

INDEX GUIDELINE

UBS Balanced Trend Index

Version 1.0

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INTRODUCTION

This document (the "**GUIDELINE**") is to be used as a guideline with regard to the composition, calculation and maintenance UBS Balanced Trend Index formerly known as the Credit Suisse Balanced Trend Index (the "Index"). Any amendments to the rules made to the GUIDELINE are approved by the OVERSIGHT COMMITTEE specified in Section 4.2. The INDEX is owned, 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

The UBS Trend Balanced Index previously known as Credit Suisse Trend Balanced Index is an investible index that has the objective of capturing the performance of a long-only exposure to a diversified range of asset classes including equities, bonds, commodities and real estate, with exposure of different asset classes allocated according to a dynamic allocation mechanism combining short-term momentum and long-term mean reversion.

1.2. IDENTIFIERS AND PUBLICATION

The INDEX is published under the following identifiers:

Name	Index Version	ISIN	Currency	Type	BBG ticker	Index Fee
UBS Balanced Base Trend Index	Base Index	TBD	USD	ER	CSTRENDS Index	0.50%
UBS Balanced Trend Index	Volatility Controlled Index	TBD	USD	ER	CSTREND5 Index	0.50%

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 September 24, 2002 the VOLATILITY CONTROLLED INDEX START DATE (VCISD), is 1000. Historical values from the VOLATILITY CONTROLLED INDEX START DATE (VCISD) to the TRANSITION DATE have been calculated by Credit Suisse International. The Live Date of the index is November 20, 2017. The closing levels of the Index from the TRANSITION DATE are calculated by Solactive and 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.



1.4. PRICES AND CALCULATION FREQUENCY

The closing level of the INDEX for each CALCULATION DAY is calculated. This closing level is based on the CLOSING PRICES for the INDEX COMPONENTS as published by their respective index provider. The CLOSING PRICES of INDEX COMPONENTS not listed in the INDEX CURRENCY are converted using the 4pm London time WM Fixing quoted by Refinitiv. If there is no 4pm London time WM Fixing for the relevant CALCULATION DAY, the last available 4pm London time WM Fixing will be used for the closing level calculation.

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 UBS AG ("UBS").



2. INDEX COMPOSITION

2.1. INDEX COMPONENTS

Effective from and including the TRANSITION DATE, the following 10 components (the "UBS COMPONENTS") will serve as INDEX COMPONENT in the calculation of the INDEX :

i	Asset	Index Component i	Description	Format	Currency	Ticker
1	US Equity	UBS Market Beta US Equity Index	Rolling S&P 500 futures	Future Index	USD	UISEMULL Index
2	European Equity	UBS Market Beta Europe Equity Index	Rolling EuroStoxx futures	Future Index	EUR	UISEMEER Index
3	Japanese Equity	UBS Market Beta Japan Broad Equity Index	Rolling Topix futures	Future Index	JPY	UISEMJTE Index
4	US Technology Stocks	UBS Market Beta US Growth Equity Index	Rolling Nasdaq futures	Future Index	USD	UISEMUNU Index
5	US 10Y Treasuries	US 10Y US Treasuries Index	Rolling 10y TY futures	Future Index	USD	MLTAU10E Index
6	US 5Y Treasuries	UBS 5Y US Treasuries Index	Rolling 5y TY futures	Future Index	USD	MLTAUS5E Index
7	European Treasuries	UBS 10Y German Bond Index	Rolling Bund futures	Future Index	EUR	MLTAG10E Index
8	Japanese Treasuries	UBS Market Beta Japan 10Y Bond TK ER JPY Index	Rolling JGB futures	Future Index	JPY	MLTAJ10E Index
9	US Real Estate	iShares U.S. Real Estate ETF	Real Estate ETF	ETF	USD	IYR UP Equity
10	Gold	UBS CMCI Components Gold Index	Rolling Gold futures	Index	USD	CTGCER Index



With the following 10 components components (each of them an INDEX COMPONENT, together the INDEX COMPONENTS) only effective up to but excluding TRANSITION DATE :

i	Asset	Index Component i	Format	Currency	Ticker
1	US Equity	CS US Equity Futures Index ER	Future Index	USD	CSRFESUE Index
2	European Equity	CS European Equity Futures Index ER	Future Index	EUR	CSRFVGEE Index
3	Japanese Equity	CS Japanese Equity Futures Index ER	Future Index	JPY	CSRFNKJE Index
4	US Technology Stocks	CS US Technology Equity Futures ER ¹	Future Index	USD	CSRFNQUE Index
5	US 10Y Treasuries	CS 10-Year US Treasury Note Futures Index ER	Future Index	USD	CSRFYUE Index
6	US 5Y Treasuries	CS 5-Year US Treasury Futures Index ER	Future Index	USD	CSRFFVUE Index
7	European Treasuries	CS Euro-Bund Futures Index ER	Future Index	EUR	CSRFRXEE Index
8	Japanese Treasuries	CS 10-year JGB Futures Index ER	Future Index	JPY	CSRFJBJE Index
9	US Real Estate	iShares U.S. Real Estate ETF ²	ETF	USD	IYR UP Equity ³
10	Gold	S&P GSCI Gold Official Close Index ER	Index	USD	SPGCGCP Index

