

INDEX GUIDELINE

RBC Equity Put Write Index Series

Version 1.6

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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 Each Index (the "**INDEX**") of the RBC Equity Put Write Index Series (c.f., Appendix). Any amendments to the rules made to the GUIDELINE are approved by the OVERSIGHT COMMITTEE specified in Section 5.5. The INDEX is owned by RBC Capital Markets, LLC ("**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.

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. SOLACTIVE 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. SOLACTIVE strives to the best of its ability to ensure the correctness of the calculation. There is no obligation for SOLACTIVE – 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 SOLACTIVE does not constitute a recommendation for capital investment and does not contain any assurance or opinion of SOLACTIVE 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	The INDEX a rules-based strategy which writes Put Options of different expiration dates within its portfolio and holds the position until the respective expiration date.
Regional Allocation	Different Geographies

Table 1 Index Overview

1.2. IDENTIFIERS AND PUBLICATION

The INDEX is published under the following identifiers as laid out in Table 3 Index Identifier.

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

As defined in Table 4 Index Initialization, the initial level of the Index on the Start Date, is Start Level. 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 close Levels before TWAP START DATE and using alternative interest rate instruments ALTERNATIVE O/N RIC and ALTERNATIVE OIS SWAP CHAIN RIC before RATES SWITCH DATE.

1.4. PRICES AND CALCULATION FREQUENCY

The INDEX is calculated for CALCULATION DAY T and distributed once every CALCULATION DAY t+1 at 10:00 a.m. CET based on intraday data as outlined in Section 4.1.

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 TRADE DATE (TR_Q) and EXPIRATION DATE (TE_Q) the LISTED PUT OPTION of the OPTION CHAIN with highest STRIKE PRICE $Strike_Q$ less than or equal to TARGET STRIKE PRICE is selected where an OPTION TWAP can be calculated as of CALCULATION DAY t:

$$TargetStrikePrice = TargetStrike \times Spot_t^{IndexSnapTime}$$

With

$Spot_t^{IndexSnapTime}$: is the UNDERLYING INDEX LEVEL as of INDEX SNAP TIME as of CALCULATION DAY t.

$TargetStrike$: is the TARGET STRIKE

Should there be no LISTED PUT OPTION of the OPTION CHAIN with STRIKE PRICE $Strike_Q$ less than or equal to TARGET STRIKE PRICE where an OPTION TWAP can be calculated as of CALCULATION DAY t be available, then the LISTED PUT OPTION of the OPTION CHAIN with smallest STRIKE PRICE $Strike_Q$ where an OPTION TWAP can be calculated as of CALCULATION DAY t will be selected.

2.2. NUMBER OF UNITS OF THE INDEX COMPONENTS

At TRADE DATE (TR_Q) the following NUMBER OF UNITS ($Units_Q$) in respect to option Q will be determined:

$$Units_Q = - \frac{IndexLevel_{t-1}}{Strike_Q} \times NotionalPercentage$$

With

$IndexLevel_{t-1}$: The level of the INDEX as of CALCULATION DAY t-1.

$Strike_Q$: is the STRIKE PRICE of Option Q which got determined in section 2.1

$NotionalPercentage$: is the NOTIONAL PERCENTAGE as defined in Table 5 Index Parameters



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 level of the INDEX is calculated according to the following formula:

$$Index_t = 1000 + OptPortfolioValue_t + CAV_t - MF_t$$

Where:

Index_t: The level of the INDEX as of CALCULATION DAY t.

OptPortfolioValue_t: The OPTION PORTFOLIO VALUE as of CALCULATION DAY t.

CAV_t: The CASH ACCOUNT VALUE as of CALCULATION DAY t.

MF_t: Is the MANAGEMENT FEES as of CALCULATION DAY t.

4.1.1. Option Portfolio Value

The OPTION PORTFOLIO VALUE as of CALCULATION DAY t will be calculated as follows:

$$OptPortfolioValue_t = \sum_{Q \in COP_t} Units_Q \times OptionValue_{Q,t}$$

With:

COP_t: The CONTINUING OPTION PORTFOLIO as of CALCULATION DAY t.

Units_Q: The NUMBER OF UNITS of OPTION Q.

OptionValue_{Q,t}: The OPTION VALUE of OPTION Q as of CALCULATION DAY t.

4.1.2. Continuing Option Portfolio

The CONTINUING OPTION PORTFOLIO as of CALCULATION DAY t that falls after the START DATE of the INDEX is the set comprising of those OPTIONS Q that 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 after CALCULATION DAY t

4.1.3. Expiring Option Portfolio

The EXPIRING OPTION PORTFOLIO as of CALCULATION DAY t that falls after the START DATE of the INDEX is the set comprising of those OPTIONS Q that 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 CALCULATION DAY t

4.1.4. New Option Portfolio

The NEW OPTION PORTFOLIO as of CALCULATION DAY t that falls after the START DATE of the INDEX is the set comprising of those OPTIONS Q that satisfy the following criteria:



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

4.1.5. Option Value

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

$$OptionValue_{Q,t} = ClosePrice_{Q,t} - OptionCost_{Q,t}$$

With:

$ClosePrice_{Q,t}$: The CLOSE PRICE of OPTION Q as of CALCULATION DAY t .

$OptionCost_{Q,t}$: The OPTION COST of OPTION Q as of CALCULATION DAY t .

4.1.6. Close Price

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

$$ClosePrice_{Q,t} = TWAP_{Q,t} + Delta_{Q,t} \times (Spot_t^{Close} - TWAP_{Spot,t})$$

With

$TWAP_{Q,t}$: The OPTION TWAP of OPTION Q as of CALCULATION DAY t . If the INDEX ADMINISTRATOR is unable to determine the OPTION TWAP of OPTION Q as of CALCULATION DAY t , $TWAP_{Q,t}$ shall be set to the THEORETICAL OPTION PRICE evaluated with the OPTION IMPLIED VOLATILITY of OPTION Q as of CALCULATION DAY $t-1$.

$TWAP_{Spot,t}$: The SPOT TWAP as of CALCULATION DAY t .

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

$Spot_t^{Close}$: The SPOT CLOSE as of CALCULATION DAY t .

4.1.7. Option TWAP

The OPTION TWAP of any listed OPTION Q as of CALCULATION DAY t is the average of BID PRICE and ASK PRICE of all relevant ticks according to the TWAP SPECIFICATION during the TWAP WINDOW.

4.1.8. Spot TWAP

The SPOT TWAP as of CALCULATION DAY t is the average of BID PRICE and ASK PRICE of all relevant ticks according to the TWAP SPECIFICATION during the TWAP WINDOW.

