INDEX GUIDELINE

HSBC EU Fixed Strike FVA Index

Version 1.3

30 September 2025

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INTRODUCTION

This document (the "**GUIDELINE**") is to be used as a guideline with regard to the composition, calculation and maintenance of the HSBC EU Fixed Strike FVA 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 HSBC Bank plc ("**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**"). The name "Solactive" is trademarked.

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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).

1. INDEX SPECIFICATIONS

1.1. SCOPE OF THE INDEX

Category	Description
Asset Class	Equity
Strategy	The INDEX is a rules-based strategy which aims at monetizing a backwardated term structure of the downside fixed strike volatility of the EURO STOXX 50® Index (the "**SX5E**"), through the weekly buying of replication of Fixed Strike Forward Volatility Agreement ("**FVA**") on SX5E through the set of listed options on SX5E. The INDEX is calculated on a notional basis. The investment exposure provided by the INDEX to the options referenced in the INDEX is purely synthetic and an investor in the INDEX will have no rights in respect of any such options. For the avoidance of doubt, any reference herein to options being "entered into" is purely on a notional basis.
Regional Allocation	Europe

Table 1 Index Overview

1.2. IDENTIFIERS AND PUBLICATION

The INDEX is published under the following identifiers

Name	ISIN	Index Currency	Type	BBG ticker	RIC
HSBC EU Fixed Strike FVA Index	DE000SL0J072	EUR	Excess Return	HSIEFVDE Index	.HSIEFVDE
HSBC EU Fixed Strike FVA Indicative Index	DE000SL0RR04	EUR	Excess Return	HSIOFVDE Index	.HSIOFVDE

The INDEX is published on the website of the INDEX ADMINISTRATOR (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/.

1.3. INITIAL LEVEL OF THE INDEX

The initial level of the INDEX on the START DATE is 100. Historical values from the LIVE DATE, will be recorded in accordance with Article 8 of the BMR. Levels of the INDEX published for a period prior to the LIVE DATE have been back-tested using EXCHANGE PRICES. Levels of the INDEX published for the period falling on or prior to 25th July 2023 have been provided by the INDEX OWNER to the INDEX ADMINISTRATOR. The INDEX OWNER has obtained the listed options available from REFINITIV and

calculated the levels of the INDEX from the period from (and including) the Start Date to (but excluding) 25th July 2023.

1.4. PRICES AND CALCULATION FREQUENCY

The level of the HSBC EU FIXED STRIKE FVA INDEX is calculated in respect of each CALCULATION DAY t and is published at 09:00 a.m. CET on the CALCULATION DAY immediately following CALCULATION DAY t. The level of the HSBC EU FIXED STRIKE FVA INDICATIVE INDEX is calculated in respect of each CALCULATION DAY t and is published at 05:00 p.m. EST on the 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 PORTFOLIO REVIEW DATE, the INDEX synthetically creates a position, comprising of:

- Short Leg, consisting of:
  - Strip of Listed Put Options Set (defined in Section 2.1.1)
  - Strip of Listed Call Options Set (defined in Section 2.1.2)
  - Straddle Options Set (defined in Section 2.1.3)
  - Synthetic Future Options Set (defined in Section 2.1.4)
- Long Leg, consisting of a Long Vanilla Option (defined in Section 2.1.5)

2.1.1. Strip of Listed Put Options Set

The Listed Put Options set includes a set of listed put options with the following properties:

- TRADE DATE TR_Q of the PUT OPTION is PORTFOLIO REVIEW DATE $TR(t)$
- EXPIRATION DATE TE_Q of the PUT OPTION is FORWARD START DATE $T_{FS,t}$
- UNWIND DATE TU_Q of the PUT OPTION is FORWARD START DATE $T_{FS,t}$
- STRIKE PRICE $K_{Q,t-1}$ are the ELIGIBLE LISTED STRIKES on CALCULATION DAY t-1which are less than K^*_{t-1}

With:

$TR(t)$: means in respect of CALCULATION DAY t, the PORTFOLIO REVIEW DATE falling on or immediately following such CALCULATION DAY

$T_{FS,t}$: is the FORWARD START DATE in respect of CALCULATION DAY t.

The "**FORWARD START DATE**" is determined as the FILTERED LISTED MONTHLY EXPIRATION DATE that is closest, in terms of the number of CALCULATION DAYS, to the TARGET FORWARD START DATE in respect of CALCULATION DAY t. If the TARGET FORWARD START DATE is equidistant from the two nearest FILTERED LISTED MONTHLY EXPIRATION DATES, then the FILTERED LISTED MONTHLY EXPIRATION DATE that is furthest from CALCULATION DAY t is chosen as FORWARD START DATE.

K^*_{t-1}: means the ELIGIBLE LISTED STRIKE closest to the FORWARD (as calculated in accordance with Section 4.1.26) in relation to the CALCULATION DAY t-1 and EXPIRATION DATE $T_{FS,t}$

2.1.2. Strip of Listed Call Options Set

The Listed Call Options Set includes a set of listed call options with the following properties:

- TRADE DATE TR_Q of the Call OPTION is PORTFOLIO REVIEW DATE $TR(t)$
- EXPIRATION DATE TE_Q of the Call OPTION is FORWARD START DATE $T_{FS,t}$
- UNWIND DATE TU_Q of the Call OPTION is FORWARD START DATE $T_{FS,t}$
- STRIKE PRICE $K_{Q,t-1}$ are the ELIGIBLE LISTED STRIKES on CALCULATION DAY t-1 which are greater than K^*_{t-1}

With:

$TR(t)$: means in respect of CALCULATION DAY t, the PORTFOLIO REVIEW DATE falling on or immediately following such CALCULATION DAY.

$T_{FS,t}$: is the FORWARD START DATE in respect of CALCULATION DAY t.

K^*_{t-1}: means the ELIGIBLE LISTED STRIKE closest to the FORWARD (as calculated in accordance with Section 4.1.26) in relation to the CALCULATION DAY t-1 and EXPIRATION DATE $T_{FS,t}$

2.1.3. Straddle Options Set

The Straddle Options Set includes:

- a Listed Put Option with the following properties:
  - TRADE DATE TR_Q of the PUT OPTION is PORTFOLIO REVIEW DATE $TR(t)$
  - EXPIRATION DATE TE_Q of the PUT OPTION is FORWARD START DATE $T_{FS,t}$
  - UNWIND DATE TU_Q of the PUT OPTION is FORWARD START DATE $T_{FS,t}$
  - The STRIKE PRICE K_Q of the PUT OPTION entered on CALCULATION DAY t is K^*_{t-1}
- a Listed Call Option with the following properties:
  - TRADE DATE TR_Q of the CALL OPTION is PORTFOLIO REVIEW DATE $TR(t)$
  - EXPIRATION DATE TE_Q of the CALL OPTION is FORWARD START DATE $T_{FS,t}$
  - UNWIND DATE TU_Q of the CALL OPTION is FORWARD START DATE $T_{FS,t}$
  - The STRIKE PRICE K_Q of the CALL OPTION entered on CALCULATION DAY t is K^*_{t-1}

With:

$TR(t)$: means in respect of CALCULATION DAY t, the PORTFOLIO REVIEW DATE falling on or immediately following such CALCULATION DAY

$T_{FS,t}$: is the FORWARD START DATE in respect of CALCULATION DAY t .

K^*_{t-1}: means the ELIGIBLE LISTED STRIKE closest to the FORWARD (as calculated in accordance with Section 4.1.26) in relation to the CALCULATION DAY t-1 and EXPIRATION DATE $T_{FS,t}$

2.1.4. Synthetic Future Options Set

The Synthetic Future Options Set includes:

- a Listed Put Option with the following properties:
  - TRADE DATE TR_Q of the PUT OPTION is PORTFOLIO REVIEW DATE $TR(t)$
  - EXPIRATION DATE TE_Q of the PUT OPTION is FORWARD START DATE $T_{FS,t}$
  - UNWIND DATE TU_Q of the PUT OPTION is FORWARD START DATE $T_{FS,t}$
  - The STRIKE PRICE K_Q of the PUT OPTION entered on CALCULATION DAY t is K^*_{t-1}
- a Listed Call Option with the following properties:
  - TRADE DATE TR_Q of the CALL OPTION is PORTFOLIO REVIEW DATE $TR(t)$
  - EXPIRATION DATE TE_Q of the CALL OPTION is FORWARD START DATE $T_{FS,t}$

- UNWIND DATE TU_Q of the CALL OPTION is FORWARD START DATE $T_{FS,t}$
- The STRIKE PRICE K_Q of the CALL OPTION entered on CALCULATION DAY t is K^*_{t-1}

With:

$TR(t)$: means in respect of CALCULATION DAY t, the PORTFOLIO REVIEW DATE falling on or immediately following such CALCULATION DAY.

$T_{FS,t}$: is the FORWARD START DATE in respect of CALCULATION DAY t.

K^*_{t-1}: means the ELIGIBLE LISTED STRIKE closest to the FORWARD (as calculated in accordance with Section 4.1.26) in relation to the CALCULATION DAY t-1 and EXPIRATION DATE $T_{FS,t}$

2.1.5. Long Vanilla Option

The Long Vanilla Option is a Listed Put Option with the following properties:

- TRADE DATE TR_Q of the Put OPTION is PORTFOLIO REVIEW DATE $TR(t)$
- EXPIRATION DATE TE_Q of the Put OPTION is MATURITY DATE $T_{M,t}$
- UNWIND DATE TU_Q of the Put OPTION is FORWARD START DATE $T_{FS,t}$
- The STRIKE PRICE K_Q of the Put OPTION entered on CALCULATION DAY t is K^{FVA}_{t-1}

With:

$T_{M,t}$: is the MATURITY DATE.

The "**MATURITY DATE**" is the FILTERED LISTED MONTHLY EXPIRATION DATE that is closest, in terms of CALCULATION DAYS, to the TARGET MATURITY DATE in respect of CALCULATION DAY t. If the TARGET MATURITY DATE is equidistant from the two nearest FILTERED LISTED MONTHLY EXPIRATION DATES, then the FILTERED LISTED MONTHLY EXPIRATION DATE that is furthest from CALCULATION DAY t is chosen.

$T_{FS,t}$: is the FORWARD START DATE in respect of CALCULATION DAY t.