¹ In respect of any CALCULATION DAY prior to the inception of Index Component 4 on Sep 17, 1999, any reference to Index Component 4 shall be deemed to refer to NASDAQ-100 TR Index (Bloomberg ticker: XNDX Index).

² In respect of any CALCULATION DAY (and for the purpose of calculating the Total Return Index Component Level on NYSE trading days as well) prior to and including December 31st, 2004 any reference to Index Component 9 shall be deemed to refer to the DJUSRET Index (Bloomberg ticker: DJSURET Index).

³ referred to as "IYR" hereinafter

For the avoidance of doubt, on any Calculation Day on and after the Transition Date, the UBS Index Components will be used for the purposes of calculations defined in Section 4 and 5. The calculation of all



the intermediary values that rely on the use of historical values shall use the historical values of the UBS indices even if those historical dates precede the Transition Date.

2.2. INDEX COMPONENTS CHARACTERISTICS

i	Asset	Cap	Return Type	Short Trigger	Long Trigger	Oversold Trigger 2	Oversold Trigger 1	Overbought Trigger 1	Overbought Trigger 2
1	US Equity	15%	Excess Return	97.50%	102.50%	75.00%	82.50%	117.50%	125.00%
2	European Equity	15%	Excess Return	97.50%	102.50%	75.00%	82.50%	117.50%	125.00%
3	Japanese Equity	15%	Excess Return	97.50%	102.50%	75.00%	82.50%	117.50%	125.00%
4	US Technology Stocks	15%	Excess Return ⁴	97.50%	102.50%	75.00%	82.50%	117.50%	125.00%
5	US 10 Year Treasuries	40%	Excess Return	99.00%	101.00%	92.50%	95.00%	105.00%	107.50%
6	US 5 Year Treasuries	40%	Excess Return	99.50%	100.50%	96.50%	97.50\$	102.50%	103.75%
7	European Treasuries	40%	Excess Return	99.00%	101.00%	92.50%	95.00%	105.00%	107.50%
8	Japanese Treasuries	40%	Excess Return	99.00%	101.00%	92.50%	95.00%	105.00%	107.50%
9	US Real Estate	20%	Total Return	97.50%	102.50%	75.00%	82.50%	117.50%	125.00%
10	Gold	10%	Excess Return	97.50%	102.50%	75.00%	82.50%	117.50%	125.00%

⁴ Prior to and including Sep 17, 1999, Index Component 4, US Technology Stocks, were Total Return



3. INDEX CALCULATION

3.1. INDEX FORMULA

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

On the VOLATILITY CONTROLLED INDEX START DATE:

$$Index_{VCISD} = 100$$

On each CALCULATION DAY t following the VOLATILITY CONTROLLED INDEX START DATE:

$$Index_t = Index_{t-1} * \left(1 + Perf_{t-1,t} - CalcFee \times \frac{D_{t-1,t}}{365} \right)$$

Where:

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

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

Perf_{t-1,t}: The Index Performance from CALCULATION DAY t-1 to CALCULATION DAY t;

CalcFee: The Index Fee percent of 0.5% per annum, deducted daily.

D_{t-1,t}: The number of calendar days between CALCULATION DAY t (including) and CALCULATION DAY t-1 (excluding);

VCISD: The VOLATILITY CONTROLLED INDEX START DATE.

3.2. INDEX PERFORMANCE

The Index Performance from CALCULATION DAY t-1 immediately preceding Index CALCULATION DAY t to Index CALCULATION DAY t is calculated according to the following formula:

$$Perf_{t-1,t} = Expo_{t-1} \times \left(\frac{BaseIndex_t}{BaseIndex_{t-1}} - 1 \right)$$

Where:

Perf_{t-1,t}: The Index Performance from CALCULATION DAY t-1 to CALCULATION DAY t.



$BaseIndex_t$: The level of the BASE INDEX as of CALCULATION DAY t

$BaseIndex_{t-1}$: The level of the BASE INDEX as of CALCULATION DAY $t-1$

$Expo_{t-1}$: The Exposure - percentage weight of the volatility Controlled Index allocated to the Base Index of CALCULATION DAY $t-1$.