4.1.9. Option Delta

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

$$Delta_{Q,t} = (IN(d_{Q,t}) - 1) \times \exp(-r_{t,TEQ} \times DCFC_{t,TEQ})$$

Where

$$d_{Q,t} = \frac{\log\left(\frac{FwdTWAP_{t,TEQ}}{K_Q}\right) + \frac{\sigma_{Q,t}^2}{2} \times DCFT_{t,TEQ}}{\sigma_{Q,t} \times \sqrt{DCFT_{t,TEQ}}}$$



With:

$FwdTWAP_{t,TE_Q}$: FORWARD TWAP 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 OPTION DAY COUNT FRACTION in respect to EXPIRATION DATE (TE_Q) of OPTION Q as of CALCULATION DAY t .

$DCFC_{t,TE_Q}$: The INTEREST RATE DAY COUNT FRACTION in respect to EXPIRATION DATE (TE_Q) of OPTION Q as of CALCULATION DAY t .

r_{t,TE_Q} : The RISK FREE INTEREST RATE in respect to EXPIRATION DATE (TE_Q) of OPTION Q as of CALCULATION DAY t .

$\sigma_{Q,t}$: The OPTION IMPLIED VOLATILITY of OPTION Q as of CALCULATION DAY t .

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

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

$\text{Log}(\cdot)$: The NATURAL LOGARITHM FUNCTION.

4.1.10. Option Day Count Fraction

The OPTION DAY COUNT FRACTION in respect to EXPIRATION DATE (TE_Q) of OPTION Q as of CALCULATION DAY t is the number of CALCULATION DAYS between (and including) CALCULATION DAY t and (excluding) EXPIRATION DATE (TE_Q) divided by OPTION DAY COUNT.

4.1.11. Interest Rates Day Count Fraction

The INTEREST RATES DAY COUNT FRACTION in respect to EXPIRATION DATE (TE_Q) of OPTION Q as of CALCULATION DAY t is the number of calendar days between (and including) CALCULATION DAY t and (excluding) EXPIRATION DATE (TE_Q) divided by RATES DAY COUNT.

4.1.12. Risk Free Interest Rate

The Risk Free Interest Rate in respect to EXPIRATION DATE (TE_Q) of OPTION Q as of CALCULATION DAY t is determined as follows:

1. determine the set of OIS Swaps to be those N OIS Swaps of the USED OIS SWAP CHAIN RIC of CALCULATION DATE t that have an available CLOSE VALUE as of CALCULATION DAY t and whose TENOR is smaller or equal than two years
2. determine the set of maturities $\{\theta_i\}_{i=0,\dots,N}$ corresponding to the USED O/N RIC of CALCULATION DATE t and those N instruments from the USED OIS SWAP CHAIN RIC of CALCULATION DATE t to be $\theta_0 = t$, and θ_i for $i=1,\dots,N$ being CALCULATION DAY t added by the TENOR of the OIS SWAP i adjusted by the SWAP ADJUSTMENT METHOD
3. define the interest rates $\{\rho_i\}_{i=0,\dots,N}$ corresponding to the USED O/N RIC of CALCULATION DATE t and N instruments from the USED OIS SWAP CHAIN RIC of CALCULATION DATE t to be ρ_0 being the most



recently available CLOSE VALUE of the USED O/N RIC and ρ_i for $i=1,\dots,N$, the CLOSE VALUE of the OIS SWAP i as of CALCULATION DAY t

4. determine the latest to occur maturity $\theta_{smaller}$ being on or before EXPIRATION DATE (TE_Q) of OPTION Q and the earliest to occur maturity θ_{larger} being on or after EXPIRATION DATE (TE_Q) of OPTION Q .

If EXPIRATION DATE (TE_Q) of OPTION Q is later than any of those maturities selected in point 2. Above, set $\theta_{larger} = \theta_{smaller}$.

5. define

$$r_{t,TE_Q} = \begin{cases} \rho_{smaller}, & \text{if } \theta_{smaller} = \theta_{larger} \\ \rho_{smaller} \times \frac{DCTC_{TE_Q, \theta_{larger}}}{DCTC_{\theta_{smaller}, \theta_{larger}}} + \rho_{larger} \times \frac{DCTC_{\theta_{smaller}, TE_Q}}{DCTC_{\theta_{smaller}, \theta_{larger}}}, & \text{if } \theta_{smaller} \neq \theta_{larger} \end{cases}$$

with

$DCTC_{S,T}$: The INTEREST RATES DAY COUNT FRACTION in respect to calendar day S and calendar day T is the number of calendar days between (and including) calendar day S and (excluding) calendar day T divided by RATES DAY COUNT.

4.1.13. Forward TWAP

The FORWARD TWAP in respect to EXPIRATION DATE (TE_Q) of OPTION Q as of CALCULATION DAY t is calculated as if a FORWARD REFERENCE STRIKE can be determined:

$$FwdTWAP_{t,TE_Q} = (TWAP_{FRC_{TE_Q},t} - TWAP_{FRP_{TE_Q},t}) \times \exp(r_{t,TE_Q} \times DCF_{t,TE_Q}) + FRK_{TE_Q,t}$$

If a FORWARD REFERENCE STRIKE cannot be determined and the UNDERLYING TYPE is ETF as defined in Table 3 Index Identifier:

$$FwdTWAP_{t,TE_Q} = FwdTWAP_{t-1,TE_Q} \times \frac{S_t + Div_t}{S_{t-1}}$$

If a FORWARD REFERENCE STRIKE cannot be determined and the UNDERLYING TYPE is not ETF as defined in Table 3 Index Identifier, section 4.4 applies.

Where

$TWAP_{FRC_{TE_Q},t}$: The OPTION TWAP of FORWARD REFERENCE CALL OPTION FRC_{TE_Q} as of CALCULATION DAY t .

$TWAP_{FRP_{TE_Q},t}$: The OPTION TWAP of FORWARD REFERENCE PUT OPTION FRP_{TE_Q} as of CALCULATION DAY t .

DCF_{t,TE_Q} : The INTEREST RATE DAY COUNT FRACTION in respect to EXPIRATION DATE (TE_Q) of OPTION Q as of CALCULATION DAY t .

r_{t,TE_Q} : The RISK FREE INTEREST RATE in respect to EXPIRATION DATE (TE_Q) of OPTION Q as of CALCULATION DAY t .

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



$FRK_{TE_Q,t}$: The FORWARD REFERENCE STRIKE in respect to EXPIRATION DATE (TE_Q) of OPTION Q as of CALCULATION DAY t .

$FwdTWAP_{t-1,TE_Q}$: The FORWARD TWAP in respect to EXPIRATION DATE (TE_Q) of OPTION Q as of CALCULATION DAY $t-1$.

S_t : The SPOT CLOSE LEVEL as of CALCULATION DAY t .

