

Guideline relating to

Solactive Leveraged Currency Index Family

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

## Introduction

This document is to be used as a guideline with regard to the composition, calculation and management of the Solactive Factor Currency Index Family. The Solactive Factor Currency Index Family is calculated and published by Solactive AG. Solactive AG reserves all rights relating to the index family. Changes to the index guideline and additional announcements covering the Solactive Leveraged Currency Index Family are made available on the Announcement section of Solactive.com (please visit <http://www.solactive.com/category/announcements/>)

## 1 Index specifications

The Solactive Factor Currency Index Family (consisting of a number of single indices, each such index called an “**Index**” and together the “**Indices**”) tracks a daily leveraged exposure to foreign exchange rates taking into account financing costs.

### 1.1 Short name

The Indices of the Solactive Factor Currency Index Family are distributed under the identifiers stated in the appendix.

### 1.2 Initial value

The initial values of the Indices and their base dates are stated in the appendix.

### 1.3 Distribution

The Solactive Factor Currency Index Family is 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 Solactive Factor Currency Index Family via its information systems.

### 1.4 Prices and calculation frequency

The Indices are calculated on each Business Day based on the prices of the respective underlying assets. During the times of live calculation the Indices are calculated based on the most recent prices from Thomson Reuters; the closing levels of the Indices are determined based on the official closing rates (see Appendix 1) published by the WM Company. In case there is no current price available during the time of live calculation, the most recent one is used.

In the event that data cannot be provided to the pricing services of Boerse Stuttgart AG the Indices cannot be distributed.

Any materially incorrect calculation is adjusted on a retrospective basis.

## 2 Calculation of the Indices

### 2.1 Index formula (intraday levels)

Subject to the occurrence of an Intraday Restrike Event (as further explained in section 2.6), the intraday level of an Index on a Business Day (t) at a Calculation Time (v) comprised between the Opening Time and the Closing Time, noted  $I(t, v)$ , is calculated in accordance with the following formula:

$$I(t, v) = I(t - 1) \times \left( 1 + L \times \left( \frac{\text{Spot}(t, v)}{\text{Spot}(t - 1)} - 1 \right) \right)$$

### 2.2 Index formula (closing level)

Subject to the occurrence of an Intraday Restrike Event (as further explained in section 2.6), the closing level of an Index on a Business Day (t), noted  $I(t)$ , is calculated in accordance with the following formula:

$$I(t) = I(t - 1) \times \left( 1 + L \times \left( \frac{\text{Spot}(t)}{\text{Spot}(t - 1)} - 1 - \text{Financing Component}(t) \right) + \frac{\text{ACT}(t - 1, t)}{360} * \text{FiRate}(t - 1) \right)$$

For the avoidance of doubt, the following part of the formula " $\frac{\text{ACT}(t-1,t)}{360} * \text{FiRate}(t - 1)$ " was added to the formula of the first series (see Appendix) only on the 9<sup>th</sup> of September 2015

### 2.3 Determination of the Financing Component

The Financing Component on a Business Day (t), noted  $\text{Financing Component}(t)$ , is calculated in accordance with the following formula:

$$\text{Financing Component}(t) = \text{Forward Roll Index}(t) - \left( \frac{\text{Spot}(t)}{\text{Spot}(t - 1)} - 1 \right)$$

### 2.4 Determination of the Forward Roll Index

The Forward Roll Index on a Business Day (t), noted  $\text{Forward Roll Index}(t)$ , is calculated in accordance with the following formula:

$$\text{Forward Roll Index}(t) = \frac{\frac{\text{FWD}(t, T_{\text{fwd}}(t))}{\text{FWD}(t - 1, T_{\text{fwd}}(t))} - 1}{1 + (\text{Rate}(\text{CUR}_2, t, T_{\text{fwd}}(t)) \times \text{DCF}(t, T_{\text{fwd}}(t)))}$$

$$\text{FWD}(t, T_{\text{fwd}}(t)) = \frac{\text{FWD}(t, 1\text{m}) \times \text{ACT}(T_{\text{spot}}(t), T_{\text{fwd}}(t)) + \text{Spot}(t) \times \text{ACT}(T_{\text{fwd}}(t), T_{\text{mat1M}}(t))}{\text{ACT}(T_{\text{spot}}(t), T_{\text{mat1M}}(t))}$$

$$\text{Rate}(\text{CUR}_2, t, T_{\text{fwd}}(t)) = \frac{\text{Rate}(t, 1\text{M}) \times \text{ACT}(T_{\text{matrate1d}}(t), T_{\text{fwd}}(t)) + \text{Rate}(t, 1\text{d}) \times \text{ACT}(T_{\text{fwd}}(t), T_{\text{matrate1M}}(t))}{\text{ACT}(T_{\text{matrate1d}}(t), T_{\text{matrate1M}}(t))}$$

### 2.5 Calculation precision

The Index value is rounded to four decimal places.