3.3. EXPOSURE

The Number of Index Units as of CALCULATION DAY t is calculated according to the following formula:

On any CALCULATION DAY t on or after the VCISD:

$$Expo_t = \min\left(125\%, \frac{\sigma_{VC}}{\max(\sigma_{t,1}, \sigma_{t,2})}\right)$$

Where:

σ_{VC} : The volatility control level is a percentage number equal to 5% (0.05).

$\sigma_{t,1}$: The realized volatility of the Base Index over the period of 63 Calculation Days prior to Calculation Day t -Lag, as calculated in accordance with the following formula:

$$\sigma_{t,1} = \sqrt{\frac{252}{62} \times \sum_{k=0}^{62} \ln\left(\frac{BaseIndex_{t-k-Lag}}{BaseIndex_{t-k-Lag-1}}\right)^2}$$

$\sigma_{t,2}$: The realized volatility of the Base Index over the period of 21 Calculation Days prior to Calculation Day t -Lag, as calculated in accordance with the following formula:

$$\sigma_{t,2} = \sqrt{\frac{252}{20} \times \sum_{k=0}^{20} \ln\left(\frac{BaseIndex_{t-k-Lag}}{BaseIndex_{t-k-Lag-1}}\right)^2}$$

Lag: Two CALCULATION DAYS.

$Expo_t$: The Exposure - percentage weight of the volatility Controlled Index allocated to the Base Index of CALCULATION DAY t .

4. BASE INDEX CALCULATION

4.1. BASE INDEX FORMULA

The level of the Base INDEX as of CALCULATION DAY t is calculated according to the following formula:



On the INDEX START DATE:

$$BaseIndex_{ISD} = 100$$

On each CALCULATION DAY t following the INDEX START DATE:

$$BaseIndex_t = BaseIndex_{t-1} \times (1 + BasePerf_{t-1,t})$$

Where:

$BaseIndex_t$: The level of the Base INDEX as of CALCULATION DAY t

$BaseIndex_{t-1}$: The level of the Base INDEX as of CALCULATION DAY t-1

$BasePerf_{t-1,t}$: The Base Index Performance from CALCULATION DAY t-1 to CALCULATION DAY t.

4.2. BASE INDEX PERFORMANCE

The Base Index Performance from CALCULATION DAY t-1 immediately preceding Index CALCULATION DAY t to Index CALCULATION DAY t is calculated according to the following formula:

$$BasePerf_{t-1,t} = \sum_{i=1}^n W_{i,t-1} \times \left[\frac{FX_{i,t}}{FX_{i,t-1}} \times \left(\frac{AIC_{i,t}}{AIC_{i,t-1}} - 1 \right) \right]$$

Where:

$BasePerf_{t-1,t}$: The Base Index Performance from CALCULATION DAY t-1 to CALCULATION DAY t

$W_{i,t-1}$: The Weight of Index Component i in the Base Index as of CALCULATION DAY t-1.

$AIC_{i,t}$: The Adjusted Index Component Value of Index Component i as of CALCULATION DAY t.

$AIC_{i,t-1}$: The Adjusted Index Component Value of Index Component i as of CALCULATION DAY t-1.

$FX_{i,t}$: The Index Currency/CCY; FX RATE of Index Component i calculated as of CALCULATION DAY t,

$FX_{i,t-1}$: The Index Currency/CCY; FX RATE of Index Component i calculated as of CALCULATION DAY t-1,

n : The Number of Index Components in the Index Composition.

4.3. ADJUSTED INDEX COMPONENT VALUE

The Adjusted Index Component Value of Index Component i is calculated according to the following formulae on any CALCULATION DAY t:

$$AIC_{i,t} = AIC_{i,t-1} \times \left[\frac{IC_{i,t}}{IC_{i,t-1}} + 1_{ReturnType_i=TotalReturn} \times \left(1 - \frac{FC_t}{FC_{t-1}} \right) \right]$$



Where:

$AIC_{i,t}$: The Adjusted Index Component Value of Index Component i as of CALCULATION DAY t ;

$AIC_{i,t-1}$: The Adjusted Index Component Value of Index Component i as of CALCULATION DAY $t-1$;

$t - 1$: The CALCULATION DAY immediately preceding CALCULATION DAY t ;

$AIC_{i,0}$: The Adjusted Index Component Value of Index Component i on the INITIAL CALCULATION DATE, being equal to 100;

$IC_{i,t}$: The Closing Price for Index Component i as of CALCULATION DAY t ;

$1_{ReturnType_i=TotalReturn}$: Equals 1 if Index Component i is specified as "Total Return" in section 2.2, and otherwise, 0;

FC_t : The Value of Funding Component as of CALCULATION DAY t ;