S_{t-1} : The SPOT CLOSE LEVEL as of CALCULATION DAY $t-1$.

Div_t : The DIVIDENDS with Execution Day as of CALCULATION DAY t .

4.1.14. Forward Reference Strike

The FORWARD REFERENCE STRIKE in respect to EXPIRATION DATE (TE_Q) of OPTION Q as of CALCULATION DAY t is the STRIKE PRICE of a LISTED CALL OPTION or LISTED PUT OPTION of the OPTION CHAIN determined at FORWARD SNAP TIME, such that:

1. The EXPIRATION DATE of such LISTED CALL OPTION of the OPTION CHAIN and the EXPIRATION DATE of such LISTED PUT OPTION of the OPTION CHAIN equals EXPIRATION DATE (TE_Q) of OPTION Q .
2. The absolute difference of the Mid Price (as the average of Bid Price and Ask Price) of the LISTED CALL OPTION and the Mid Price (as the average of Bid Price and Ask Price) of the LISTED PUT OPTION at FORWARD SNAP TIME is the lowest across all LISTED CALL OPTIONS of the OPTION CHAIN and all LISTED PUT OPTIONS of the OPTION CHAIN with the same EXPIRATION DATE (TE_Q) of OPTION Q .
3. The STRIKE PRICE of such a LISTED CALL OPTION according to 1. and 2. above is closest to $Spot_t^{ForwardSnapTime}$ which is UNDERLYING INDEX LEVEL as of FORWARD SNAP TIME as of CALCULATION DAY t .
4. The FORWARD REFERENCE STRIKE will be the highest STRIKE PRICE of such LISTED CALL OPTION according to 1., 2., and 3.

4.1.15. Forward Reference Call Option

The FORWARD REFERENCE CALL OPTION in respect to EXPIRATION DATE (TE_Q) of OPTION Q as of CALCULATION DAY t is the LISTED CALL OPTION of the OPTION CHAIN whose EXPIRATION DATE equals TE_Q and whose STRIKE PRICE equals the FORWARD REFERENCE STRIKE in respect to EXPIRATION DATE (TE_Q) of OPTION Q as of CALCULATION DAY t .

4.1.16. Forward Reference Put Option

The FORWARD REFERENCE PUT OPTION in respect to EXPIRATION DATE (TE_Q) of OPTION Q as of CALCULATION DAY t is the LISTED PUT OPTION of the OPTION CHAIN whose EXPIRATION DATE equals TE_Q and whose STRIKE PRICE equals the FORWARD REFERENCE STRIKE in respect to EXPIRATION DATE (TE_Q) of OPTION Q as of CALCULATION DAY t .



4.1.17. Option Cost

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

$$\text{OptionCost}_{Q,t} = v_{Q,t} \times \max(\text{CostFloor}, \text{CostMultiplier} \times \sigma_{Q,t})$$

Where

$v_{Q,t}$: The OPTION VEGA of OPTION Q as of CALCULATION DAY t

$\sigma_{Q,t}$: The OPTION IMPLIED VOLATILITY of OPTION Q as of CALCULATION DAY t

CostFloor: The COST FLOOR.

CostMultiplier: The COST MULTIPLIER.

4.1.18. Option Vega

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

$$v_{Q,t} = \frac{\exp\left(-\frac{d_{Q,t}^2}{2}\right) \times \text{FwdTWAP}_{t,TEQ} \times \sqrt{\text{DCFT}_{t,TEQ}}}{\sqrt{2 \times \pi} \times 100} \times \exp\left(-r_{t,TEQ} \times \text{DCFC}_{t,TEQ}\right)$$

Where

$$d_{Q,t} = \frac{\log\left(\frac{\text{FwdTWAP}_{t,TEQ}}{K_Q}\right) + \frac{\sigma_{Q,t}^2}{2} \times \text{DCFT}_{t,TEQ}}{\sigma_{Q,t} \times \sqrt{\text{DCFT}_{t,TEQ}}}$$

With

$\text{FwdTWAP}_{t,TEQ}$: FORWARD TWAP in respect to EXPIRATION DATE (TEQ) of OPTION Q as of CALCULATION DAY t .

K_Q : The STRIKE PRICE of OPTION Q .

$\text{DCFT}_{t,TEQ}$: The OPTION DAY COUNT FRACTION in respect to EXPIRATION DATE (TEQ) of OPTION Q as of CALCULATION DAY t .

$\text{DCFC}_{t,TEQ}$: The INTEREST RATE DAY COUNT FRACTION in respect to EXPIRATION DATE (TEQ) of OPTION Q as of CALCULATION DAY t .

$r_{t,TEQ}$: The RISK FREE INTEREST RATE in respect to EXPIRATION DATE (TEQ) of OPTION Q as of CALCULATION DAY t .

$\sigma_{Q,t}$: The OPTION IMPLIED VOLATILITY of OPTION Q as of CALCULATION DAY t .

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

$\text{Log}(\cdot)$: The NATURAL LOGARITHM FUNCTION.



4.1.19. Option Implied Volatility

If the INDEX ADMINISTRATOR is able to determine the OPTION TWAP of OPTION Q as of CALCULATION DAY t , and the OPTION Q has non-negative time value ($K_Q - FwdTWAP_{t,TE_Q} \leq TWAP_{Q,t}$), the PRELIMINARY OPTION IMPLIED VOLATILITY of OPTION Q as of CALCULATION DAY t is the solution $\tilde{\sigma}_{Q,t}$ of the equation:

$$TWAP_{Q,t} = TheoreticalPrice_{Q,t}(\tilde{\sigma}_{Q,t})$$

With:

$TWAP_{Q,t}$: The OPTION TWAP of OPTION Q as of CALCULATION DAY t .

$TheoreticalPrice_{Q,t}(\sigma)$: The THEORETICAL OPTION PRICE of OPTION Q as of CALCULATION DAY t as a function of the implied volatility σ .

K_Q : The STRIKE PRICE of OPTION Q .

$FwdTWAP_{t,TE_Q}$: FORWARD TWAP in respect to EXPIRATION DATE (TE_Q) of OPTION Q as of CALCULATION DAY t .

Thereafter, the OPTION IMPLIED VOLATILITY of OPTION Q as of CALCULATION DAY t will be deduced as the to the nearest 8th digit rounded PRELIMINARY OPTION IMPLIED VOLATILITY of OPTION Q as of CALCULATION DAY t .