K^{FVA}_{t-1}: means the ELIGIBLE LISTED STRIKE closest to 90% of the UNDERLYING INDEX CLOSING LEVEL in respect of the CALCULATION DAY t-1

2.1.6. Target Forward Start Date

In relation to CALCULATION DAY t, the TARGET FORWARD START DATE is determined as the CALCULATION DAY falling 126 Calculation Days following CALCULATION DAY t.

2.1.7. Target Maturity Date

In relation to CALCULATION DAY t, the TARGET MATURITY DATE is determined as the CALCULATION DAY falling 252 Calculation Days following the FORWARD START DATE in respect of CALCULATION DAY t.

2.2. NUMBER OF EXECUTION UNITS OF THE INDEX COMPONENTS

2.2.1. Number of Execution Units of the Listed Put Options Set

In relation to CALCULATION DAY t, the NUMBER OF EXECUTION UNITS $Units^{exec}_{t,Q}$ in respect of each OPTION Q within the STRIP of Listed Put Options Set notionally traded on CALCULATION DAY t will be calculated in accordance with the following algorithm:

- If absolute value $\left|delta_{t-1,Q}\left(Put, Fwd_{t-1,TE_Q}, DF_{t-1,TE_Q}, DCFT_{t-1,TE_Q}, K_Q, \sigma_{t-1,K_Q,TE_Q}\right)\right|$ of the OPTION Q is less than 1%, then:

$$Units_{t,Q}^{exec} = 0$$

- If absolute value $\left|delta_{t-1,Q}\left(Put, Fwd_{t-1,TE_Q}, DF_{t-1,TE_Q}, DCFT_{t-1,TE_Q}, K_Q, \sigma_{t-1,K_Q,TE_Q}\right)\right|$ of the OPTION Q is greater than or equal to 1%, then:

$$Units_{t,Q}^{exec} = -Units_{t,Q}^{theo} \times \frac{3\% \times Index_{t-1}^{TR}}{52 \times VegaPtf_{t-1}} \times DS_{t-1}$$

For the three (3) options from the Listed Put Options Set with an absolute value of delta (calculated as $\left|delta_{t-1,Q}\left(Put, Fwd_{t-1,TE_Q}, DF_{t-1,TE_Q}, DCFT_{t-1,TE_Q}, K_Q, \sigma_{t-1,K_Q,TE_Q}\right)\right|$) greater than or equal to 1% and which have the smallest STRIKE PRICES , the NUMBER OF EXECUTION UNITS $Units_{t,Q}^{exec}$ is calculated as:

$$Units_{t,Q}^{exec} = -\left(Units_{t,Q}^{theo} + \frac{\sum_{j \in ListedPutOptionsSet,\ |delta_{t-1,j}|<1\%} Units_{t,j}^{theo}}{3}\right) \times \frac{3\% \times Index_{t-1}^{TR}}{52 \times VegaPtf_{t-1}} \times DS_{t-1}$$

Where:

$Units_{t,Q}^{theo}$: means the NUMBER OF THEORETICAL UNITS of the Put OPTION Q in respect of CALCULATION DAY t calculated as follows:

$$Units_{t,Q}^{theo} = gamma_{t-1,Q}\left(Put, K_Q \times e^{\mu_{t-1}^{FVA} \times act(T_{FS,t}, T_{M,t})/360}, DF_{t-1}^{FVA}, DCFT_{T_{FS,t}, T_{M,t}}, K_{t-1}^{FVA}, \sigma_{t-1}^{FVA}\right) \times dK_Q$$

With:

$delta_{t-1,Q}$: means the DELTA of the Put OPTION Q as of CALCULATION DAY t-1 as defined in Section 4.1.20

$Index_{t-1}^{TR}$: means the TOTAL RETURN LEVEL of the INDEX in respect of CALCULATION DAY t-1

$VegaPtf_{t-1}$: means the PORTFOLIO VEGA in respect of CALCULATION DAY t-1 as defined in Section 4.1.14

DS_{t-1}: means the DYNAMIC SIZING MULTIPLIER in respect of CALCULATION DAY t-1 as calculated in accordance with Section 4.1.15

$gamma_{t-1,Q}$: means the GAMMA of the Put OPTION Q as of CALCULATION DAY t-1 as defined in Section 4.1.23

K_Q: means the STRIKE PRICE of the respective Put OPTION Q

TE_Q: means the EXPIRATION DATE of the respective Put OPTION Q

μ_{t-1}^{FVA}: means the DRIFT TERM OF THE FIXED STRIKE FVA in respect of CALCULATION DAY t-1 calculated in accordance with Section 4.1.11

Fwd_{t-1,TE_Q}: means the FORWARD in relation to CALCULATION DAY t-1 and EXPIRATION DATE TE_Q calculated in accordance with Section 4.1.26

DF_{t-1,TE_Q}: means the DISCOUNT FACTOR in relation to CALCULATION DAY t-1 and EXPIRATION DATE TE_Q calculated in accordance with Section 4.1.27

DF_{t-1}^{FVA}: means the DISCOUNT FACTOR of the FIXED STRIKE FVA in respect of CALCULATION DAY t-1 calculated in accordance with Section 4.1.12

K_{t-1}^{FVA}: means the ELIGIBLE LISTED STRIKE corresponding to EXPIRATION DATE $T_{M,t}$ and closest to 90% of the UNDERLYING INDEX CLOSING LEVEL in respect of the CALCULATION DAY t-1

σ_{t-1,K_Q,TE_Q}: means the IMPLIED VOLATILITY in respect of the CALCULATION DAY t-1 in relation to EXPIRATION DATE TE_Q and STRIKE PRICE K_Q, calculated in accordance with 4.1.28.

σ_{t-1}^{FVA}: means the FORWARD VOLATILITY in respect of the CALCULATION DAY t-1 calculated in accordance with Section 4.1.13.

dK_Q: is with respect to the Listed Put Option from the Listed Put Options Set, calculated as $K_{Q+1,t-1} - K_{Q,t-1}$, where $K_{Q+1,t-1}$ is the strike nearest to $K_{Q,t-1}$ and is greater than $K_{Q,t-1}$

$DCFT_{t-1,TE_Q}$: The DAY COUNT FRACTION in respect to CALCULATION DAY TE_Q as of CALCULATION DAY t-1

$DCFT_{T_{FS,t},T_{M,t}}$: The DAY COUNT FRACTION in respect to CALCULATION DAY $T_{M,t}$ as of CALCULATION DAY $T_{FS,t}$.

$act(T_{FS,t}, T_{M,t})$: means the actual number of calendar days from, and including, CALCULATION DAY $T_{FS,t}$ to, but excluding the CALCULATION DAY $T_{M,t}$

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

2.2.2. *Number of Execution Units of the Listed Call Options Set*

In relation to CALCULATION DAY t, the NUMBER OF EXECUTION UNITS $Units_{t,Q}^{exec}$ in respect of each OPTION Q within the STRIP of Listed Call Options Set notionally traded on CALCULATION DAY t will be calculated in accordance with the following algorithm:

- If absolute value $\left|delta_{t-1,Q}\left(Call, Fwd_{t-1,TE_Q}, DF_{t-1,TE_Q}, DCFT_{t-1,TE_Q}, K_Q, \sigma_{t-1,K_Q,TE_Q}\right)\right|$ of the OPTION Q is less than 1%, then:

$$Units_{t,Q}^{exec} = 0$$

- If absolute value $\left|delta_{t-1,Q}\left(Call, Fwd_{t-1,TE_Q}, DF_{t-1,TE_Q}, DCFT_{t-1,TE_Q}, K_Q, \sigma_{t-1,K_Q,TE_Q}\right)\right|$ of the OPTION Q is greater than or equal to 1%, then:

$$Units_{t,Q}^{exec} = -Units_{t,Q}^{theo} \times \frac{3\% \times Index_{t-1}^{TR}}{52 \times VegaPtf_{t-1}} \times DS_{t-1}$$

For the three (3) options from the Listed Call Options set with an absolute value of delta (calculated as $\left|delta_{t-1,Q}\left(Call, Fwd_{t-1,TE_Q}, DF_{t-1,TE_Q}, DCFT_{t-1,TE_Q}, K_Q, \sigma_{t-1,K_Q,TE_Q}\right)\right|$) greater than or equal to 1% and which have the smallest STRIKE PRICES, the NUMBER OF EXECUTION UNITS $Units_{t,Q}^{exec}$ is calculated as:

$$Units_{t,Q}^{exec} = -\left(Units_{t,Q}^{theo} + \frac{\sum_{j \in ListedCallOptionsSet,\ |delta_{t-1,j}|<1\%} Units_{t,j}^{theo}}{3} \right) \times \frac{3\% \times Index_{t-1}^{TR}}{52 \times VegaPtf_{t-1}} \times DS_{t-1}$$

Where:

$$Units_{t,Q}^{theo} = gamma_{t-1,Q}\left(Put, K_Q \times e^{\mu_{t-1}^{FVA} \times act(T_{FS,t}, T_{M,t})/360}, DF_{t-1}^{FVA}, DCFT_{T_{FS,t}, T_{M,t}}, K_{t-1}^{FVA}, \sigma_{t-1}^{FVA}\right) \times dK_Q$$

With:

$delta_{t-1,Q}$: means the DELTA of the Call OPTION Q as of CALCULATION DAY t-1 as defined in Section 4.1.20

$Index_{t-1}^{TR}$: means the TOTAL RETURN LEVEL of the INDEX in respect of CALCULATION DAY t-1

$VegaPtf_{t-1}$: means the PORTFOLIO VEGA in respect of CALCULATION DAY t-1 as defined in Section 4.1.14

$Units_{t,Q}^{theo}$: means the NUMBER OF THEORETICAL UNITS of the Call OPTION Q in respect of CALCULATION DAY t

DS_{t-1}: means the DYNAMIC SIZING MULTIPLIER in respect of CALCULATION DAY t-1 as calculated in accordance with Section 4.1.15

$gamma_{t-1,Q}$: means the GAMMA of the Call OPTION Q as of CALCULATION DAY t-1 as defined in Section 4.1.23

K_Q: means the STRIKE PRICE of the respective Call OPTION Q

TE_Q: means the EXPIRATION DATE of the respective Call OPTION Q

μ_{t-1}^{FVA}: means the DRIFT TERM OF THE FIXED STRIKE FVA in respect of CALCULATION DAY t-1 calculated in accordance with Section 4.1.11

Fwd_{t-1,TE_Q}: means the FORWARD in relation to CALCULATION DAY t-1 and EXPIRATION DATE TE_Q calculated in accordance with Section 4.1.26