### 2.6 Extraordinary adjustment

#### 2.6.1. Initialisation

At the beginning of each Business Day (t) we define  $Spot(t_0) = Spot(t-1)$  and  $i=1$ .

### 2.6.2. Occurrence and management of an extraordinary adjustment

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

$$(i) \quad \text{If } L > 0 \quad \frac{Spot(t, v)}{Spot(t_{i-1})} < 1 - EAT$$

$$(ii) \quad \text{If } L < 0 \quad \frac{Spot(t, v)}{Spot(t_{i-1})} > 1 + EAT$$

With EAT being the extraordinary adjustment threshold which is provided in Appendix 1.

Then such moment defined as  $v_i$  is deemed to be an Restrike Event Time and we define  $Spot(t_i)$  as follows:

$$(i) \quad \text{If } L > 0 \quad Spot(t_i) = \min_{\theta \in [v_i, v_i^+]} [Spot(t, \theta)]$$

$$(ii) \quad \text{If } L < 0 \quad Spot(t_i) = \max_{\theta \in [v_i, v_i^+]} [Spot(t, \theta)]$$

The period  $[v_i, v_i^+]$  is the Restrike Observation Period corresponding to the Restrike Event Time  $v_i$ .

Following which we define  $I(t_i)$  :

$$I(t_i) = I(t_{i-1}) \times \left( 1 + L \times \left( \frac{Spot(t_i)}{Spot(t_{i-1})} - 1 \right) \right)$$

and in such case, for any Calculation Time v following  $v_i^+$  the level on the Index shall be calculated in accordance with the following formulae:

$$I(t, v) = I(t_i) \times \left( 1 + L \times \left( \frac{Spot(t, v)}{Spot(t_i)} - 1 \right) \right)$$

In the absence of any subsequent Intraday Restrike Event on the same Business Day (t), then:

$$I(t) = I(t_i) \cdot \left( 1 + L \times \left( \frac{Spot(t)}{Spot(t_i)} - 1 - \text{Financing Component}(t) \right) + \frac{ACT(t-1, t)}{360} * \text{FiRate}(t-1) \right)$$

For the avoidance of doubt, the following part of the formula " $\frac{ACT(t-1, t)}{360} * \text{FiRate}(t-1)$ " was added to the formula of the first series (see Appendix) only on the 9<sup>th</sup> of September 2015

In the case of any subsequent Intraday Restrike Event on the same Business Day (t), then this section 2.6.2 shall be repeated with i being incremented to the next integer (i.e.  $i=2$ , then  $i=3$ , etc.)