If the INDEX ADMINISTRATOR is unable to determine the OPTION TWAP of OPTION Q as of CALCULATION DAY t , or the OPTION Q has negative time value ($K_Q - FwdTWAP_{t,TE_Q} > TWAP_{Q,t}$), or the INDEX ADMINISTRATOR is unable to determine the PRELIMINARY OPTION IMPLIED VOLATILITY of OPTION Q as of CALCULATION DAY t , the OPTION IMPLIED VOLATILITY of OPTION Q as of CALCULATION DAY t is determined by:

$$\sigma_{Q,t} = \sigma_{Q,t-1}$$

With:

$\sigma_{Q,t-1}$: The OPTION IMPLIED VOLATILITY of OPTION Q as of CALCULATION DAY $t-1$.

$TWAP_{Q,t}$: The OPTION TWAP of OPTION Q as of CALCULATION DAY t .

K_Q : The STRIKE PRICE of OPTION Q .

$FwdTWAP_{t,TE_Q}$: FORWARD TWAP in respect to EXPIRATION DATE (TE_Q) of OPTION Q as of CALCULATION DAY t .

4.1.20. Theoretical Option Price

The THEORETICAL OPTION PRICE of OPTION Q as of CALCULATION DAY t as a function of the implied volatility σ can be calculated as follows:

- If OPTION Q is a LISTED CALL OPTION of the OPTION CHAIN:



$$\begin{aligned}
 & \textit{TheoreticalPrice}_{Q,t}(\sigma) \\
 &= \exp(-r_{t,TE_Q} \times DCFC_{t,TE_Q}) \\
 &\times \left(FwdTWAP_{t,TE_Q} \times IN(d_{Q,t}(\sigma)) \right. \\
 &\quad \left. - K_Q \times IN\left(d_{Q,t}(\sigma) - \sigma \times \sqrt{DCFT_{t,TE_Q}}\right) \right)
 \end{aligned}$$

- If OPTION *Q* is a LISTED PUT OPTION of the OPTION CHAIN:

$$\begin{aligned}
 & \textit{TheoreticalPrice}_{Q,t}(\sigma) \\
 &= \exp(-r_{t,TE_Q} \times DCFC_{t,TE_Q}) \\
 &\times \left(K_Q \times IN\left(-d_{Q,t}(\sigma) + \sigma \times \sqrt{DCFT_{t,TE_Q}}\right) \right. \\
 &\quad \left. - FwdTWAP_{t,TE_Q} \times IN(-d_{Q,t}(\sigma)) \right)
 \end{aligned}$$

- With the function of the implied volatility σ :

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

With:

$FwdTWAP_{t,TE_Q}$: FORWARD TWAP 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 OPTION DAY COUNT FRACTION in respect to EXPIRATION DATE (TE_Q) of OPTION *Q* as of CALCULATION DAY *t*.

$DCFC_{t,TE_Q}$: The INTEREST RATE DAY COUNT FRACTION in respect to EXPIRATION DATE (TE_Q) of OPTION *Q* as of CALCULATION DAY *t*.

r_{t,TE_Q} : The RISK FREE INTEREST RATE in respect to EXPIRATION DATE (TE_Q) of OPTION *Q* as of CALCULATION DAY *t*.

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

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

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

4.1.21. Cash Account Value

The CASH ACCOUNT VALUE as of CALCULATION DAY *t* equaling START DATE is calculated as follows:

$$CAV_t = -Premium_t$$



The CASH ACCOUNT VALUE as of CALCULATION DAY t after START DATE is calculated as follows:

$$CAV_t = CAV_{t-1} + Settlement_t - Premium_t$$

With

CAV_{t-1} : The CASH ACCOUNT VALUE as of CALCULATION DAY $t-1$.

$Settlement_t$: The OPTION PORTFOLIO SETTLEMENT VALUE as of CALCULATION DAY t .

$Premium_t$: The OPTION PORTFOLIO PREMIUM VALUE as of CALCULATION DAY t .

4.1.22. Option Portfolio Settlement Value

The OPTION PORTFOLIO SETTLEMENT VALUE as of CALCULATION DAY t can be calculated as follows:

$$Settlement_t = \sum_{Q \in EOP_t} Units_Q \times SettlementValue_{Q,t}$$

With

EOP_t : The EXPIRING OPTION PORTFOLIO as of CALCULATION DAY t .

$Units_Q$: The NUMBER OF UNITS of OPTION Q .

$SettlementValue_{Q,t}$: The OPTION SETTLEMENT VALUE of OPTION Q as of CALCULATION DAY t .

4.1.23. Option Settlement Value

The OPTION SETTLEMENT VALUE of OPTION Q as of CALCULATION DAY t can be calculated as follows:

- If OPTION Q is a LISTED CALL OPTION of the OPTION CHAIN:

$$SettlementValue_{Q,t} = \max(0, Settle_t - K_Q)$$

- If OPTION Q is a LISTED PUT OPTION of the OPTION CHAIN:

$$SettlementValue_{Q,t} = \max(0, K_Q - Settle_t)$$

With:

K_Q : The STRIKE PRICE of OPTION Q .

$Settle_t$: The SETTLEMENT VALUE OF THE UNDERLYING as of CALCULATION DAY t .

4.1.24. Option Portfolio Premium Value

The OPTION PORTFOLIO PREMIUM VALUE as of CALCULATION DAY t can be calculated as follows:

$$Premium_t = \sum_{Q \in NOP_t} Units_Q \times (TWAP_{Q,t} - OptionCost_{Q,t})$$

With:

NOP_t : The NEW OPTION PORTFOLIO as of CALCULATION DAY t .

$Units_Q$: The NUMBER OF UNITS of OPTION Q .



$TWAP_{Q,t}$: The OPTION TWAP of OPTION Q as of CALCULATION DAY t .

$OptionCost_{Q,t}$: The OPTION COST of OPTION Q as of CALCULATION DAY t .

4.1.25. Management Fees

The MANAGEMENT FEES as of CALCULATION DAY t equaling START DATE should be set to zero

$$MF_t = 0$$

The MANAGEMENT FEES as of CALCULATION DAY t after START DATE is calculated as follows:

$$MF_t = MF_{t-1} + Fee \times Index_{t-1} \times DCFC_{t-1,t}$$

With

MF_{t-1} : The MANAGEMENT FEES as of CALCULATION DAY $t-1$.

$Index_{t-1}$: The level of the INDEX as of CALCULATION DAY $t-1$.

$DCFC_{t-1,t}$: The number of calendar days between (and including) CALCULATION DAY $t-1$ and (excluding) CALCULATION DAY t divided by RATES DAY COUNT.

4.2. ACCURACY

The level of the INDEX will be rounded to 3 decimal places.

4.3. RECALCULATION

SOLACTIVE makes the greatest possible efforts to accurately calculate and maintain its indices. However, errors in the determination process may occur from time to time for variety reasons (internal or external) and therefore, cannot be completely ruled out. SOLACTIVE 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 are generally depending 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 SOLACTIVE calculates its indices 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.