DF_{t-1,TE_Q}: means the DISCOUNT FACTOR in relation to CALCULATION DAY t-1 and EXPIRATION DATE TE_Q calculated in accordance with Section 4.1.27

DF_{t-1}^{FVA}: means the DISCOUNT FACTOR of the FIXED STRIKE FVA in respect of CALCULATION DAY t-1 calculated in accordance with Section 4.1.12

K_{t-1}^{FVA}: means the ELIGIBLE LISTED STRIKE corresponding to EXPIRATION DATE $T_{M,t}$ and closest to 90% of the UNDERLYING INDEX CLOSING LEVEL in respect of the CALCULATION DAY t-1

σ_{t-1,K_Q,TE_Q}: means the IMPLIED VOLATILITY in respect of the CALCULATION DAY t-1, in relation to EXPIRATION DATE TE_Q and STRIKE PRICE K_Q, calculated in accordance with 4.1.28

σ_{t-1}^{FVA}: means the FORWARD VOLATILITY in respect of the CALCULATION DAY t-1 calculated in accordance with Section 4.1.13

dK_Q: means a strike step corresponding to the option Q and calculated as $K_{Q,t-1} - K_{Q-1,t-1}$, where $K_{Q-1,t-1}$ is the strike nearest to $K_{Q,t-1}$ and is less than $K_{Q,t-1}$

$DCFT_{t-1,TE_Q}$: The DAY COUNT FRACTION in respect to CALCULATION DAY TE_Q as of CALCULATION DAY t-1

$DCFT_{T_{FS,t},T_{M,t}}$: The DAY COUNT FRACTION in respect to CALCULATION DAY $T_{M,t}$ as of CALCULATION DAY $T_{FS,t}$

$act(T_{FS,t}, T_{M,t})$: means the number of calendar days from, and including, CALCULATION DAY $T_{FS,t}$ to, but excluding the CALCULATION DAY $T_{M,t}$

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

2.2.3. *Number of Execution Units of the Straddle Options Set*

In relation to CALCULATION DAY t, the NUMBER OF EXECUTION UNITS $Units_{t,Q}^{exec}$ in respect of each OPTION Q within the Straddle Options Set notionally traded on CALCULATION DAY t will be calculated in accordance with the following formula:

$$Units_{t,Q}^{exec} = -Units_{t,Q}^{theo} \times \frac{3\% \times Index_{t-1}^{TR}}{52 \times VegaPtf_{t-1}} \times DS_{t-1}$$

Where:

- For an OPTION TYPE, Put:

$$Units_{t,Q}^{theo} = gamma_{t-1,Q}\Big(Put, K_Q \times e^{\mu_{t-1}^{FVA} \times act(T_{FS,t},T_{M,t})/360}, DF_{t-1}^{FVA}, DCFT_{T_{FS,t},T_{M,t}}, K_{t-1}^{FVA}, \sigma_{t-1}^{FVA}\Big) \times \frac{dK_Q^{Put}}{2}$$

- For an OPTION TYPE, Call:

$$Units_{t,Q}^{theo} = gamma_{t-1,Q}\Big(Call, K_Q \times e^{\mu_{t-1}^{FVA} \times act(T_{FS,t},T_{M,t})/360}, DF_{t-1}^{FVA}, DCFT_{T_{FS,t},T_{M,t}}, K_{t-1}^{FVA}, \sigma_{t-1}^{FVA}\Big) \times \frac{dK_Q^{Call}}{2}$$

With:

$Index_{t-1}^{TR}$: means the TOTAL RETURN LEVEL of the INDEX in respect of CALCULATION DAY t-1

$VegaPtf_{t-1}$: means the PORTFOLIO VEGA in respect of CALCULATION DAY t-1 as defined in Section 4.1.14

$Units_{t,Q}^{theo}$: means the NUMBER OF THEORETICAL UNITS of the respective Call or Put OPTION Q in respect of CALCULATION DAY t

DS_{t-1}: means the DYNAMIC SIZING MULTIPLIER in respect of CALCULATION DAY t-1 as calculated in accordance with Section 4.1.15

$gamma_{t-1,Q}$: means the GAMMA of the Call OPTION Q as of CALCULATION DAY t-1 as defined in Section 4.1.23

K_Q: means the STRIKE PRICE of the respective Put or Call OPTION Q from the Straddle Options Set

μ_{t-1}^{FVA}: means the DRIFT TERM OF THE FIXED STRIKE FVA in respect of CALCULATION DAY t-1 calculated in accordance with Section 4.1.11

DF_{t-1}^{FVA}: means the DISCOUNT FACTOR of the FIXED STRIKE FVA in respect of CALCULATION DAY t-1 calculated in accordance with Section 4.1.12

K_{t-1}^{FVA}: means the ELIGIBLE LISTED STRIKE corresponding to EXPIRATION DATE $T_{M,t}$ and closest to 90% of the UNDERLYING INDEX CLOSING LEVEL in respect of the CALCULATION DAY t-1

σ_{t-1}^{FVA}: means the FORWARD VOLATILITY in respect of the CALCULATION DAY t-1 calculated in accordance with Section 4.1.13.

dK_Q^{Put}: in respect of the Listed Put Option Q of the Straddle Options Set, let K_{below}be the nearest available strike below K_Q. Then, dK_Q^{Put} is calculated as $K_Q - K_{below}$

dK_Q^{Call}: in respect of the Listed Call Option Q of the Straddle Options Set, let K_{above}be the nearest available strike above K_Q. Then, dK_Q^{Call} is calculated as $K_{above} - K_Q$

$DCFT_{T_{FS,t},T_{M,t}}$: The DAY COUNT FRACTION in respect to CALCULATION DAY $T_{M,t}$ as of CALCULATION DAY $T_{FS,t}$

$act(T_{FS,t}, T_{M,t})$: means the number of calendar days from, and including, CALCULATION DAY $T_{FS,t}$ to, but excluding the CALCULATION DAY $T_{M,t}$

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

2.2.4. Number of Execution Units of the Synthetic Future Options Set

In relation to CALCULATION DAY t, the NUMBER OF EXECUTION UNITS $Units_{t,Q}^{exec}$ in respect of each OPTION Q within the Synthetic Future Options Set notionally traded on CALCULATION DAY t will be calculated in accordance with the following formula:

- For the OPTION TYPE, Put:

$$Units_{t,Q}^{exec} = Units_{t,Q}^{theo} \times \frac{3\% \times Index_{t-1}^{TR}}{52 \times VegaPtf_{t-1}} \times DS_{t-1}$$

- For the OPTION TYPE, Call:

$$Units_{t,Q}^{exec} = -Units_{t,Q}^{theo} \times \frac{3\% \times Index_{t-1}^{TR}}{52 \times VegaPtf_{t-1}} \times DS_{t-1}$$

Where:

- For an OPTION TYPE that is either Put or Call:

$$Units_{t,Q}^{theo} = delta_{t-1,Q}\Big(Put, K_Q \times e^{\mu_{t-1}^{FVA} \times act(T_{FS,t},T_{M,t})/360}, DF_{t-1}^{FVA}, DCFT_{T_{FS,t},T_{M,t}}, K_{t-1}^{FVA}, \sigma_{t-1}^{FVA}\Big)$$

With:

$Index_{t-1}^{TR}$: means the TOTAL RETURN LEVEL of the INDEX in respect of CALCULATION DAY t-1

$VegaPtf_{t-1}$: means the PORTFOLIO VEGA in respect of CALCULATION DAY t-1 as defined in Section 4.1.14

$Units_{t,Q}^{theo}$: means the NUMBER OF THEORETICAL UNITS of the respective Call or Put OPTION Q in respect of CALCULATION DAY t

DS_{t-1}: means the DYNAMIC SIZING MULTIPLIER in respect of CALCULATION DAY t-1 as calculated in accordance with Section 4.1.15

$delta_{t-1,Q}$: means the DELTA of the OPTION Q as of CALCULATION DAY t-1 as defined in Section 4.1.21

K_Q: means the STRIKE PRICE of the respective Put or Call OPTION Q from the Synthetic Future Options Set

μ_{t-1}^{FVA}: means the DRIFT TERM OF THE FIXED STRIKE FVA in respect of CALCULATION DAY t-1 calculated in accordance with Section 4.1.11

DF_{t-1}^{FVA}: means the DISCOUNT FACTOR of the FIXED STRIKE FVA in respect of CALCULATION DAY t-1 calculated in accordance with Section 4.1.12

K_{t-1}^{FVA}: means the ELIGIBLE LISTED STRIKE corresponding to EXPIRATION DATE $T_{M,t}$ and closest to 90% of the UNDERLYING INDEX CLOSING LEVEL in respect of the CALCULATION DAY t-1

σ_{t-1}^{FVA}: means the FORWARD VOLATILITY in respect of the CALCULATION DAY t-1 calculated in accordance with Section 4.1.13.

dK_Q^{Put}: in respect of the Listed Put Option Q of the Straddle Options Set, is calculated as $K_{Q+1,t-1} - K_Q$, where $K_{Q-1,t-1}$ is the strike nearest to K_Q and is greater than K_Q

dK_Q^{Call}: in respect of the Listed Call Option Q and calculated as $K_Q - K_{Q-1,t-1}$, where $K_{Q-1,t-1}$ is the strike nearest to K_Q, and is less than K_Q

$DCFT_{T_{FS,t},T_{M,t}}$: The DAY COUNT FRACTION in respect to CALCULATION DAY $T_{M,t}$ as of CALCULATION DAY $T_{FS,t}$

$act(T_{FS,t}, T_{M,t})$: means the number of calendar days from, and including, CALCULATION DAY $T_{FS,t}$ to, but excluding the CALCULATION DAY $T_{M,t}$

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

2.2.5. Number of Execution Units of the Long Vanilla Option

In relation to CALCULATION DAY t, the NUMBER OF EXECUTION UNITS $Units_{t,Q}^{exec}$ in respect of the Long Vanilla Option Q notionally traded on CALCULATION DAY t will be calculated in accordance with the following formula:

$$Units_{t,Q}^{exec} = Units_{t,Q}^{theo} \times \frac{3\% \times Index_{t-1}^{TR}}{52 \times VegaPtf_{t-1}} \times DS_{t-1}$$

Where:

$$Units_{t,Q}^{theo} = 1$$

With:

$Index_{t-1}^{TR}$: means the TOTAL RETURN LEVEL of the INDEX in respect of CALCULATION DAY t-1

