

# INDEX GUIDELINE

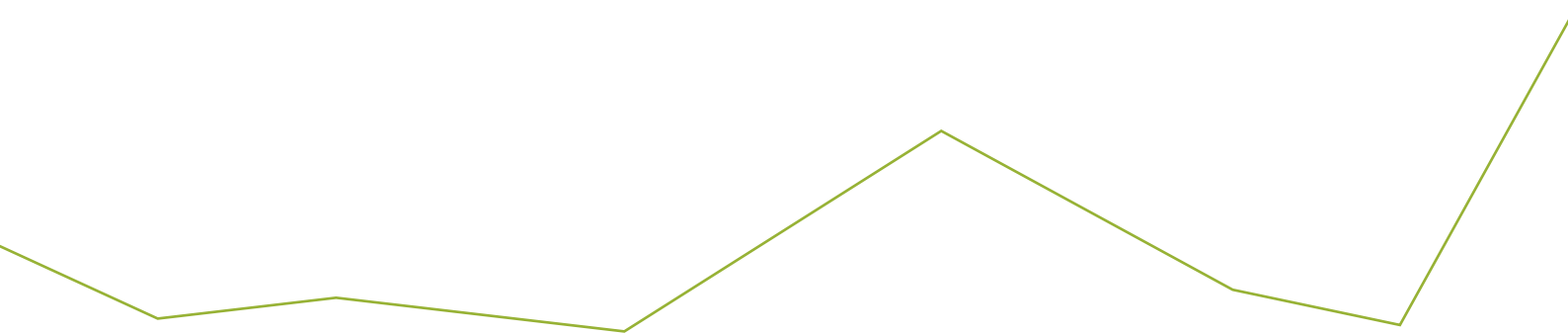
RBC Rolling Equity Future Index Family

Version 1.0

25 March 2019

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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 Index Family. Any changes made to the Guideline are initiated by the Committee specified in Section 1.5. The Index Family is calculated and published by Solactive AG. The name "Solactive" is trademarked.

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



## 1 INDEX SPECIFICATIONS

- > The RBC Rolling Equity Futures Index Family (the "Indices") are Indices of RBC Capital Markets and are calculated and distributed by Solactive AG.
- > Each index tracks the performance of an equity index future and rolls the exposure during the Roll Period from the Lead Contract Month Future into the Next Contract Month Future.

### 1.1 SHORT NAME AND ISIN

The Indices are distributed under the identifiers stated in section 5.1.

### 1.2 INITIAL VALUE

The Indices will be based on 100 on the respective Index Base Date stated in section 5.1.

### 1.3 DISTRIBUTION

The Indices are published via the price marketing services of Boerse Stuttgart AG and is distributed to all affiliated vendors. Each vendor decides on an individual basis as to whether it will distribute/display the Indices via its information systems.

### 1.4 PRICES AND CALCULATION FREQUENCY

The price of each Index is calculated on each Trading Day based on the settlement prices on the respective Exchanges on which the respective Index Components are listed. The most recent settlement prices of all Index Components are used. Should there be no current settlement price available, the most recent settlement price on Reuters for the preceding Trading Day is used in the calculation.

The Index is calculated once a Business Day. In the event that data cannot be provided to the pricing services of Boerse Stuttgart AG the Indices cannot be distributed.

### 1.5 OVERSIGHT

A Committee composed of staff from Solactive AG (the "Committee" or the "Index Committee") is responsible for decisions regarding the composition of the Indices as well as any amendments to the rules.

Members of the Committee can recommend changes to the Guideline and submit them to the Committee for approval.

### 1.6 PUBLICATION

All specifications and information relevant for calculating the Index are made available on the <http://www.solactive.com> web page and sub-pages.

### 1.7 HISTORICAL DATA

Historical data will be maintained from the Base Date of the Indices.



## 1.8 LICENSING

Licenses to use the Index as the underlying value for derivative instruments are issued to stock exchanges, banks, financial services providers and investment houses by RBC Capital Markets.