In particular at a scheduled CALCULATION DAY t , where one of the below is impossible to determine will be a MARKET DISRUPTION as well:

- the UNDERLYING INDEX LEVEL at FORWARD SNAP TIME



- if for any Option $Q \in COP_t$ from the CONTINUING OPTION PORTFOLIO or any Option $Q \in NOP_t$ from NEW OPTION PORTFOLIO with the corresponding EXPIRATION DATE (TE_Q) there is no pair of LISTED CALL OPTION of the OPTION CHAIN and LISTED PUT OPTION of the OPTION CHAIN with the same Strike and EXPIRATION DATE matching TE_Q and with no non-zero BID PRICE and non-zero ASK PRICE at FORWARD SNAP TIME for both the LISTED CALL OPTION and the LISTED PUT OPTION.

Such an event will imply the date t to become an extraordinary INDEX holiday, such that no level of the INDEX will be calculated and published. The calculation will resume the next CALCULATION DAY s after t taking into account references to the latest to occur CALCULATION DAY $s-1$ before s .



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.

5.2. METHODOLOGY REVIEW

The methodology of the INDEX is subject to regular review, at least annually. In case a need of 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, i.e. 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

SOLACTIVE makes the greatest possible efforts to ensure the resilience and continued integrity of its indices over time. Where necessary, SOLACTIVE follows a clearly defined and transparent procedure to adapt Index methodologies to 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.

SOLACTIVE 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. OVERSIGHT

An oversight committee composed of staff from SOLACTIVE and its subsidiaries (the "**OVERSIGHT 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 OVERSIGHT 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

“ALTERNATIVE OIS SWAP CHAIN RIC” has the meaning given to it in Table 7 Index Interest Rate Parameters.

“ALTERNATIVE O/N RIC” has the meaning given to it in Table 7 Index Interest Rate Parameters.

“ASK PRICE” shall mean the quoted Sell Price.

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

“BID PRICE” shall mean the quoted Buy Price.

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

“CALCULATION DAY” as defined in Table 7 Index Interest Rate Parameters.

“CALCULATION DAY T-1” is the CALCULATION DAY that falls immediately prior CALCULATION DAY t.

“CASH ACCOUNT VALUE” has the meaning given to it in Section 4.1.2.

“CONTINUING OPTION PORTFOLIO” has the meaning given to it in Section 4.1.2.

“CLOSE VALUE” of an interest rate instrument identified by O/N RIC or OIS SWAP CHAIN RIC means the Official Close Levels provided by REFINITIV.

“CLOSE PRICE” has the meaning given to it in Section 4.1.6.

“COST FLOOR” has the meaning given to it in Table 5 Index Parameters.

“COST MULTIPLIER” has the meaning given to it in Table 5 Index Parameters.

“CUMULATIVE DISTRIBUTION FUNCTION” means the Cumulative Distribution Function of the Standard Normal Distribution.

“EXPIRATION DATE” of an Option shall mean the closest monthly expiration date INITIAL EXPIRY from Table 5 Index Parameters after CALCULATION DAY t.

“EXPIRING OPTION PORTFOLIO” has the meaning given to it in Section 4.1.3.

“EXPONENTIAL FUNCTION” means the Exponential Function to the basis of Euler's Number e.

“FEE” has the meaning given to it in Table 5 Index Parameters.

“FORWARD SNAP TIME” on a CALCULATION DAY t shall mean HALF DAY FORWARD SNAP TIME from Table 6 Index TWAP Parameters if CALCULATION DAY t is a half trading day, otherwise it shall mean FULL DAY FORWARD SNAP TIME from Table 6 Index TWAP Parameters. The FORWARD SNAP TIME will be considered in the TIMEZONE from Table 6 Index TWAP Parameters.

“FORWARD REFERENCE CALL OPTION” has the meaning given to it in Section 4.1.15.

“FORWARD REFERENCE PUT OPTION” has the meaning given to it in Section 4.1.16.

“FORWARD REFERENCE STRIKE” has the meaning given to it in Section 4.1.14.

“FORWARD TWAP” has the meaning given to it in Section 4.1.13.



“**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 COMPONENTS**” shall mean the union of NEW OPTION PORTFOLIO, CONTINUING OPTION PORTFOLIO, and EXPIRING OPTION PORTFOLIO.

“**INDEX CURRENCY**” is the currency specified in the column “Currency” in Table 3 Index Identifier.

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

“**INDEX SNAP TIME**” on a CALCULATION DAY t shall mean HALF DAY INDEX SNAP TIME from Table 6 Index TWAP Parameters if CALCULATION DAY t is a half trading day, otherwise it shall mean FULL DAY INDEX SNAP TIME from Table 6 Index TWAP Parameters. The INDEX SNAP TIME will be considered in the TIMEZONE from Table 6 Index TWAP Parameters.

“**INTEREST RATES DAY COUNT**” has the meaning given to it in Table 7 Index Interest Rate Parameters.

“**INTEREST RATES DAY COUNT FRACTION**” has the meaning given to it in Section 4.1.11.

“**LISTED CALL OPTION**” of an OPTION CHAIN shall mean all CALL OPTIONS of that OPTION CHAIN.

“**LISTED PUT OPTION**” of an OPTION CHAIN shall mean all PUT OPTIONS of that OPTION CHAIN.

“**LIVE DATE**” shall have the meaning as defined in Section 1.3.

“**MANAGEMENT FEES**” has the meaning given to it in Section 4.1.25.

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

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

“**NATURAL LOGARITHM**” is the Logarithm Function to the basis of Euler’s number e .

“**OIS SWAP CHAIN RIC**” has the meaning given to it in Table 7 Index Interest Rate Parameters.

“**O/N Ric**” has the meaning given to it in Table 7 Index Interest Rate Parameters.

“**OPTION**” shall mean a LISTED CALL OPTION or a LISTED PUT OPTION.

“**OPTION CHAIN**” shall mean all Options that are referencing the OPTION CHAIN RIC from Table 5 Index Parameters in REFINITIV.

“**OPTION COST**” has the meaning given to it in Section 4.1.17.

“**OPTION DAY COUNT**” has the meaning given to it in Table 5 Index Parameters.

“**OPTION DAY COUNT FRACTION**” has the meaning given to it in Section 4.1.10.

“**OPTION DELTA**” has the meaning given to it in Section 4.1.9.

“**OPTION IMPLIED VOLATILITY**” has the meaning given to it in Section 4.1.19.

“**OPTION PORTFOLIO SETTLEMENT VALUE**” has the meaning given to it in Section 4.1.220.



“**OPTION PORTFOLIO PREMIUM VALUE**” has the meaning given to it in Section 4.1.240.