## 3 Definitions

<b>ACT(s,t)</b>	means, in respect of two days s and t, the number of calendar days between s (excluded) and t (included).
<b>Business Day</b>	means each and every weekday (i.e. Monday to Friday) with the exception of 25 December and 1 January.
<b>Calculation Time</b>	means, on a Business Day, any time between the Opening Time and the Closing Time.
<b>Closing Time</b>	means 16:00 London time.
<b>DCF(t, T<sub>fwd</sub>(t))</b>	means, in respect of an Index and a Business Day (t), the number of calendar days between t (included) and T <sub>fwd</sub> (t) (excluded) divided by 360.
<b>Financing Component(t)</b>	means, in respect of an Index and a Business Day (t), the value of the Financing Component determined in accordance with section 2.3.
<b>FIRate(t)</b>	means, in respect of an Index and a Business Day (t), if CUR <sub>2</sub> = EUR the EONIA fixed on t, if CUR <sub>2</sub> = USD the Federal Funds Effective Rate US fixed on t and otherwise Rate(t,1d). If FIRate(t) is not available due to closed days then FiRate (t) is equal to its last available value.
<b>Forward Maturity Date</b>	means, in respect of an Index and a Roll Date, the maturity date of the 1-Month FX Forward which can be traded on such Roll Date. For each Roll Date, the corresponding Forward Maturity Date is therefore determined as the date falling one month after the Spot Date of such Roll Date (which can also be noted T <sub>spot</sub> (T <sub>roll</sub> (t))) or if such date is not a FX Settlement Day, the immediately following FX Settlement Day, unless that FX Settlement Day falls in the next calendar month, in which case that date will be the first preceding day that is a FX Settlement Day.
<b>Forward Roll Index(t)</b>	means, in respect of an Index and a Business Day (t), the value of the Forward Roll Index determined in accordance with section 2.4.
<b>FWD(t, T<sub>fwd</sub>(t))</b>	means, in respect of an Index and a Business Day (t), the outright forward quoted on date t at 4.00pm London Time which matures on T <sub>fwd</sub> (t) and is contributed by WMCO. For the avoidance of doubt, it is the value of CUR <sub>1</sub> expressed in units of CUR <sub>2</sub> . If not directly observable on WMCO, FWD(t, T <sub>fwd</sub> (t)) will be linearly interpolated among the available quotations according to the maturities in accordance with the provisions of section 2.4.
<b>FWD(t, 1m)</b>	means, in respect of an Index and a Business Day (t), the 1-Month outright forward quoted on date t at 4.00pm London Time and is contributed by WMCO. For the avoidance of doubt, it is the value of CUR <sub>1</sub> expressed in units of CUR <sub>2</sub> .
<b>FX Settlement Day</b>	means, in respect of an Index, a day on which commercial banks and foreign exchange markets settle payments and are open for general business (including dealings in foreign exchange and foreign currency deposits) in respect of both CUR <sub>1</sub> and CUR <sub>2</sub> .
<b>I(t)</b>	means, in respect of an Index and a Business Day (t), the closing level of the Index determined in accordance with section 2.2.
<b>I(t,v)</b>	means, in respect of an Index, a Business Day (t) and a Calculation Time (v), the intraday level of the Index determined in accordance with section 2.1.
<b>Intraday Restrike Event</b>	means the occurrence of an intraday restrike event as described in section 2.6.
<b>L</b>	means, in respect of an Index, the leverage factor provided in Appendix 1.
<b>Opening Time</b>	means 07:00 London time.

<b>Potential Roll Date</b>	means any Business Day (t) on which the Forward Maturity Date corresponds to the Spot Date.
<b>Rate(CUR<sub>2</sub>,t,T<sub>fwd</sub>(t))</b>	means, in respect of an Index and a Business Day (t), the CUR <sub>2</sub> Libor fixed on t and interpolated according the market convention for the maturity T <sub>fwd</sub> (t).
<b>Rate(t,1M)</b>	means, in respect of an Index and a Business Day (t), the CUR <sub>2</sub> Libor one month fixing
<b>Rate(t,1d)</b>	means, in respect of an Index and a Business Day (t), the CUR <sub>2</sub> Libor overnight fixing and the STIBOR T/N as a proxy of the overnight when CUR <sub>2</sub> = SEK.
<b>Restrike Event Time</b>	means the time at which an Intraday Restrike Event occurs, as described in section 2.6.
<b>Restrike Observation Period</b>	means in respect of an Intraday Restrike Event, the period starting on and excluding the Restrike Event Time ("v <sub>i</sub> ") and finishing on and including the earlier of (i) the time falling 15 minutes after the Restrike Event Time and (ii) the Closing Time as described in section 2.6 ("v <sub>i</sub> <sup>+</sup> ").
<b>Roll Date</b>	means, in respect of an Index, any of the following dates: (1) 31 January 2014 and (2) each Business Day which is a Potential Roll Date provided that the Business Day which immediately precedes such Business Day is not a Potential Roll Date.
<b>Spot(t)</b>	means, in respect of an Index and a Business Day (t),the closing spot level to convert one unit of CUR <sub>1</sub> (as provided in Appendix 1) into CUR <sub>2</sub> (as provided in CUR <sub>2</sub> ), as published by the WM Company. For the avoidance of doubt, Spot(t) is determined so that one unit of CUR <sub>1</sub> is equal to Spot(t) units of CUR <sub>2</sub> .
<b>Spot(t,v)</b>	means, in respect of an Index, a Business Day (t) and a Calculation Time (v),the intraday level to convert one unit of CUR <sub>1</sub> (as provided in Appendix 1) into CUR <sub>2</sub> (as provided in Appendix 1), as published by Reuters. For the avoidance of doubt, Spot(t) is determined so that 1 unit of CUR <sub>1</sub> is equal to Spot(t,v) units of CUR <sub>2</sub> .
<b>Spot Date</b> or <b>T<sub>spot</sub>(t)</b>	means, in respect of an Index and a day (t), the date which falls two FX Settlement Days after day (t).
<b>T<sub>fwd</sub>(t)</b>	means, in respect of an Index and a Business Day (t), the Forward Maturity Date which corresponds to the last Roll Date preceding such Business Day (t) (i.e. T <sub>roll</sub> (t)).
<b>T<sub>mat1M</sub>(t)</b>	means, in respect of an Index and a Business Day (t), the date which falls one month after T <sub>spot</sub> (t) (or if such date is not a FX Settlement Day, the immediately following FX Settlement Day, unless that FX Settlement Day falls in the next calendar month, in which case that date will be the first preceding day that is a FX Settlement Day).
<b>T<sub>matrate1M</sub>(t)</b>	means, in respect of an Index and a Business Day (t), the date which is the maturity date of Rate(t,1M).
<b>T<sub>matrate1d</sub>(t)</b>	means, in respect of an Index and a Business Day (t), the date which is the maturity date of Rate(t,1d)
<b>T<sub>roll</sub>(t)</b>	means, in respect of an Index and a Business Day (t), the last Roll Date which precedes such Business Day (t) (excluded).
<b>v</b>	v is a value for the time of the day. For example, for 8:00 am v can take the value 8/24.