$VegaPtf_{t-1}$: means the PORTFOLIO VEGA in respect of CALCULATION DAY t-1 as defined in Section 4.1.14

$Units_{t,Q}^{theo}$: means the NUMBER OF THEORETICAL UNITS of the respective Call or Put OPTION Q in respect of CALCULATION DAY t

DS_{t-1}: means the DYNAMIC SIZING MULTIPLIER in respect of CALCULATION DAY t-1 as calculated in accordance with Section 4.1.15

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 EXCESS RETURN LEVEL of the INDEX $Index_t^{ER}$ is calculated in accordance with the following formula:

- In relation to START DATE t_0:

$$Index_{t_0}^{ER} = 100$$

- On each following CALCULATION DAY t:

$$Index_t^{ER} = Index_{t-1}^{ER} + Index_t^{TR} - Index_{t-1}^{TR} \times \left(1 + ON_{t-1} \times \frac{Act(t-1,t)}{360}\right)$$

The TOTAL RETURN LEVEL of the INDEX $Index_t^{TR}$ is calculated in accordance with the following formula:

- In relation to START DATE t_0:

$$Index_{t_0}^{TR} = 100$$

- On each CALCULATION DAY t following the START DATE:

$$Index_t^{TR} = PortfolioMtM_t + Cash_t$$

Where:

$Index_t^{TR}$: means the TOTAL RETURN LEVEL of the INDEX on CALCULATION DAY t

$Index_{t-1}^{ER}$: means the EXCESS RETURN LEVEL of the INDEX on CALCULATION DAY t-1

$Index_{t-1}^{TR}$: means the TOTAL RETURN LEVEL of the INDEX on CALCULATION DAY t-1

ON_{t-1} : Overnight rate (ESTRON Index) level on CALCULATION DAY t-1 (or if such a rate is not available for any reason the immediately preceding rate)

$Act(t-1,t)$: means the number of calendar days from, and including, CALCULATION DAY t-1 to, but excluding the CALCULATION DAY t

$PortfolioMtM_t$: means the PORTFOLIO MARK-TO-MARKET in respect of CALCULATION DAY t

$Cash_t$: means the CASH AMOUNT in respect of CALCULATION DAY t

4.1.1. Portfolio Mark-To-Market

In relation to CALCULATION DAY t, the PORTFOLIO MARK-TO-MARKET $PortfolioMtM_t$ is calculated in accordance with the following formula:

$$PortfolioMtM_t = \sum_{\substack{Q \in COP_t \\ TU_Q > t \text{ AND } TE_Q > t}} Units_{TR_{Q,Q}}^{exec} \times \left(S_{t,Q}\right)$$

With:

COP_t: each OPTION Q comprising the CONTINUING OPTION PORTFOLIO in respect of CALCULATION DAY t

$Units_{TR_{Q},Q}^{exec}$: the NUMBER OF EXECUTION UNITS in respect of OPTION Q from the CONTINUING OPTION PORTFOLIO notionally traded on TRADE DATE TR_Q

$S_{t,Q}$: means the SETTLEMENT PRICE of OPTION Q in respect of CALCULATION DAY t

TU_Q: means the UNWIND DATE in respect of OPTION Q

TE_Q: means the EXPIRATION DATE in respect of OPTION Q

4.1.2. Continuing Option Portfolio

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

- TRADE DATE (TR_Q) in respect of OPTION Q falls on or prior to CALCULATION DAY t
- EXPIRATION DATE (TE_Q) in respect of OPTION Q falls strictly after CALCULATION DAY t
- UNWIND DATE (TU_Q) in respect of OPTION Q falls strictly after CALCULATION DAY t

4.1.3. Expiring Option Portfolio

In relation to CALCULATION DAY t, the EXPIRING OPTION PORTFOLIO EOP_t is the set comprising of those OPTIONS Q that each satisfy the following criteria:

- TRADE DATE (TR_Q) in respect of OPTION Q falls prior to CALCULATION DAY t
- EXPIRATION DATE (TE_Q) in respect of OPTION Q falls on the CALCULATION DAY t.

4.1.4. Unwinding Option Portfolio

In relation to CALCULATION DAY t, the UNWINDING OPTION PORTFOLIO UOP_t is the set comprising of those OPTIONS Q that each satisfy the following criteria:

- EXPIRATION DATE (TE_Q) in respect of OPTION Q falls strictly after CALCULATION DAY t
- UNWIND DATE (TU_Q) in respect of OPTION Q falls on the CALCULATION DAY t.

4.1.5. New Option Portfolio

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

- TRADE DATE (TR_Q) in respect of OPTION Q falls on CALCULATION DAY t

4.1.6. Cash Amount

The CASH AMOUNT $Cash_t$ is calculated in accordance with the following formula:

- In relation to START DATE t_0:

$$Cash_{t_0} = 100$$

- In relation to any CALCULATION DAY t following the START DATE:

$$Cash_t = Cash_{t-1} \times \left(1 + ON_{t-1} \times \frac{ACT_{t-1,t}}{360}\right) - PR_t + EV_t + UV_t$$

With:

PR_t: the PREMIUM PAID in respect of CALCULATION DAY t

EV_t: the EXERCISE VALUES in respect of CALCULATION DAY t

UV_t: the UNWIND VALUES in respect of CALCULATION DAY t

ON_{t-1}: the Overnight rate (ESTRON Index) level as of the CALCULATION DAY t-1 (or if such a rate is not available for any reason the immediately preceding rate)

$ACT_{t-1,t}$: the number of calendar days from, and including, CALCULATION DAY t-1 to, but excluding CALCULATION DAY t

4.1.7. Premium Paid

In relation to CALCULATION DAY t, the PREMIUM PAID PR_t is calculated in accordance with the following formula:

$$PR_t = \sum_{Q \in NOP_t} Units^{exec}_{TR_Q,Q} \times Max\left(0, S_{t,Q} + sign\left(Units^{exec}_{TR_Q,Q}\right) \times f_Q\right)$$

With:

NOP_t: each OPTION Q comprising the NEW OPTION PORTFOLIO in respect of CALCULATION DAY t

$Units^{exec}_{TR_Q,Q}$: the NUMBER OF EXECUTION UNITS in respect of OPTION Q from the NEW OPTION PORTFOLIO notionally traded on TRADE DATE TR_Q

$S_{t,Q}$: means the SETTLEMENT PRICE of OPTION Q in respect of CALCULATION DAY t

$sign(x)$: 1 if $x > 0$ otherwise -1

f_Q: the FRICTION of OPTION Q in respect of CALCULATION DAY t

4.1.8. Exercise Values

In relation to CALCULATION DAY t, the EXERCISE VALUES EV_t is calculated in accordance with the following formula:

$$EV_t = \sum_{Q \in EOP_t} Units^{exec}_{TR_Q,Q} \times Payout_Q$$

With:

EOP_t: each OPTION Q comprising the EXPIRING OPTION PORTFOLIO in respect of CALCULATION DAY t

$Units^{exec}_{TR_Q,Q}$: the NUMBER OF EXECUTION UNITS in respect of OPTION Q from the EXPIRING OPTION PORTFOLIO notionally traded on TRADE DATE TR_Q

$Payout_Q$: the PAYOUT of OPTION Q

4.1.9. Unwind Values

In relation to CALCULATION DAY t, the UNWIND VALUES UV_t is calculated in accordance with the following formula:

$$UV_t = \sum_{Q \in UOP_t} Units^{exec}_{TR_Q,Q} \times Max\left(0, S_{t,Q} - sign\left(Units^{exec}_{TR_Q,Q}\right) \times f_Q\right)$$

With:

UOP_t: each OPTION Q comprising the UNWINDING OPTION PORTFOLIO in respect of CALCULATION DAY t

$Units^{exec}_{TR_Q,Q}$: the NUMBER OF EXECUTION UNITS in respect of OPTION Q from the UNWINDING OPTION PORTFOLIO notionally traded on TRADE DATE TR_Q

$S_{t,Q}$: means the SETTLEMENT PRICE of OPTION Q in respect of CALCULATION DAY t

$sign(x)$: 1 if $x > 0$ otherwise -1

f_Q: the FRICTION of OPTION Q in respect of CALCULATION DAY t

4.1.10. Friction

In relation to CALCULATION DAY t, the following FRICTIONS f_Q are applied to each OPTION Q depending on the EXPIRATION DATE for each respective OPTION:

$$f_Q = \begin{cases} Max\left(0.2, Max\left(0.1\%, 0.4\% \times \sigma_{t,K_Q,TE_Q}\right) \times vega_{t,Q}\right), & TE_Q = T_{FS,TR_Q} \\ Max\left(0.2, Max\left(0.15\%, 0.6\% \times \sigma_{t,K_Q,TE_Q}\right) \times vega_{t,Q}\right), & TE_Q = T_{M,TR_Q} \end{cases}$$

With:

σ_{t,K_Q,TE_Q}: means the IMPLIED VOLATILITY in respect of the CALCULATION DAY t in relation to EXPIRATION DATE TE_Q and STRIKE PRICE K_Q, calculated in accordance with 4.1.28.

$vega_{t,Q}$ the VEGA of OPTION Q in respect of CALCULATION DAY t

TE_Q: means the EXPIRATION DATE of the respective OPTION Q

T_{FS,TR_Q}: is the FORWARD START DATE in relation to PORTFOLIO REVIEW DATE TR_Q of OPTION Q .

T_{M,TR_Q}: is the MATURITY DATE in respect of PORTFOLIO REVIEW DATE TR_Q.

4.1.11. Drift Term of the Fixed Strike FVA

In relation to CALCULATION DAY t, the DRIFT TERM OF THE FIXED STRIKE FVA μ_t^{FVA} as of CALCULATION DAY t is calculated in accordance with the following formula:

$$\mu_t^{FVA} = \frac{\log\left(Fwd_{t,T_{M,TR(t)}}\right) - \log\left(Fwd_{t,T_{FS,TR(t)}}\right)}{act(T_{FS,TR(t)}, T_{M,TR(t)})/360}$$

With:

$Fwd_{t,T_{M,TR(t)}}$: the FORWARD in relation to CALCULATION DAY t and an EXPIRATION DATE $T_{M,TR(t)}$ as calculated in accordance with Section 4.1.26

$Fwd_{t,T_{FS,TR(t)}}$: the FORWARD in relation to CALCULATION DAY t and an EXPIRATION DATE $T_{FS,TR(t)}$ as calculated in accordance with Section 4.1.26

$TR(t)$: means in respect of CALCULATION DAY t, the PORTFOLIO REVIEW DATE falling on or immediately following such CALCULATION DAY t

$T_{FS,TR(t)}$: is the FORWARD START DATE in relation to PORTFOLIO REVIEW DATE $TR(t)$.