“**OPTION SETTLEMENT VALUE**” has the meaning given to it in Section 4.1.23.

“**OPTION TWAP**” has the meaning given to it in Section 4.1.7.

“**OPTION VALUE**” has the meaning given to it in Section 4.1.5.

“**OPTION VEGA**” has the meaning given to it in Section 4.1.18.

“**OPTION PORTFOLIO VALUE**” has the meaning given to it in Section 4.1.1.

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

“**PRELIMINARY OPTION IMPLIED VOLATILITY**” has the meaning given to it in Section 4.1.19.

“**RATES SWITCH DATE**” has the meaning given to it in Table 4 Index Initialization.

“**RISK FREE INTEREST RATE**” has the meaning given to it in Section 4.1.12.

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

“**SETTLEMENT VALUE**” is the official Settlement Value identified by its SETTLEMENT RIC in Table 5 Index Parameters.

“**SPOT TWAP**” has the meaning given to it in Section 4.1.8.

“**SPOT CLOSE**” shall mean the official close levels of the UNDERLYING INDEX identified by UNDERLYING RIC from Table 5 Index Parameters.

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

“**START DATE**” shall have the meaning as defined in Section 1.3.

“**STRIKE PRICE**” means the Strike Price of an Option according to its terms and conditions.

“**SWAP ADJUSTMENT METHOD**” has the meaning given to it in Table 7 Index Interest Rate Parameters.

“**TARGET STRIKE**” has the meaning given to it Table 5 Index Parameters.

“**TARGET STRIKE PRICE**” has the meaning given to it in Section 2.1.

“**TENOR**” shall mean the generic term of the OIS Swap instrument denoting a time span of one to many weeks, months, or years.

“**THEORETICAL OPTION PRICE**” has the meaning given to it in Section 4.1.20.

“**TRADE DATE**” means the CALCULATION DAY t which is the first day on or after a quarterly Expiration Date where sufficient OPTION TWAPs are available.

“**TWAP WINDOW**” on a CALCULATION DAY t shall mean HALF DAY TWAP WINDOW from Table 6 Index TWAP Parameters if CALCULATION DAY t is a half trading day, otherwise it shall mean FULL DAY INDEX SNAP TIME from Table 6 Index TWAP Parameters. The TWAP WINDOW will be considered in the TIMEZONE from Table 6 Index TWAP Parameters.



“TWAP SPECIFICATION” has the meaning given to it in Table 6 Index TWAP Parameters

“UNDERLYING INDEX LEVEL” on a CALCULATION DAY t at a specific time means the Level of the UNDERLYING INDEX identified by UNDERLING RIC from Table 5 Index Parameters on CALCULATION DAY t at a specific time.

“UNDERLYING TYPE” has the meaning given to it in Table 3 Index Identifier.

“USED OIS SWAP CHAIN RIC” on a CALCULATION DAY t means if t happens to be on or after RATES SWITCH DATE the OIS SWAP CHAIN RIC and if t happens to be before RATES SWITCH DATE the ALTERNATIVE OIS SWAP CHAIN RIC.

“USED O/N RIC” on a CALCULATION DAY t means means if t happens to be on or after RATES SWITCH DATE the O/N RIC and if t happens to be before RATES SWITCH DATE the ALTERNATIVE O/N RIC.



7. VERSIONING

VERSION	DATE	DESCRIPTION
1.0	May, 13 th 2022	Initial Guideline creation (<i>initial version</i>) with index <ul style="list-style-type: none"> - RBC US Equity 90% Strike Put Write Index
1.1	May, 20 th 2022	Inclusion of indices <ul style="list-style-type: none"> - RBC US Equity 80% Strike Put Write Index - RBC US Equity 85% Strike Put Write Index - RBC US Equity 95% Strike Put Write Index
1.2	June, 20 th 2022	Inclusion of indices <ul style="list-style-type: none"> - RBC EU Equity 80% Strike Put Write Index - RBC EU Equity 85% Strike Put Write Index - RBC EU Equity 90% Strike Put Write Index - RBC EU Equity 95% Strike Put Write Index
1.3	July, 13 th 2022	Inclusion of indices <ul style="list-style-type: none"> - RBC US Equity 70% Strike Put Write Index
1.4	July, 19 th 2022	Inclusion of indices <ul style="list-style-type: none"> - RBC US Equity 75% Strike Put Write Index - RBC EU Equity 75% Strike Put Write Index
1.5	August, 5 th 2022	Inclusion of indices <ul style="list-style-type: none"> - RBC UK Equity 85% Strike Put Write Index - RBC UK Equity 90% Strike Put Write Index
1.6	February, 2 nd 2023	Inclusion of indices <ul style="list-style-type: none"> - RBC Canadian Equity 85% Strike Put Write Index - RBC Canadian Equity 90% Strike Put Write Index <p>Clarification of selection rules, c.f., section 2.1 in case of no Listed Option with Strike smaller than Target Strike can be selected.</p>

Table 2 Versioning

APPENDIX

NAME	ISIN	CURRENCY	TYPE	RIC	BBG TICKER	UNDERLYING TYPE
RBC US Equity 90% Strike Put Write Index	DE000SLOFWU5	USD	Excess Return	.RBCUS90P	RBCUS90P Index	Index
RBC US Equity 80% Strike Put Write Index	DE000SLOFWZ4	USD	Excess Return	.RBCUS80P	RBCUS80P Index	Index
RBC US Equity 85% Strike Put Write Index	DE000SLOFW01	USD	Excess Return	.RBCUS85P	RBCUS85P Index	Index
RBC US Equity 95% Strike Put Write Index	DE000SLOFW19	USD	Excess Return	.RBCUS95P	RBCUS95P Index	Index
RBC US Equity 70% Strike Put Write Index	DE000SLOGD03	USD	Excess Return	.RBCUS70P	RBCUS70P Index	Index
RBC US Equity 75% Strike Put Write Index	DE000SLOGD52	USD	Excess Return	.RBCUS75P	RBCUS75P Index	Index
RBC EU Equity 80% Strike Put Write Index	DE000SLOF5Q3	EUR	Excess Return	.RBCEU80P	RBCEU80P Index	Index
RBC EU Equity 85% Strike Put Write Index	DE000SLOF5R1	EUR	Excess Return	.RBCEU85P	RBCEU85P Index	Index
RBC EU Equity 90% Strike Put Write Index	DE000SLOF5S9	EUR	Excess Return	.RBCEU90P	RBCEU90P Index	Index
RBC EU Equity 95% Strike Put Write Index	DE000SLOF5T7	EUR	Excess Return	.RBCEU95P	RBCEU95P Index	Index
RBC EU Equity 75% Strike Put Write Index	DE000SLOGD60	EUR	Excess Return	.RBCEU75P	RBCEU75P Index	Index
RBC UK Equity 85% Strike Put Write Index	DE000SLOGD94	GBP	Excess Return	.RBCUK85P	RBCUK85P Index	Index
RBC UK Equity 90% Strike Put Write Index	DE000SLOGEA3	GBP	Excess Return	.RBCUK90P	RBCUK90P Index	Index
RBC Canadian Equity 85% Strike Put Write Index	DE000SLOHP16	CAD	Excess Return	.RBCCA85P	RBCCA85P Index	ETF