# Appendix 1

## Series 1 indices:

INDEX	L	CUR <sub>2</sub>	CUR <sub>1</sub>	NAME	TICKER	Fixing	EAT
USD SEK +5x	5	SEK	USD	x5 Daily Long USD and Short SEK Index	USDSEK5L	WMCO 4pm London Fixing	10.00%
USD SEK -5x	-5	SEK	USD	x5 Daily Short USD and Long SEK Index	USDSEK5S	WMCO 4pm London Fixing	10.00%
EUR SEK +5x	5	SEK	EUR	x5 Daily Long EUR and Short SEK Index	EURSEK5L	WMCO 4pm London Fixing	10.00%
EUR SEK -5x	-5	SEK	EUR	x5 Daily Short EUR and Long SEK Index	EURSEK5S	WMCO 4pm London Fixing	10.00%

INDEX	L	CUR <sub>2</sub>	CUR <sub>1</sub>	NAME	TICKER	Official Close	EAT
USD EUR +3x	3	EUR	USD	x3 Daily Long USD and Short EUR Index	USDEUR3L	WMCO 4pm London Fixing	16.66%
USD EUR -3x	-3	EUR	USD	x3 Daily Short USD and Long EUR Index	USDEUR3S	WMCO 4pm London Fixing	16.66%
USD EUR +5x	5	EUR	USD	x5 Daily Long USD and Short EUR Index	USDEUR5L	WMCO 4pm London Fixing	10.00%
USD EUR -5x	-5	EUR	USD	x5 Daily Short USD and Long EUR Index	USDEUR5S	WMCO 4pm London Fixing	10.00%
GBP EUR +5x	5	EUR	GBP	x5 Daily Long GBP and Short EUR Index	GBPEUR5L	WMCO 4pm London Fixing	10.00%
GBP EUR -5x	-5	EUR	GBP	x5 Daily Short GBP and Long EUR Index	GBPEUR5S	WMCO 4pm London Fixing	10.00%
USD EUR +7x	7	EUR	USD	x7 Daily Long USD and Short EUR Index	USDEUR7L	WMCO 4pm London Fixing	10.00%
USD EUR -7x	-7	EUR	USD	x7 Daily Short USD and Long EUR Index	USDEUR7S	WMCO 4pm London Fixing	10.00%
GBP EUR +7x	7	EUR	GBP	x7 Daily Long GBP and Short EUR Index	GBPEUR7L	WMCO 4pm London Fixing	10.00%
GBP EUR -7x	-7	EUR	GBP	x7 Daily Short GBP and Long EUR Index	GBPEUR7S	WMCO 4pm London Fixing	10.00%