$T_{M,TR(t)}$: MATURITY DATE in respect of PORTFOLIO REVIEW DATE $TR(t)$.

$act(T_{FS,TR(t)}, T_{M,TR(t)})$: means the number of calendar days from, and including, an EXPIRATION DATE $T_{FS,TR(t)}$ to, but excluding the EXPIRATION DATE $T_{M,TR(t)}$ $\log(.)$: The NATURAL LOGARITHM FUNCTION

4.1.12. Discount Factor of the Fixed Strike FVA

In relation to CALCULATION DAY t, the DISCOUNT FACTOR of the FIXED STRIKE FVA $DF_{t,FVA}$ as of CALCULATION DAY t is calculated in accordance with the following formula:

$$DF_t^{FVA} = \frac{DF_{t,T_{M,TR(t)}}}{DF_{t,T_{FS,TR(t)}}}$$

With:

$DF_{t,T_{M,TR(t)}}$: the DISCOUNT FACTOR in relation to CALCULATION DAY t and EXPIRATION DATE $T_{M,TR(t)}$ as calculated in accordance with Section 4.1.26

$DF_{t,T_{FS,TR(t)}}$: the DISCOUNT FACTOR in relation to CALCULATION DAY t and EXPIRATION DATE $T_{FS,TR(t)}$ as calculated in accordance with Section 4.1.26

$TR(t)$: means in respect of CALCULATION DAY t, the PORTFOLIO REVIEW DATE falling on or immediately following such CALCULATION DAY t

4.1.13. Forward Volatility

In relation to CALCULATION DAY t, the FORWARD VOLATILITY σ_t^{FVA} as of CALCULATION DAY t is calculated as the volatility σ for which the SETTLEMENT PRICE of the Long Vanilla Option with STRIKE PRICE and EXPIRATION DATE equals the sum of the following components:

- Theoretical quantities of options within the STRIP of Listed Put and Listed Call Options Set $Units_{t,Q}^{theo}(\sigma_t^{FVA})$ multiplied by their respective SETTLEMENT PRICE $S_{t,Q}^{Put}$ and $S_{t,Q}^{Call}$
- Theoretical quantities of options within the Straddle Options Set $Units_{t,Q}^{theo}(\sigma_t^{FVA})$ multiplied by their respective SETTLEMENT PRICE $S_{t,Q}^{Put}$ and $S_{t,Q}^{Call}$ (as applicable)
- The difference of the respective SETTLEMENT PRICE of the Call and Put options in the Synthetic Future Options Set, i.e. $\left(S_{t,Q}^{Call} - S_{t,Q}^{Put}\right)$ multiplied by the DELTA of the Put OPTION Q within the Synthetic Future Options Set:

$$delta_{t,Q}\left(Put, K_Q \times e^{\mu_t^{FVA} \times act(T_{FS,TR(t)}, T_{M,TR(t)})/360}, DF_t^{FVA}, DCFT_{T_{FS,t}, T_{M,t}}, K_t^{FVA}, \sigma_t^{FVA}\right)$$

- PREMIUM discounted to Forward Start Date, represented as: $DF_{t,T_{FS,TR(t)}} \times Premium\left(Put, e^{\mu_t^{FVA} \times act(T_{FS,TR(t)}, T_{M,TR(t)})/360}, DF_t^{FVA}, DCFT_{T_{FS,TR(t)}, T_{M,TR(t)}}, K_t^{FVA}, \sigma_t^{FVA}\right)$

With:

$Units_{t,Q}^{theo}$: means the NUMBER OF THEORETICAL UNITS of the OPTION Q in respect of CALCULATION DAY t

$S_{t,Q}^{Put}$: means the SETTLEMENT PRICE of Listed Put OPTION Q in respect of CALCULATION DAY t

$S_{t,Q}^{Call}$: means the SETTLEMENT PRICE of Listed Call OPTION Q in respect of CALCULATION DAY t

$delta_{t,Q}$: means the DELTA of the OPTION Q as of CALCULATION DAY t as defined in Section 4.1.23

K_Q: means the STRIKE PRICE of the respective OPTION Q from the Listed Put Options Set

μ_t^{FVA}: means the DRIFT TERM OF THE FIXED STRIKE FVA in respect of CALCULATION DAY t calculated in accordance with Section 4.1.11

$DF_{t,T_{FS,TR(t)}}$: means the DISCOUNT FACTOR in respect of CALCULATION DAY t and EXPIRATION DATE $T_{FS,TR(t)}$ calculated in accordance with Section 4.1.27

DF_t^{FVA}: means the DISCOUNT FACTOR of the FIXED STRIKE FVA in respect of CALCULATION DAY t calculated in accordance with Section 4.1.12

K_t^{FVA}: means the ELIGIBLE LISTED STRIKE corresponding to EXPIRATION DATE $T_{M,TR(t)}$ and closest to 90% of the UNDERLYING INDEX CLOSING LEVEL in respect of the CALCULATION DAY t

σ_t^{FVA}: means the FORWARD VOLATILITY in respect of the CALCULATION DAY t calculated in accordance with Section 4.1.13.

$DCFT_{T_{FS,TR(t)},T_{M,TR(t)}}$: The DAY COUNT FRACTION in respect to CALCULATION DAY $T_{M,TR(t)}$ as of CALCULATION DAY $T_{FS,TR(t)}$.

$T_{FS,TR(t)}$: is the FORWARD START DATE in relation to PORTFOLIO REVIEW DATE $TR(t)$.

$T_{M,TR(t)}$: MATURITY DATE in respect of PORTFOLIO REVIEW DATE $TR(t)$.

$act(T_{FS,TR(t)}, T_{M,TR(t)})$: means the number of calendar days from, and including, CALCULATION DAY $T_{FS,TR(t)}$ to, but excluding the CALCULATION DAY $T_{M,TR(t)}$

$TR(t)$: means in respect of CALCULATION DAY t, the PORTFOLIO REVIEW DATE falling on or immediately following such CALCULATION DAY t

$Premium(.)$: the PREMIUM as calculated in accordance with section 4.1.17.

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

4.1.14. Portfolio Vega

The PORTFOLIO VEGA $VegaPtf_t$ as of CALCULATION DAY t is the sum of the following components:

- Theoretical quantities of options within the STRIP of Listed Put Options Set $Units_{t,Q}^{theo}$ multiplied by their respective Vega:

$$\frac{\sum_{Q \epsilon Strip\ of\ Listed\ Put\ Options\ Set} Units_{t,Q}^{theo} \times vega_{t,Q}\left(Put, Fwd_{t,TE_Q}, DF_{t,TE_Q}, DCFT_{t,TE_Q}, K_Q, \sigma_{t,K_Q,TE_Q}\right)}{100}$$

- Theoretical quantities of options within the STRIP of Listed Call Options Set $Units_{t,Q}^{theo}$ multiplied by their respective Vega:

$$\frac{\sum_{Q \epsilon Strip\ of\ Listed\ Call\ Options\ Set} Units_{t,Q}^{theo} \times vega_{t,Q}\left(Call, Fwd_{t,TE_Q}, DF_{t,TE_Q}, DCFT_{t,TE_Q}, K_Q, \sigma_{t,K_Q,TE_Q}\right)}{100}$$

- Theoretical quantities of options within the Straddle Options Set $Units_{t,Q}^{theo}$ multiplied by their respective Vega:

$$\frac{\sum_{Q \epsilon Straddle\ Options\ Set} Units_{t,Q}^{theo} \times vega_{t,Q}\left(OptionType, Fwd_{t,TE_Q}, DF_{t,TE_Q}, DCFT_{t,TE_Q}, K_Q, \sigma_{t,K_Q,TE_Q}\right)}{100}$$

- Theoretical quantity of Long Vanilla Option multiplied by its Vega:

$$\frac{\sum_{Q \epsilon Long\ Vanilla\ Put\ Option} Units_{t,Q}^{theo} \times vega_{t,Q}\left(Put, Fwd_{t,TE_Q}, DF_{t,TE_Q}, DCFT_{t,TE_Q}, K_Q, \sigma_{t,K_Q,TE_Q}\right)}{100}$$

With:

$Units_{t,Q}^{theo}$: means the NUMBER OF THEORETICAL UNITS of the OPTION Q in respect of CALCULATION DAY t

$vega_{t,Q}$: means the VEGA of the OPTION Q as of CALCULATION DAY t as defined in Section 4.1.22

K_Q: means the STRIKE PRICE of the respective Put OPTION Q from the Listed Put Options Set

Fwd_{t,TE_Q}: means the FORWARD in respect of CALCULATION DAY t and EXPIRATION DATE TE_Q calculated in accordance with Section 4.1.26

DF_{t,TE_Q}: means the DISCOUNT FACTOR in respect of CALCULATION DAY t and EXPIRATION DATE TE_Q calculated in accordance with Section 4.1.27

σ_{t,K_Q,TE_Q}: means the IMPLIED VOLATILITY in respect of the CALCULATION DAY t in relation to EXPIRATION DATE TE_Q and STRIKE PRICE K_Q, calculated in accordance with 4.1.28

$DCFT_{t,TE_Q}$: The DAY COUNT FRACTION in respect to EXPIRATION DATE TE_Q as of CALCULATION DAY t

4.1.15. Dynamic Sizing Multiplier

The DYNAMIC SIZING MULTIPLIER DS_t as of CALCULATION DAY t as calculated according to the following formula:

$$DS_t = Max\left(0.5, Min\left(1.5, 0.5 + \left(ExpectedRollUp_t - \frac{1}{3}\%\right) \times (1.5 - 0.5)/(1\% - \frac{1}{3}\%)\right)\right)$$

Where:

$$ExpectedRollUp_t = \frac{\sigma_{t,K_t^{FVA},TSS_{TR(t)}} - \sigma_t^{FVA}}{DCFT_{t,T_{FS,TR(t)}}}$$

With:

$T_{SS,TR(t)}$: the spot start date which is determined as a CALCULATION DAY that falls 252 Calculation Days following $TR(t)$

$\sigma_{t,K_t^{FVA},TSS_{TR(t)}}$: the IMPLIED VOLATILITY as of CALCULATION DAY t in relation to STRIKE PRICE K_t^{FVA} and EXPIRATION DATE $T_{SS,TR(t)}$ as calculated in accordance with Section 4.1.28