# 2 CALCULATION OF THE INDICES

## 2.1 TERMS AND NOTATIONS

$I(t)$  = Index Value on Trading Day  $t$

$I(t - 1)$  = Index Value on the Trading Day immediately preceding Trading Day  $t$

$MDE$  = Market Disruption Event

$CM(t)$  = Month of Trading Day  $t$

$NCM(t)$  = Month following the month of Trading Day  $t$

$BD(t; m)$  = Trading Day Count of Trading Day  $t$  relative to calendar month  $m$ , for example:

$$BD(12/17/15; 12/15) = 13$$

$$BD(12/01/15; 12/15) = 1$$

$$BD(11/30/15; 12/15) = 0$$

$$BD(11/26/15; 12/15) = -2$$

$HRP$  = Hedge Roll Period, defined as the set of integers consisting of consecutive Trading Days Counts on which the Lead Contract Month Future is rolled into the Next Contract Month Future, defined as follows:

For RBCEEFEE: {  $LTD(RefM(t)) - 4$ ,  $LTD(RefM(t)) - 3$ ,  $LTD(RefM(t)) - 2$  }.

For RBCEUFUE: {  $LTD(RefM(t)) - 7$ ,  $LTD(RefM(t)) - 6$ ,  $LTD(RefM(t)) - 5$ ,  $LTD(RefM(t)) - 4$  }.

With:

$LTD(RefM(t))$  = Last Trading Day of the Lead Contract Month Future as of the Reference Month of Trading Day  $t$

$FRD$  = First Roll Day, defined as the smallest integer in the Hedge Roll Period.

$HRW(j)$  = Hedge Roll Weight on Trading Day Count  $j$ , defined in Section 2.3.

$LND$  = Lead Next Flipping Day, set to 1 for both indices.

$RefM(t)$  = Reference Month of Trading Day  $t$ , defined as follows:

$$RefM(t) = \begin{cases} NCM(t) & \text{if } BD(t; NCM(t)) \geq LND \\ CM(t) & \text{else} \end{cases}$$

$P(L, t)$  = Settlement Price of the Lead Contract Month Future on Trading Day  $t$



$P(N, t)$  = Settlement Price of the Next Contract Month Future on Trading Day  $t$

$ARW(t)$  = Actual Roll Weight on Trading Day  $t$ , defined as follows:

If  $BD(t - 1; RefM(t - 1)) \in HRP$ , then

$$ARW(t) = \begin{cases} ARW(t - 1) & \text{if MDE happens on } t \\ HRW(BD(t - 1; RefM(t - 1))) & \text{else} \end{cases}$$

Otherwise,

$$ARW(t) = \begin{cases} 1 - HRW(BD(t - 1; RefM(t - 1))) & \text{if } BD(t; RefM(t)) = LND \\ HRW(BD(t - 1; RefM(t - 1))) & \text{else} \end{cases}$$

$RPV(s, t)$  = Reference Portfolio Value on Trading Day  $t$  with prices on Trading Day  $s$ , defined as follows:

$$RPV(s, t) = ARW(t) * P(L, s) + (1 - ARW(t)) * P(N, s)$$

## 2.2 INDEX FORMULA

The Index Value on Trading Day  $t$  is calculated in accordance with the following formula:

$$I(t) = I(t - 1) * \frac{RPV(t, t)}{RPV(t - 1, t)}$$

## 2.3 HEDGE ROLL WEIGHTS

The Hedge Roll Weights for the Lead Future Contract for all Indices are given below:

RBCEEFEE:

$BD(t; RefM(t))$	$HRW(BD(t; RefM(t)))$
$< LTD(RefM(t)) - 4$	1
$LTD(RefM(t)) - 4$	2/3
$LTD(RefM(t)) - 3$	1/3
$> LTD(RefM(t)) - 3$	0

RBCEUFUE:

$BD(t; RefM(t))$	$HRW(BD(t; RefM(t)))$
$< LTD(RefM(t)) - 7$	1
$LTD(RefM(t)) - 7$	3/4
$LTD(RefM(t)) - 6$	2/4



$LTD(RefM(t)) - 5$	1/4
$> LTD(RefM(t)) - 5$	0

## 2.4 ACCURACY

> The value of the Indices will be rounded to 2 decimal places.