**Series 2 indices:**

INDEX	L	CUR <sub>2</sub>	CUR <sub>1</sub>	NAME	TICKER	Official Close	EAT
EUR USD +5x	5	USD	EUR	x5 Daily Long EUR and Short USD Index	EURUSD5L	WMCO 4pm London Fixing	10.00%
EU RUSD -5x	-5	USD	EUR	x5 Daily Short EUR and Long USD Index	EURUSD5S	WMCO 4pm London Fixing	10.00%
JPY USD +5x	5	USD	JPY	x5 Daily Long JPY and Short USD Index	JPYUSD5L	WMCO 4pm London Fixing	10.00%
JPY USD -5x	-5	USD	JPY	x5 Daily Short JPY and Long USD Index	JPYUSD5S	WMCO 4pm London Fixing	10.00%
GBP USD +5x	5	USD	GBP	x5 Daily Long GBP and Short USD Index	GBPUSD5L	WMCO 4pm London Fixing	10.00%
GBP USD -5x	-5	USD	GBP	x5 Daily Short GBP and Long USD Index	GBPUSD5S	WMCO 4pm London Fixing	10.00%

INDEX	L	CUR <sub>2</sub>	CUR <sub>1</sub>	NAME	TICKER	Official Close	EAT
CNH EUR +3x	3	EUR	CNH	x3 Daily Long CNH and Short EUR Index	CNHEUR3L	WMCO 4pm London Fixing	16.66%
CNH EUR -3x	-3	EUR	CNH	x3 Daily Short CNH and Long EUR Index	CNHEUR3S	WMCO 4pm London Fixing	16.66%
CNH EUR +5x	5	EUR	CNH	x5 Daily Long CNH and Short EUR Index	CNHEUR5L	WMCO 4pm London Fixing	10.00%
CNH EUR -5x	-5	EUR	CNH	x5 Daily Short CNH and Long EUR Index	CNHEUR5S	WMCO 4pm London Fixing	10.00%
CNH EUR +7x	7	EUR	CNH	x7 Daily Long CNH and Short EUR Index	CNHEUR7L	WMCO 4pm London Fixing	10.00%
CNH EUR -7x	-7	EUR	CNH	x7 Daily Short CNH and Long EUR Index	CNHEUR7S	WMCO 4pm London Fixing	10.00%
CNH EUR +10x	10	EUR	CNH	X10 Daily Long CNH and Short EUR Index	CNHEUR10L	WMCO 4pm London Fixing	8.00%
CNH EUR -10x	-10	EUR	CNH	X10 Daily Short CNH and Long EUR Index	CNHEUR10S	WMCO 4pm London Fixing	8.00%
CNH USD +3x	3	USD	CNH	x3 Daily Long CNH and Short USD Index	CNHUSD3L	WMCO 4pm London Fixing	16.66%
CNH USD -3x	-3	USD	CNH	x3 Daily Short CNH and Long USD Index	CNHUSD3S	WMCO 4pm London Fixing	16.66%
CNH USD +5x	5	USD	CNH	x5 Daily Long CNH and Short USD Index	CNHUSD5L	WMCO 4pm London Fixing	10.00%
CNH USD -5x	-5	USD	CNH	x5 Daily Short CNH and Long USD Index	CNHUSD5S	WMCO 4pm London Fixing	10.00%
CNH SEK +5x	5	SEK	CNH	x5 Daily Long CNH and Short SEK Index	CNHSEK5L	WMCO 4pm London Fixing	10.00%
CNH SEK -5x	-5	SEK	CNH	x5 Daily Short CNH and Long SEK Index	CNHSEK5S	WMCO 4pm London Fixing	10.00%

INDEX	L	CUR <sub>2</sub>	CUR <sub>1</sub>	NAME	TICKER	Official Close	EAT
USDEUR 15x	15	EUR	USD	x15 Daily Long USD and Short EUR Index	USDEU15L	WMCO 4pm London Fixing	5.50%
USDEUR -15x	-15	EUR	USD	x15 Daily Short USD and Long EUR Index	USDEU15S	WMCO 4pm London Fixing	5.50%
USDEUR 10x	10	EUR	USD	x10 Daily Long USD and Short EUR Index	USDEU10L	WMCO 4pm London Fixing	8.00%
USDEUR -10x	-10	EUR	USD	x10 Daily Short USD and Long EUR Index	USDEU10S	WMCO 4pm London Fixing	8.00%

## Appendix 2

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### Calculation of the Index – change in calculation method

The application by Solactive AG of the method described in this document is final and binding. Solactive AG 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. Solactive AG may also make changes to the terms and conditions of the Index and the method applied to calculate the Index, which he deems to be necessary and desirable in order to prevent obvious or demonstrable error or to remedy, correct or supplement incorrect terms and conditions. Solactive AG is not obliged to provide information on any such modifications or changes. Despite the modifications and changes Solactive AG will take the appropriate steps to ensure a calculation method is applied that is consistent with the method described above.