σ_t^{FVA} : the FORWARD VOLATILITY as of CALCULATION DAY t as calculated in accordance with Section 4.1.13

$DCFT_{t,T_{FS,TR(t)}}$: the DAY COUNT FRACTION in respect to EXPIRATION DATE $T_{FS,TR(t)}$ as of CALCULATION DAY t

$TR(t)$: means in respect of CALCULATION DAY t, the PORTFOLIO REVIEW DATE immediately following and including such date

Max: means the MAXIMUM FUNCTION

Min: means the MINIMUM FUNCTION

4.1.16. Payout

In relation to OPTION Q, the PAYOUT $Payout_Q$ is calculated in accordance with the following formula:

$$Payout_Q = \begin{cases} \text{Max}\left(0, K_Q - USI_{TE_Q}\right) & \text{if type of Option } Q \text{ is Put} \\ \text{Max}\left(0, USI_{TE_Q} - K_Q\right) & \text{if type of Option } Q \text{ is Call} \end{cases}$$

With:

Max: means the MAXIMUM FUNCTION

USI_{TE_Q}: the UNDERLYING SETTLEMENT INDEX LEVEL as of EXPIRATION DATE TE_Q

K_Q : the STRIKE PRICE of OPTION Q

TE_Q: the EXPIRATION DATE of OPTION Q

4.1.17. Premium

In relation to CALCULATION DAY t, the PREMIUM of OPTION Q as of CALCULATION DAY t is calculated in accordance with the following formula:

$$Premium\left(OptionType, Fwd_{t,TE_Q}, DF_{t,TE_Q}, DCFT, K_Q, \sigma_{t,K_Q,TE_Q}\right) = BlackOptionPrice\left(OptionType, Fwd_{t,TE_Q}, DF_{t,TE_Q}, DCFT, K_Q, \sigma_{t,K_Q,TE_Q}\right)$$

With:

$BlackOptionPrice\left(OptionType, Fwd_{t,TE_Q}, DF_{t,TE_Q}, K_Q, t, TE_Q, \sigma_{t,K_Q,TE_Q}\right)$: the BLACK OPTION PRICE of OPTION Q as of CALCULATION DAY t as defined in Section 4.1.18

Fwd_{t,TE_Q}: the FORWARD in relation to CALCULATION DAY t and EXPIRATION DATE TE_Q as calculated in accordance with Section 4.1.26

DF_{t,TE_Q}: the DISCOUNT FACTOR in relation to CALCULATION DAY t and EXPIRATION DATE TE_Q as calculated in accordance with Section 4.1.24

σ_{t,K_Q,TE_Q}: the IMPLIED VOLATILITY as of CALCULATION DAY t in relation to STRIKE PRICE K_Q of OPTION Q and EXPIRATION DATE TE_Q as calculated in accordance with Section 4.1.26

K_Q : the STRIKE PRICE of OPTION Q

TE_Q: the EXPIRATION DATE of OPTION Q

$DCFT$: The DAY COUNT FRACTION.

4.1.18. Black Option Price

The BLACK OPTION PRICE is calculated in relation to any ELIGIBLE LISTED OPTION with STRIKE PRICE K and EXPIRATION DATE TE on any CALCULATION DAY t in accordance with the following formula:

$$BlackOptionPrice\left(Put, Fwd_{t,TE}, DF_{t,TE}, DCFT, K, \sigma_{t,K,TE}\right) = DF_{t,TE} \times \left(K \times IN\left(-d_{2,K,TE,t}\left(\sigma_{t,K,TE}\right)\right) - Fwd_{t,TE} \times IN\left(-d_{1,K,TE,t}\left(\sigma_{t,K,TE}\right)\right)\right)$$

$$BlackOptionPrice\left(Call, Fwd_{t,TE}, DF_{t,TE}, DCFT, K, \sigma_{t,K,TE}\right) = DF_{t,TE} \times \left(Fwd_{t,TE} \times IN\left(d_{1,K,TE,t}\left(\sigma_{t,K,TE}\right)\right) - K \times IN\left(d_{2,K,TE,t}\left(\sigma_{t,K,TE}\right)\right)\right)$$

- Where:

$$d_{1,K,TE,t}(\sigma) = \frac{\log\left(\frac{Fwd_{t,TE}}{K}\right) + \frac{\sigma^2}{2} \times DCFT_{t,TE}}{\sigma \times \sqrt{DCFT_{t,TE}}}$$

and

$$d_{2,K,TE,t}(\sigma) = d_{1,K,TE,t}(\sigma) - \sigma \times \sqrt{DCFT_{t,TE}}$$

With:

$DF_{t,TE}$: the DISCOUNT FACTOR in relation to CALCULATION DAY t and EXPIRATION DATE TE

$Fwd_{t,TE}$: the FORWARD in relation to CALCULATION DAY t and EXPIRATION DATE TE

$\sigma_{t,K,TE}$: means the Implied Volatility σ in respect of CALCULATION DAY t in relation to EXPIRATION DATE TE and STRIKE PRICE K

$DCFT_{t,TE}$: The DAY COUNT FRACTION in respect to EXPIRATION DATE TE as of CALCULATION DAY t.

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

$IN(.)$: CUMULATIVE DISTRIBUTION FUNCTION of the standard normal distribution

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

4.1.19. Eligible Listed Option Implied Volatility

The ELIGIBLE LISTED OPTION IMPLIED VOLATILITY in relation to an ELIGIBLE LISTED OPTION with STRIKE PRICE K and EXPIRATION DATE TE on any CALCULATION DAY t is calculated as the IMPLIED VOLATILITY for which the Black Price for such option matches the SETTLEMENT PRICE:

$$S_{t,O}^{TE,K} = BlackOptionPrice\left(OptionType, Fwd_{t,TE}, DF_{t,TE}, K, t, TE, \sigma\right)$$

With:

$S_{t,O}^{TE,K}$: The SETTLEMENT PRICE in respect of CALCULATION DAY t of the ELIGIBLE LISTED OPTION O expiring on EXPIRATION DATE TE with a STRIKE PRICE K

$BlackOptionPrice$: The BLACK OPTION PRICE as determined in accordance with Section 4.1.18

$OptionType$: The OPTION TYPE of ELIGIBLE LISTED OPTION $O_{m,t}^{k}$

$Fwd_{t,TE}$: the FORWARD in relation to CALCULATION DAY t and EXPIRATION DATE TE

$DF_{t,TE}$: the DISCOUNT FACTOR in relation to CALCULATION DAY t and EXPIRATION DATE TE

4.1.20. Delta

The DELTA $Delta_{t,Q}$ of OPTION Q as of CALCULATION DAY t is:

- if the type of Option Q is "Call", calculated in accordance with the following formula:

$$Delta_{t,Q} = Delta(Call, Fwd_{t,TE}, DF_{t,TE}, DCFT, K, \sigma_{t,K,TE}) = DF_{t,TE_Q} \times IN\left(d_{1,Q,t}\left(\sigma_{t,K,TE_Q}\right)\right)$$

- if the type of Option Q is "Put", calculated in accordance with the following formula:

$$Delta_{t,Q} = Delta(Put, Fwd_{t,TE}, DF_{t,TE}, DCFT, K, \sigma_{t,K,TE}) = DF_{t,TE_Q} \times \left(IN\left(d_{1,Q,t}\left(\sigma_{t,K,TE_Q}\right)\right) - 1\right)$$

Where:

$$d_{1,Q,t}(K) = \frac{\log\left(\frac{Fwd_{t,TE_Q}}{K}\right) + \frac{{\sigma_{t,K,TE_Q}}^2}{2} \times DCFT_{t,TE_Q}}{\sigma_{t,K,TE_Q} \times \sqrt{DCFT_{t,TE_Q}}}$$

With:

DF_{t,TE_Q}: the DISCOUNT FACTOR in respect to EXPIRATION DATE TE_Q of OPTION Q as of CALCULATION DAY t

Fwd_{t,TE_Q}: FORWARD in respect to EXPIRATION DATE TE_Q of OPTION Q as of CALCULATION DAY t

K: The STRIKE PRICE of OPTION Q

$DCFT_{t,TE_Q}$: The DAY COUNT FRACTION in respect to EXPIRATION DATE TE_Q of OPTION Q as of CALCULATION DAY t

$IN(.)$: CUMULATIVE DISTRIBUTION FUNCTION of the standard normal distribution

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

σ_{t,K,TE_Q}: the IMPLIED VOLATILITY as of CALCULATION DAY t in relation to STRIKE PRICE K as of EXPIRATION DATE TE_Q of OPTION Q

4.1.21. Day Count Fraction

The DAY COUNT FRACTION $DCFT_{T_x,T_y}$ in respect of CALCULATION DAY T_y as of CALCULATION DAY T_x is (i) the number of CALCULATION DAYS from (and including) CALCULATION DAY T_x to (and excluding) CALCULATION DAY T_y *divided by* (ii) 252.