NAME	ISIN	CURRENCY	TYPE	RIC	BBG TICKER	UNDERLYING TYPE
RBC Canadian Equity 90% Strike Put Write Index	DE000SLOHP24	CAD	Excess Return	.RBCCA90P	RBCCA90P Index	ETF

Table 3 Index Identifier

INDEX RIC	LIVE DATE	START DATE	START LEVEL	TWAP START DATE	RATES SWITCH DATE
.RBCUS90P	May, 13 th 2022	June, 15 th 2007	1000	November, 8 th 2021	June, 7 th 2018
.RBCUS80P	May, 20 th 2022	June, 15 th 2007	1000	November, 8 th 2021	June, 7 th 2018
.RBCUS85P	May, 20 th 2022	June, 15 th 2007	1000	November, 8 th 2021	June, 7 th 2018
.RBCUS95P	May, 20 th 2022	June, 15 th 2007	1000	November, 8 th 2021	June, 7 th 2018
.RBCUS70P	July, 13 th 2022	June, 15 th 2007	1000	November, 8 th 2021	June, 7 th 2018
.RBCUS75P	July, 19 th 2022	June, 15 th 2007	1000	November, 8 th 2021	June, 7 th 2018
.RBCEU80P	June, 20 th 2022	June, 15 th 2007	1000	November, 8 th 2021	October, 7 th 2019
.RBCEU85P	June, 20 th 2022	June, 15 th 2007	1000	November, 8 th 2021	October, 7 th 2019
.RBCEU90P	June, 20 th 2022	June, 15 th 2007	1000	November, 8 th 2021	October, 7 th 2019
.RBCEU95P	June, 20 th 2022	June, 15 th 2007	1000	November, 8 th 2021	October, 7 th 2019
.RBCEU75P	July, 19 th 2022	June, 15 th 2007	1000	November, 8 th 2021	October, 7 th 2019



INDEX RIC	LIVE DATE	START DATE	START LEVEL	TWAP START DATE	RATES SWITCH DATE
.RBCUK85P	August, 5 th 2022	June, 15 th 2007	1000	November, 8 th 2021	N/A
.RBCUK90P	August, 5 th 2022	June, 15 th 2007	1000	November, 8 th 2021	N/A
.RBCCA85P	February, 2 nd 2023	September, 19 th 2008	1000	November, 8 th 2021	N/A
.RBCCA85P	February, 2 nd 2023	September, 19 th 2008	1000	November, 8 th 2021	N/A

Table 4 Index Initialization

INDEX RIC	UNDERLYING RIC	OPTION CHAIN RIC	TARGET STRIKE	SETTLEMENT RIC	OPTION DAY COUNT	FEE	COST FLOOR	COST MULTIPLIER	INITIAL EXPIRY	NOTIONAL PERCENTAGE	ROLL FREQUENCY
.RBCUS90P	.SPX	0#SPX*.U	90%	.SET	252	0.20%	0.2	1.5	12 Months	25%	3 Months
.RBCUS80P	.SPX	0#SPX*.U	80%	.SET	252	0.20%	0.2	1.5	12 Months	25%	3 Months
.RBCUS85P	.SPX	0#SPX*.U	85%	.SET	252	0.20%	0.2	1.5	12 Months	25%	3 Months
.RBCUS95P	.SPX	0#SPX*.U	95%	.SET	252	0.20%	0.2	1.5	12 Months	25%	3 Months
.RBCUS70P	.SPX	0#SPX*.U	70%	.SET	252	0.20%	0.2	1.5	12 Months	25%	3 Months
.RBCUS75P	.SPX	0#SPX*.U	70%	.SET	252	0.20%	0.2	1.5	12 Months	25%	3 Months
.RBCEU80P	.STOXX50E	0#STXE*.EX	80%	.FSX5ES	252	0.20%	0.3	2.0	12 Months	25%	3 Months



INDEX RIC	UNDERLYING RIC	OPTION CHAIN RIC	TARGET STRIKE	SETTLEMENT RIC	OPTION DAY COUNT	FEE	COST FLOOR	COST MULTIPLIER	INITIAL EXPIRY	NOTIONAL PERCENTAGE	ROLL FREQUENCY
.RBCEU85P	.STOXX50E	0#STXE*.EX	85%	.FSX5ES	252	0.20%	0.3	2.0	12 Months	25%	3 Months
.RBCEU90P	.STOXX50E	0#STXE*.EX	90%	.FSX5ES	252	0.20%	0.3	2.0	12 Months	25%	3 Months
.RBCEU95P	.STOXX50E	0#STXE*.EX	95%	.FSX5ES	252	0.20%	0.3	2.0	12 Months	25%	3 Months
.RBCEU75P	.STOXX50E	0#STXE*.EX	95%	.FSX5ES	252	0.20%	0.3	2.0	12 Months	25%	3 Months
.RBCUK85P	.FTSE	0#LFE*.L	85%	.FTSESP	252	0.20%	0.5	3.5	12 Months	25%	3 Months
.RBCUK90P	.FTSE	0#LFE*.L	90%	.FTSESP	252	0.20%	0.5	3.5	12 Months	25%	3 Months
.RBCCA85P	XIU.TO	0#XIU*.M	85%	XIU.TO	252	0.20%	0.4	3.0	6 Months	50%	3 Months
.RBCCA85P	XIU.TO	0#XIU*.M	90%	XIU.TO	252	0.20%	0.4	3.0	6 Months	50%	3 Months