## 2.5 MARKET DISRUPTION EVENTS

From time to time, market disruption events may occur that will result in the postponement of an Index and/or the adjustment of the roll period. A Market Disruption Day will be deemed to have occurred if any of the following events occur:

- i. The Settlement Price of an Index Constituent is not published by the Exchange by 5:00 PM Eastern Time for the US instruments 6:00 PM CET for the European instruments;
- ii. The Settlement Price of an Index Constituent is a Limit price (as defined by the applicable Exchange);

If any of these events occur on a Trading Day not included in the Hedge Roll Period, no immediate action will be taken, but in case of missing Settlement Prices if the applicable Exchange publishes a Settlement Price later the Index will be restated for that particular Trading Day. If any of these events occur on a Trading Day included in the Hedge Roll Period, the portion of the roll that was to take place on the Market Disruption Day will take place on the next non-Market Disruption Trading Day. For instance, if the Market Disruption Day occurred on the 7th Trading Day of the month, the portion that was to be rolled on day 7 will be added to the roll on the 8th Trading Day.

If the Market Disruption Event continues over a period of eight Trading Days, then the Committee will determine the necessary action (including but not limited to taking into account the market conditions prevailing at this point in time, the last quoted Prices for each of the Index Components as well as any other conditions that it deems relevant for calculating the Index value) such that the affected securities resulting from the Market Disruption Event are no longer causing such disruption to occur.

## 2.6 MISCELLANEOUS

### 2.5.1 Recalculation

Solvactive AG makes the greatest possible efforts to accurately calculate and maintain its indices. However, the occurrence of errors in the index determination process cannot be ruled out. In such cases Solvactive AG adheres to its publicly available [Correction Policy](#).





### 3 DEFINITIONS

“Lead Contract Month future” means the future contract given in the roll schedule under Section 5.2.

“Trading Day” means any day in which the respective exchange is open and publishes a Contract Settlement Price for the Designated Relevant Contracts.

“Exchange” means the Chicago Mercantile Exchange (“CME”) or the EUREX. More details of the applicable Exchange can be seen in Section 5.1.

“Last Trading Day” means the last day the Lead Contract Month Future can be traded on the Exchange which is usually the third Friday of the months March, June, September and December.

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

The “Index Calculator” is Solactive AG or any other appropriately appointed successor in this function.

The “Index Currency” can be seen in Section 5.1.

The “Index Baser Date” is for all indices the 2<sup>nd</sup> January 2009.

A “Market Disruption Event” is defined in section 2.5.

“Next Contract Month future” means the future contract given in the roll schedule under Section 5.2 for the month following the current month.

### 4 CHANGES IN CALCULATION METHOD

The application by the Index Calculator of the method described in this document is final and binding. The Index Calculator 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, financial or tax reasons may require changes to be made to this method. The Index Calculator 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 Calculator is not obliged to provide information on any such modifications or changes. Despite the modifications and changes, the Index Calculator will take the appropriate steps to ensure a calculation method is applied that is consistent with the method described above.



## 5 APPENDIX

### 5.1 Indices in the RBC Rolling Equity Futures Index Family

Name	ISIN	RIC	Ticker	Exchange	Futures Base-RIC	Currency
RBC US Equity Rolling Futures Index	DE000SLA7QK3	.RBCEUFUE	RBCEUFUE	CME	ES	USD
RBC Eurozone Equity Rolling Futures Index	DE000SLA7QL1	.RBCEEFEE	RBCEEFEE	EUREX	STXE	EUR

### 5.2 Contract Schedules

Comm/Month	1	2	3	4	5	6	7	8	9	10	11	12	
ES		H	H	H	M	M	M	U	U	U	Z	Z	Z
STXE		H	H	H	M	M	M	U	U	U	Z	Z	Z

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

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

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