4.1.22. Vega

The VEGA of OPTION Q as of CALCULATION DAY t is calculated as follows:

$$Vega_{t,Q} = \frac{\exp\left(-{d_{1,Q,t}\left(\sigma_{t,K_Q,TE_Q}\right)^2}/{2}\right) \times DF_{t,TE_Q} \times Fwd_{t,TE_Q} \times \sqrt{DCFT_{t,TE_Q}}}{\sqrt{2 \times \pi}}$$

Where:

$$d_{1,Q,t}(\sigma) = \frac{\log\left(\frac{Fwd_{t,TE_Q}}{K_Q}\right) + \frac{\sigma^2}{2} \times DCFT_{t,TE_Q}}{\sigma \times \sqrt{DCFT_{t,TE_Q}}}$$

With:

Fwd_{t,TE_Q}: FORWARD in respect to EXPIRATION DATE TE_Q of OPTION Q as of CALCULATION DAY t

DF_{t,TE_Q}: DISCOUNT FACTOR in respect to EXPIRATION DATE TE_Q of OPTION Q as of CALCULATION DAY t

K_Q: The STRIKE PRICE of OPTION Q

$DCFT_{t,TE_Q}$: The DAY COUNT FRACTION in respect to EXPIRATION DATE TE_Q of OPTION Q as of CALCULATION DAY t

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

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

σ_{t,K_Q,TE_Q}: the IMPLIED VOLATILITY as of CALCULATION DAY t in relation to STRIKE PRICE K_Q of OPTION Q and EXPIRATION DATE TE_Q

4.1.23. Gamma

The GAMMA of OPTION Q as of CALCULATION DAY t is calculated as follows:

$$gamma_{t,Q} = \frac{\exp\left(-{d_{1,Q,t}\left(\sigma_{t,K_Q,TE_Q}\right)^2}/{2}\right) \times DF_{t,TE_Q}}{\sqrt{2 \times \pi} \times Fwd_{t,TE_Q} \times \sigma_{t,K_Q,TE_Q} \times \sqrt{DCFT_{t,TE_Q}}}$$

Where:

$$d_{1,Q,t}\left(\sigma_{t,K_Q,TE_Q}\right) = \frac{\log\left(\frac{Fwd_{t,TE_Q}}{K_Q}\right) + \frac{\sigma^2}{2} \times DCFT_{t,TE_Q}}{\sigma \times \sqrt{DCFT_{t,TE_Q}}}$$

With:

Fwd_{t,TE_Q}: FORWARD in respect to EXPIRATION DATE TE_Q of OPTION Q as of CALCULATION DAY t

DF_{t,TE_Q}: DISCOUNT FACTOR in respect to EXPIRATION DATE TE_Q of OPTION Q as of CALCULATION DAY t

K_Q: The STRIKE PRICE of OPTION Q

$DCFT_{t,TE_Q}$: The DAY COUNT FRACTION in respect to EXPIRATION DATE TE_Q of OPTION Q as of CALCULATION DAY t

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

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

σ_{t,K_Q,TE_Q}: the IMPLIED VOLATILITY as of CALCULATION DAY t in relation to STRIKE PRICE K_Q of OPTION Q and EXPIRATION DATE TE_Q

4.1.24. Discount Factor

In relation to CALCULATION DAY t and EXPIRATION DATE TE, the DISCOUNT FACTOR $DF_{t,TE}$ is calculated as follows:

$$DF_{t,TE} = \exp\left(\log\left(DF_{t,T_1}\right) + \frac{DC_{T_1,TE} \times \left(\log\left(DF_{t,T_2}\right) - \log\left(DF_{t,T_1}\right)\right)}{DC_{T_1,T_2}}\right)$$

With:

T_1: means the ELIGIBLE EXPIRATION DATE T_1 selected in accordance with Section 4.1.25

T_2: means the ELIGIBLE EXPIRATION DATE T_2 selected in accordance with Section 4.1.25

DF_{t,T_1}: the DISCOUNT FACTOR in relation to CALCULATION DAY t and ELIGIBLE EXPIRATION DATE T_1 calculated in accordance with Section 4.1.27. Provided that if $T_1 = t$, then the DISCOUNT FACTOR in relation to CALCULATION DAY t and ELIGIBLE EXPIRATION DATE T_1 is 1.

DF_{t,T_2}: the DISCOUNT FACTOR in relation to CALCULATION DAY t and ELIGIBLE EXPIRATION DATE T_2 calculated in accordance with Section 4.1.27.

$DC_{T_1,TE}$: means the NUMBER OF CALENDAR DAYS in the period commencing on (and including) ELIGIBLE EXPIRATION DATE T_1 and ending on (but excluding) EXPIRATION DATE TE.

DC_{T_1,T_2}: means the NUMBER OF CALENDAR DAYS in the period commencing on (and including) ELIGIBLE EXPIRATION DATE T_1 and ending on (but excluding) ELIGIBLE EXPIRATION DATE T_2.

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

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

4.1.25. Maturity Selection

In relation to CALCULATION DAY t and EXPIRATION DATE TE, two expiration dates T_1, T_2 are selected with regards to TE following the below methodology:

- Where EXPIRATION DATE TE falls prior to any EXPIRATION DATE within the set of ELIGIBLE EXPIRATION DATES, $T_1 = t$ and T_2 is the shortest ELIGIBLE EXPIRATION DATE in respect of CALCULATION DAY t.
- Where EXPIRATION DATE TE falls strictly after any EXPIRATION DATE within the set of ELIGIBLE EXPIRATION DATES, $T_1 = T_2 = TE$.
- Otherwise, (i) T_1 is the furthest ELIGIBLE EXPIRATION DATE in respect of CALCULATION DAY t that is less than or equal to TE, and (ii) T_1 is the shortest ELIGIBLE EXPIRATION DATE in respect of CALCULATION DAY t that is greater than or equal to TE.

4.1.26. Forward

In relation to CALCULATION DAY t and EXPIRATION DATE TE, the FORWARD $Fwd_{t,TE}$ is calculated as follows:

$$Fwd_{t,TE} = \exp\left(\log\left(Fwd_{t,T_1}\right) + \frac{DC_{T_1,TE} \times \left(\log\left(Fwd_{t,T_2}\right) - \log\left(Fwd_{t,T_1}\right)\right)}{DC_{T_1,T_2}}\right)$$

With:

T_1: means the ELIGIBLE EXPIRATION DATE T_1 selected in accordance with Section 4.1.25 Maturity Selection

T_2: means the ELIGIBLE EXPIRATION DATE T_2 selected in accordance with Section 4.1.25

Fwd_{t,T_1}: the FORWARD in relation to CALCULATION DAY t and EXPIRATION DATE T_1 calculated in accordance with Section 4.1.27. Provided that $T_1 = t$, then the FORWARD in relation to CALCULATION DAY t and EXPIRATION DATE T_1 is the UNDERLYING SETTLEMENT INDEX LEVEL as of CALCULATION DAY t

Fwd_{t,T_2}: the FORWARD in relation to CALCULATION DAY t and EXPIRATION DATE T_2 calculated in accordance with Section 4.1.27

DC_{T_1,T_2}: means the NUMBER OF CALENDAR DAYS in the period commencing on (and including) ELIGIBLE EXPIRATION DATE T_1 and ending on (but excluding) ELIGIBLE EXPIRATION DATE T_2.

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

4.1.27. Discount Factor and Forward for an Eligible Expiration Date

In relation to CALCULATION DAY t, for an EXPIRATION DATE of an ELIGIBLE LISTED OPTION, the DISCOUNT FACTOR and FORWARD for that EXPIRATION DATE shall be calculated in accordance with the following methodology:

For each STRIKE PRICE $K_{i,j}$, j ∈ {1,2, … , n_i } for the selected EXPIRATION DATE Ti on which both call and put prices are available on the relevant exchange , the Black Scholes model shall be used to calculate the "call-put parity" relation:

$$C_t^{Ti,Ki,j} - P_t^{Ti,Ki,j} = DF_i \times \left(Fwd_i - K_{i,j}\right)$$

With:

$C_t^{Ti,K_{i,j}}$: the SETTLEMENT PRICE in respect of CALCULATION DAY t of the ELIGIBLE LISTED CALL OPTION expiring on EXPIRATION DATE T_i with a STRIKE PRICE of $K_{i.j}$

$P_t^{Ti,K_{i,j}}$: the SETTLEMENT PRICE in respect of CALCULATION DAY t of the ELIGIBLE LISTED PUT OPTION expiring on EXPIRATION DATE T_i with a STRIKE PRICE of $K_{i.j}$

DF_i: the DISCOUNT FACTOR in relation to EXPIRATION DATE Ti

Fwd_i: the FORWARD in relation to EXPIRATION DATE Ti

$K_{i,j}$: the STRIKE PRICE $K_{i,j}$, j ∈ {1,2, … , n_i } for the selected EXPIRATION DATE Ti

Using the put-call parity formula for each strike, the following linear model is obtained:

$$Y = \alpha + \beta \times X$$

With for any j ∈ {1,2, … , n_i }

$$Y_j = C(K_{i,j}) - P(K_{i,j})$$
$$X_j = K_{i,j}$$

A linear regression of the model set out above is performed using the ordinary least squares estimation:

$$\beta = \frac{\sum_{j=1}^{n_i}(X_j - \bar{X})(Y_j - \bar{Y})}{\sum_{j=1}^{n_i}(X_j - \bar{X})^2}$$
$$\alpha = \bar{Y} - \beta \times \bar{X}$$

With:

$$\bar{X} = \frac{\sum_{j=1}^{n_i} X_j}{n_i};\ \bar{Y} = \frac{\sum_{j=1}^{n_i} Y_j}{n_i}$$

So for any j ∈ {1,2, … , n_i }, DF_i and Fwd_i are determined using the following relations:

$$Y_j = \alpha + \beta \times X_j$$
$$DF_i \times (Fwd_i - K_{i,j}) = \alpha + \beta \times K_{i,j}$$
$$DF_i = -\beta$$
$$Fwd_i = -\frac{\alpha}{\beta}$$

4.1.28. Implied Volatility

In relation to CALCULATION DAY t, STRIKE PRICE K and EXPIRATION DATE TE, the IMPLIED VOLATILITY $\sigma_{t,K,TE}$ is calculated based on the following methodology:

In order to calculate the IMPLIED VOLATILITY, up to four listed options are required.

In relation to CALCULATION DAY t and EXPIRATION DATE TE, two expiration dates T_1, T_2 are selected in accordance with Section 4.1.25.

The DISCOUNT FACTOR and FORWARD for the two selected expiration dates are calculated in accordance with Section 4.1.27.

With respect to each selected ELIGIBLE EXPIRATION DATE T_i, two strikes K_1, and K_2 are selected using the following criteria:

- Where STRIKE PRICE K is strictly lower than the lowest STRIKE PRICE of ELIGIBLE LISTED OPTION in respect of CALCULATION DAY t and EXPIRATION DATE T_i , $K_2 = K_1$, where K_1 is lowest STRIKE PRICE of ELIGIBLE LISTED OPTION in respect of CALCULATION DAY t and EXPIRATION DATE T_i
- Where STRIKE PRICE K is strictly higher than the highest STRIKE PRICE of ELIGIBLE LISTED OPTION in respect of CALCULATION DAY t and EXPIRATION DATE T_i , $K_1 = K_2$, where K_2 is the highest STRIKE PRICE of ELIGIBLE LISTED OPTION in respect of CALCULATION DAY t and EXPIRATION DATE T_i
- Otherwise, (i) K_1 is the highest STRIKE PRICE of ELIGIBLE LISTED OPTION in respect of CALCULATION DAY t and EXPIRATION DATE $T_i$that is less than or equal to STRIKE PRICE K, and (ii) K_2 is the lowest STRIKE PRICE of ELIGIBLE LISTED OPTION in respect of CALCULATION DAY t and EXPIRATION DATE T_i that is higher than or equal to STRIKE PRICE K

The four selected ELIGIBLE LISTED OPTIONS set to be of OPTION TYPE Put when pricing a Put OPTION and OPTION TYPE Call when pricing a Call OPTION.