Table 5 Index Parameters



INDEX RIC	TIMEZONE	FULL DAY TWAP WINDOW	HALF DAY TWAP WINDOW	TWAP SPECIFICATION	FULL DAY INDEX SNAP TIME	HALF DAY INDEX SNAP TIME	FULL DAY FORWARD SNAP TIME	HALF DAY FORWARD SNAP TIME
.RBCUS90P	America/New_York	15:45 – 16:00	12:45 – 13:00	1 st Tick every 15 seconds with positive Bid and Ask Index: 1 st Tick every 15 seconds of the Index level	Index level at 15:30	Index level at 12:30	First Tick with positive Bid and Ask after 15:45	First Tick with positive Bid and Ask after 12:45
.RBCUS80P	America/New_York	15:45 – 16:00	12:45 – 13:00		Index level at 15:30	Index level at 12:30		
.RBCUS85P	America/New_York	15:45 – 16:00	12:45 – 13:00		Index level at 15:30	Index level at 12:30		
.RBCUS95P	America/New_York	15:45 – 16:00	12:45 – 13:00		Index level at 15:30	Index level at 12:30		
.RBCUS70P	America/New_York	15:45 – 16:00	12:45 – 13:00		Index level at 15:30	Index level at 12:30		
.RBCUS75P	America/New_York	15:45 – 16:00	12:45 – 13:00		Index level at 15:30	Index level at 12:30		
.RBCEU80P	Europe/Berlin	17:15 – 17:30	N/A		Index level at 17:00	N/A	First Tick with positive Bid	N/A



INDEX RIC	TIMEZONE	FULL DAY TWAP WINDOW	HALF DAY TWAP WINDOW	TWAP SPECIFICATION	FULL DAY INDEX SNAP TIME	HALF DAY INDEX SNAP TIME	FULL DAY FORWARD SNAP TIME	HALF DAY FORWARD SNAP TIME
.RBCEU85P	Europe/Berlin	17:15 – 17:30	N/A	Options: 1 st Tick every 15 seconds with positive Bid and Ask Index: 1 st Tick every 15 seconds of the Index level	Index level at 17:00	N/A	and Ask after 17:15	
.RBCEU90P	Europe/Berlin	17:15 – 17:30	N/A		Index level at 17:00	N/A		
.RBCEU95P	Europe/Berlin	17:15 – 17:30	N/A		Index level at 17:00	N/A		
.RBCEU75P	Europe/Berlin	17:15 – 17:30	N/A		Index level at 17:00	N/A		
.RBCUK85P	Europe/ London	16:15 – 16:30	12:15 – 12:30	Options: 1 st Tick every 15 seconds with positive Bid and Ask	Index level at 16:00	Index level at 12:00	First Tick with positive Bid and Ask after 16:15	First Tick with positive Bid and Ask after 12:15
.RBCUK90P	Europe/ London	16:15 – 16:30	12:15 – 12:30	Index: 1 st Tick every 15 seconds of the Index level	Index level at 16:00	Index level at 12:00		



INDEX RIC	TIMEZONE	FULL DAY TWAP WINDOW	HALF DAY TWAP WINDOW	TWAP SPECIFICATION	FULL DAY INDEX SNAP TIME	HALF DAY INDEX SNAP TIME	FULL DAY FORWARD SNAP TIME	HALF DAY FORWARD SNAP TIME
.RBCCA85P	America/New_York	15:45 – 16:00	12:45 – 13:00	1 st Tick every 15 seconds with positive Bid and Ask	ETF level at 15:30	ETF level at 12:30	First Tick with positive Bid and Ask after 15:45	First Tick with positive Bid and Ask after 12:45
.RBCCA90P	America/New_York	15:45 – 16:00	12:45 – 13:00	ETF: 1 st Tick every 15 seconds of the ETF trade level	Index level at 15:30	ETF level at 12:30		

Table 6 Index TWAP Parameters

INDEX RIC	O/N RIC	OIS SWAP CHAIN RIC	ALTERNATIVE O/N RIC	ALTERNATIVE OIS SWAP CHAIN RIC	RATES DAY COUNT	SWAP ADJUSTMENT METHOD	CALCULATION DAY
.RBCUS90P	USDSOFR=	USDSROIS=	USONFFE=	USDOIS=	360	Modified Following	Each Weekday where the Exchanges CBOE and NYSE are open for business
.RBCUS80P	USDSOFR=	USDSROIS=	USONFFE=	USDOIS=	360	Modified Following	Each Weekday where the Exchanges CBOE and NYSE are open for business



INDEX RIC	O/N RIC	OIS SWAP CHAIN RIC	ALTERNATIVE O/N RIC	ALTERNATIVE OIS SWAP CHAIN RIC	RATES DAY COUNT	SWAP ADJUSTMENT METHOD	CALCULATION DAY
.RBCUS85P	USDSOFR=	USDSROIS=	USONFFE=	USDOIS=	360	Modified Following	Each Weekday where the Exchanges CBOE and NYSE are open for business
.RBCUS95P	USDSOFR=	USDSROIS=	USONFFE=	USDOIS=	360	Modified Following	Each Weekday where the Exchanges CBOE and NYSE are open for business
.RBCUS75P	USDSOFR=	USDSROIS=	USONFFE=	USDOIS=	360	Modified Following	Each Weekday where the Exchanges CBOE and NYSE are open for business
.RBCUS70P	USDSOFR=	USDSROIS=	USONFFE=	USDOIS=	360	Modified Following	Each Weekday where the Exchanges CBOE and NYSE are open for business
.RBCEU80P	EUROSTR=	EURESTOIS=	EONIA= (-0.085%)	EURON=	360	Modified Following	Each Weekday where the Exchange EUREX is open for business
.RBCEU85P	EUROSTR=	EURESTOIS=	EONIA= (-0.085%)	EURON=	360	Modified Following	Each Weekday where the Exchange EUREX is open for business
.RBCEU90P	EUROSTR=	EURESTOIS=	EONIA= (-0.085%)	EURON=	360	Modified Following	Each Weekday where the Exchange EUREX is open for business
.RBCEU95P	EUROSTR=	EURESTOIS=	EONIA= (-0.085%)	EURON=	360	Modified Following	Each Weekday where the Exchange EUREX is open for business



INDEX RIC	O/N RIC	OIS SWAP CHAIN RIC	ALTERNATIVE O/N RIC	ALTERNATIVE OIS SWAP CHAIN RIC	RATES DAY COUNT	SWAP ADJUSTMENT METHOD	CALCULATION DAY
.RBCEU75P	EUROSTR=	EURESTOIS=	EONIA= (-0.085%)	EURON=	360	Modified Following	Each Weekday where the Exchange EUREX is open for business
.RBCUK85P	SONIAOSR=	GBPOIS=	N/A	N/A	365	Modified Following	Each Weekday where the Exchanges ICE and LSE is open for business
.RBCUK90P	SONIAOSR=	GBPOIS=	N/A	N/A	365	Modified Following	Each Weekday where the Exchanges ICE and LSE is open for business
.RBCCA85P	CORRA=	CADOIS=	N/A	N/A	360	Modified Following	Each Weekday where the Exchanges Montreal and TSX Venture Exchange are open for business
.RBCCA90P	CORRA=	CADOIS=	N/A	N/A	360	Modified Following	Each Weekday where the Exchanges Montreal and TSX Venture Exchange are open for business

Table 7 Index Interest Rate Parameters

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