DATE**  $m$ , for a pre-defined price, the **STRIKE PRICE**  $K$ .

“**OPTION CURRENCY**” shall have the meaning as defined in Table 4: Index Parameters column “Option Currency”

“**STRIKE PRICE**” is defined in relation to an **OPTION**.

“**SOLACTIVE**” shall have the meaning as defined in Section “Introduction”.

“**TOTAL RETURN EXPOSURE**” shall have the meaning defined in Section 4.1.2

“**TRADE DATE**” in relation to a traded Option  $Q_m^k$  means the **CALCULATION DAY**  $t$  where a position of **OPTION**  $Q_m^k$  has been entered.

“**UNDERLYING COMPONENT**” shall have the meaning as specified in respect of an Index in the Underlying Component column set out in Table 4: Index Parameters

“**UNDERLYING COMPONENT CURRENCY**” shall have the meaning as defined in Table 4: Index Parameters column “Underlying Component Currency”

“**UNDERLYING COMPONENT VALUE**” in relation to a **CALCULATION DAY**  $t$  means the official close of the **UNDERLYING COMPONENT** on that day

“**UNDERLYING INDEX**” means the Index identified by **UNDERLYING INDEX RIC** from Table 4: Index Parameters

“**UNDERLYING INDEX CLOSING LEVEL**” in relation to a **CALCULATION DAY**  $t$  means the official close of the **UNDERLYING INDEX** on that day

“**UNDERLYING SETTLEMENT INDEX LEVEL**” in relation to a **CALCULATION DAY**  $t$  means the official close of the **UNDERLYING INDEX** on that day

“**VEGA**” has the meaning given to it in Section 4.1.11.

## 7. VERSIONING

VERSION	DATE	DESCRIPTION
1.0	May 23rd, 2024	Initial Guideline creation ( <i>initial version</i> )

*Table 3: Versioning*

## APPENDIX

INDEX RIC	UNDERLYING INDEX RIC	OPTION INCLUDED	OPTION CURRENCY	SCALING	UNDERLYING COMPONENT	UNDERLYING COMPONENT RIC	UNDERLYING COMPONENT CURRENCY
.CSEAUCET	.SPX	Call	USD	Index	UBS Market Beta US Large Cap Equity Index ER USD	.UISEMULC	USD

Table 4: Index Parameters

INDEX RIC	CASH RATE	CASH BASIS	CASH SPREAD
.CSEAUCET	Federal Funds Composite Interest Rate (USONFFE=)	360	0.00%

Table 5: Index Cash Component Parameters

INDEX RIC	INDEX TRANSFER DATE	INDEX LEVEL (TOTAL RETURN) AS OF 22 <sup>ND</sup> MAY 2024	INDEX LEVEL (EXCESS RETURN) AS OF 22 <sup>ND</sup> MAY 2024	CASH COMPONENT VALUE AS OF 22 <sup>ND</sup> MAY 2024	NUMBER OF UNITS OF THE UNDERLYING COMPONENT AS OF 22 <sup>ND</sup> MAY 2024
.CSEAUCET	23 <sup>rd</sup> May 2024	7235.37702646685	5230.51850865801	1383.37074068075	1.81966249656404

Table 6: Index Initialization

INDEX RIC	TYPE	STRIKE	ENTRY DATE	EXPIRY DATE	NUMBER OF OPTION UNITS	OPTION PRICE
.CSEAUCET	Call	5187	2024-05-01	2024-05-22	-0.0918566438354272	120.01
.CSEAUCET	Call	5169	2024-05-02	2024-05-23	-0.0918693333408703	137.799961660159
.CSEAUCET	Call	5216	2024-05-03	2024-05-24	-0.0918204190609381	93.4853356206283
.CSEAUCET	Call	5282	2024-05-06	2024-05-28	-0.0917024003963549	42.3649079793062
.CSEAUCET	Call	5336	2024-05-07	2024-05-29	-0.0914630326290817	16.7895962479103
.CSEAUCET	Call	5343	2024-05-08	2024-05-30	-0.0914486380380561	16.2851525476959
.CSEAUCET	Call	5343	2024-05-09	2024-05-31	-0.0914895566840728	19.0759755525486
.CSEAUCET	Call	5371	2024-05-10	2024-06-03	-0.0913413024021225	12.19232417001630

INDEX GUIDELINE

.CSEAUCET	Call	5379	2024-05-13	2024-06-04	-0.0912594718921845	11.53290069259890
.CSEAUCET	Call	5378	2024-05-14	2024-06-05	-0.0913482296065906	13.17871173952580
.CSEAUCET	Call	5404	2024-05-15	2024-06-06	-0.0911477228445399	8.63400910479884
.CSEAUCET	Call	5467	2024-05-16	2024-06-07	-0.0906651315440296	2.82741167518812
.CSEAUCET	Call	5456	2024-05-17	2024-06-10	-0.0907906936193199	4.25990658164571
.CSEAUCET	Call	5462	2024-05-20	2024-06-11	-0.0908853623999432	4.25680022753848
.CSEAUCET	Call	5467	2024-05-21	2024-06-12	-0.0908861750711138	6.27353516746556
.CSEAUCET	Call	5481	2024-05-22	2024-06-13	-0.0907834823235070	5.55254494676358

*Table 7: Initial Option Portfolio as of 22<sup>nd</sup> May 2024*

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