Once the DISCOUNT FACTOR, FORWARD, EXPIRATION DATE and STRIKE PRICE are determined for the four selected ELIGIBLE LISTED OPTIONS, their implied volatilities are determined in accordance with Section 4.1.19, namely: σ_{t,K_1,T_1} , σ_{t,K_2,T_1} , σ_{t,K_1,T_2} , σ_{t,K_2,T_2}.

The IMPLIED VOLATILITY for the ELIGIBLE LISTED OPTION WITH STRIKE PRICE K and for the two selected ELIGIBLE EXPIRATION DATE T_1, T_2 is thus interpolated as follows:

$$\sigma_{t,K,T_1} = \begin{cases} \sigma_{t,K_1,T_1} + \dfrac{(K-K_1)\times\left(\sigma_{t,K_2,T_1}-\sigma_{t,K_1,T_1}\right)}{(K_2-K_1)} & if\ K_1 \neq K_2 \\ \sigma_{t,K_1,T_1} & otherwise \end{cases}$$

$$\sigma_{t,K,T_2} = \begin{cases} \sigma_{t,K_1,T_2} + \dfrac{(K-K_1)\times\left(\sigma_{t,K_2,T_2}-\sigma_{t,K_1,T_2}\right)}{(K_2-K_1)} & if\ K_1 \neq K_2 \\ \sigma_{t,K_1,T_2} & otherwise \end{cases}$$

Finally, the IMPLIED VOLATILITY $\sigma_{t,K,TE}$ in relation to CALCULATION DAY t, STRIKE PRICE K and EXPIRATION DATE TE is calculated as follows:

$$\sigma_{t,K,TE} = \begin{cases} \sqrt{\dfrac{1}{DC_{t,TE}} \times Max\left(0, \left(\sigma_{t,K,T_1}\right)^2 \times DC_{t,T_1} + \dfrac{DC_{T_1,TE} \times \left[\left(\sigma_{t,K,T_2}\right)^2 \times DC_{t,T_2} - \left(\sigma_{t,K,T_1}\right)^2 \times DC_{t,T_1}\right]}{DC_{T_1,T_2}}\right)} & if\ T_1 \neq T_2 \\ \sigma_{t,K,T_1}, & otherwise \end{cases}$$

With:

σ_{t,K,T_1}: means the IMPLIED VOLATILITY in respect of Calculation Day t with Expiration Date T_1 being an Eligible Expiration Date

σ_{t,K,T_2}: means the IMPLIED VOLATILITY in respect of CALCULATION DAY t with EXPIRATION DATE T_2 being an ELIGIBLE EXPIRATION DATE

DC_{t,T_1}: means the number of CALCULATION DAYS in the period commencing on (and including) CALCULATION DAY t and ending on (but excluding) ELIGIBLE EXPIRATION DATE T_1

DC_{t,T_2}: means the number of CALCULATION DAYS in the period commencing on (and including) CALCULATION DAY t and ending on (but excluding) ELIGIBLE EXPIRATION DATE T_2

$DC_{T_1,TE}$: means the number of CALCULATION DAYS in the period commencing on (and including) ELIGIBLE EXPIRATION DATE T_1 and ending on (but excluding) EXPIRATION DATE TE

$DC_{T_2,TE}$: means the number of CALCULATION DAYS in the period commencing on (and including) ELIGIBLE EXPIRATION DATE T_2 and ending on (but excluding) EXPIRATION DATE TE

4.2. ACCURACY

The level of the INDEX will be rounded to 4 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. 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

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

"**BLACK OPTION PRICE**" shall have the meaning given to it in section 4.1.18.

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

"CALCULATION DAY" is any weekday where the exchange XEUR identified by its MIC is open for business.

"CALCULATION DAY t-1" is CALCULATION DAY immediately CALCULATION DAY t.

"CASH AMOUNT" shall the meaning as defined in section 4.1.6.

"CUMULATIVE DISTRIBUTION FUNCTION" defines the standard normal distribution.

"CONTINUING OPTION PORTFOLIO" has the meaning given to it in section 4.1.2.

"DAY COUNT FRACTION" has the meaning given to it in section 4.1.21.

"DELTA" has the meaning given to it in section 4.1.20.

"DISCOUNT FACTOR" has the meaning given to it in section 4.1.24.

"DRIFT TERM" has the meaning given to it in section 4.1.11.

"DYNAMIC SIZING MULTIPLIER" has the meaning given to it in section 4.1.15.

"ELIGIBLE EXPIRATION DATE" in relation to a CALCULATION DAY t is any EXPIRATION DATE of a listed option which is a monthly expiry and happens to occur after the CALCULATION DAY immediately following CALCULATION DAY t. For such EXPIRATION DATE of a listed option there must be at least 2 ELIGIBLE LISTED STRIKES available for both OPTION TYPES (Call and Put).

"ELIGIBLE LISTED OPTION" in relation to a CALCULATION DAY t is any listed option identified by its chain RIC 0#STXE*.EX identified by the three-tuple of type of Call or Put, the ELIGIBLE EXPIRATION DATE TE, and an ELIGIBLE STRIKE PRICE K.

"ELIGIBLE LISTED CALL OPTION" in relation to a CALCULATION DAY t is an ELIGIBLE LISTED OPTION of type Call.

"ELIGIBLE LISTED PUT OPTION" in relation to a CALCULATION DAY t is an ELIGIBLE LISTED OPTION of type Put.

"ELIGIBLE LISTED STRIKE" is any STRIKE PRICE of a listed option with a non-null BID PRICE and a non-null ASK PRICE where the bid price is lower or equal to the ASK PRICE.

"EUR" means the lawful currency of the member states of the European Union that have adopted or adopt the single currency in accordance with the Treaty on the Functioning of European Union, as amended.

"EXCHANGE PRICE" of an ELIGIBLE LISTED OPTION in relation to a CALCULATION DAY t means the OPTION SETTLEMENT PRICE.

"EXPIRING OPTION PORTFOLIO" has the meaning given to it in section 4.1.3.

"EXPIRATION DATE" is defined in relation to an OPTION and is the date in which such option expires.

"EXPONENTIAL FUNCTION" means the exponential function to the basis of Euler's Number e.

"FILTERED LISTED MONTHLY EXPIRATION DATE" means the monthly EXPIRATION DATE of a calendar month which is March, June, September or December (starting from September 1, 2020), or which is June or December (prior to September 1, 2020).

"GAMMA" has the meaning as defined in section 4.1.23.

"FORWARD" has the meaning given to it in section 4.1.26.

"FORWARD VOLATILITY" has the meaning given to it in section 4.1.13.

"FRICTION" is defined in relation to an OPTION and has the meaning given to it in section 4.1.10.

"**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 COMPONENTS**" shall mean all the OPTIONS with comprise the INDEX, at a specific time. Which, for the avoidance of doubt, shall mean the union of NEW OPTION PORTFOLIO (i.e. new options entering the portfolio), CONTINUING OPTION PORTFOLIO, EXPIRING OPTION PORTFOLIO, AND UNWINDING OPTION PORTFOLIO.

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

"IMPLIED VOLATILITY" has the meaning given to it in section 4.1.28.

"**LISTED OPTION**" means in respect of any CALCULATION DAY, all the exchange traded options corresponding to the relevant UNDERLYING ASSET, that are listed on the relevant exchange.

"**LIVE DATE**" shall be the 2024-11-29.

"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.

"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 4.1.5.

"NUMBER OF EXECUTION UNITS" has the meaning given to it in section 2.2.

"NUMBER OF THEORETICAL UNITS" has the meaning given to it in section 2.2.

"OPTION" means a 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 ASSET at a pre-defined day, the EXPIRATION DATE TE, for a pre-defined price, the STRIKE PRICE K.

"**OPTION TYPE**" shall mean the type of Option Q, which can be either Call or Put.

"PAYOUT" has the meaning given to it in section 4.1.16.

"PORTFOLIO MARK-TO-MARKET" has the meaning given to it in section 4.1.1.

"PORTFOLIO VEGA" has the meaning given to it in section 4.1.14.

"PREMIUM" has the meaning given to it in section 4.1.17.

"PREMIUM PAID" has the meaning given to it in section 4.1.7.

"**REFINITIV**" is a data provider being a subsidiary of London Stock Exchange.

"**PORTFOLIO REVIEW DATE**" means the CALCULATION DAY that is Friday.

"**SETTLEMENT PRICE**" shall mean the settlement price available on the primary exchange on which the relevant OPTION is listed during regular trading hours.

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

"START DATE" shall be 2007-01-04.

"STRIKE PRICE" is defined in relation to an OPTION and has the meanings given to it in section 2.1.

"TRADE DATE" in relation to a notionally traded OPTION Q means the CALCULATION DAY t where a position of OPTION Q has been entered.

"**UNDERLYING ASSET**" means the EURO STOXX 50 Index.

"**UNDERLYING SETTLEMENT ASSET**" means the FSX5ES Index.

"UNDERLYING INDEX CLOSING LEVEL" in relation to a CALCULATION DAY t means the official closing level of the UNDERLYING ASSET in respect of that day.

"UNDERLYING SETTLEMENT INDEX LEVEL" in relation to a CALCULATION DAY t means the official settlement level of the UNDERLYING SETTLEMENT ASSET on that day, identified by its FSX5ES Index ticker.

"UNWIND DATE" is defined in relation to an OPTION and has the meaning given to it in section 2.1.1.

"UNWINDING OPTION PORTFOLIO" has the meaning given to it in section 4.1.4.

"UNWIND VALUES" has the meaning given to it in section 4.1.9.

"VEGA" has the meaning given to it in section 4.1.22.

7. VERSIONING

VERSION	DATE	DESCRIPTION
1.0	November 25th, 2024	Initial Guideline creation (*initial version*)
1.1	May 27th, 2025	Adjustment of *Section 4.1 Index formula* to replace Option TWAPs with Option Settlement Prices
1.2	July 18th, 2025	Clarification to definition of the strike intervals dK_Q^{Put} and dK_Q^{Call} in *Section 2.2.3 Number of Execution Units of the Straddle Options Set*
1.3	September, 30th 2025	Add Indicative Index.

Table 2 Versioning

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