FC_{t-1} : The Value of Funding Component as of CALCULATION DAY $t-1$;

4.4. TOTAL RETURN INDEX COMPONENT VALUE

On any STOCK TRADING DAY, d , on which IYR is published, the closing price of IYR shall represent the total return of a strategy, which is fully invested in IYR, so that any cash distribution from IYR is reinvested in IYR. The rate of change of the closing price from one STOCK TRADING DAY, d , to the next STOCK TRADING DAY, $d+1$, shall represent the total return for IYR from d to $d+1$, and will be adjusted to reflect any change in the levels of IYR and also to reflect any dividends as to which the ex-dividend date has occurred on such STOCK TRADING DAY or subsequent to the immediately preceding STOCK TRADING DAY, $d-1$. For dates before the Index Launch Date, the resulting adjusted price of such IYR shall be computed as follows:

$$IC_0 = 100$$

$$IC_d = IC_{d-1} \times \frac{Price_d + Dividend_d}{Price_{d-1}} \times Factor_d$$

Afterwards, the Index Component Values will be the Total Return values as calculated and maintained by the Solactive in accordance with the "Equity Index Methodology" as published Solactive, as amended from time to time, at <https://www.solactive.com/documents/equity-index-methodology/>, adjusting for any dividend payments and/or corporate events with respect to the ETF listed in section 2.1.

Where:

IC_d : The Index Component Value for Index Component 9 , as of STOCK TRADING DAY d ;

IC_{d-1} : The Index Component Value for Index Component 9 , as of STOCK TRADING DAY $d-1$;



Price_d: The Closing Price of IYR on the Exchange on STOCK TRADING DAY d. For avoidance of doubt, the closing price will reflect any other corporate actions that may have occurred after the previous STOCK TRADING DAY, d-1 until (and including) the STOCK TRADING DAY d;

Price_{d-1}: The Closing Price of IYR on the Exchange on STOCK TRADING DAY d-1. For avoidance of doubt, the closing price will reflect any other corporate actions that may have occurred after the previous STOCK TRADING DAY, d-2 until (and including) the STOCK TRADING DAY d-1;

Dividend_d: The sum of all cash dividends with ex-date following the previous STOCK TRADING DAY, d-1 and falling on or before the current STOCK TRADING DAY, d. For avoidance of doubt, this closing price will reflect any other corporate actions that may have occurred after the previous STOCK TRADING DAY, d-1 until (and including) the current STOCK TRADING DAY d;

Factor_d: Shall be 1 on all STOCK TRADING DAY, d, on which no corporate actions have taken place (e.g. no splits, reverse splits or stock dividends). On any other STOCK TRADING DAY, the **Factor_d** shall be a number, which represents the stock split / reverse split / stock dividend as applicable to preserve the economics. For example, if IYR splits 2-for-1 on a given day, for IYR the **Factor_d** shall be 2;

4.5. FUNDING COMPONENT CALCULATION

The value of the Funding Component in respect of any FUNDING CALCULATION DAY f is calculated according to the following formula:

$$FC_f = FC_{f-1} \times \left[1 + FR_{f-1} \times \frac{D_{f-1,f}}{360} \right]$$

Where:

FC_t: The Value of Funding Component as of FUNDING CALCULATION DAY f;

FC_{t-1}: The Value of Funding Component as FUNDING CALCULATION DAY f-1;

f – 1: The FUNDING CALCULATION DAY immediately preceding FUNDING CALCULATION DAY f;

FC₀: The Value of Funding Component on the Index START DATE, being equal to 100;

FR_{f-1}: The Funding Rate on FUNDING CALCULATION DAY f-1;

D_{f-1,f}: The number of calendar days from but excluding FUNDING CALCULATION DAY f-1 to and including FUNDING CALCULATION DAY f.

4.5.1. FUNDING RATE

The value of the Funding Rate in respect of any FUNDING CALCULATION DAY f is determined according to the following:

On any FUNDING CALCULATION DAY before FUNDING RATE SWITCH DATE 1:



$$FR_f = LIBOR_f$$

On any FUNDING CALCULATION DAY on or after FUNDING RATE SWITCH DATE 1 and before FUNDING RATE SWITCH DATE 2:

$$FR_f = SOFR_f + Spread_1 + \frac{Spread_2 - Spread_1}{D_{SwitchDay_1, SwitchDay_2}} \times D_{SwitchDay_1, f}$$

On any FUNDING CALCULATION DAY on or after FUNDING RATE SWITCH DATE 2:

$$FR_f = SOFR_f + Spread_2$$

Where:

LIBOR_f: The value for three-month deposits rate in USD as displayed on Reuters Page LIBOR01, as of FUNDING CALCULATION DAY f;

SOFR_f: The rate for the US SOFR Secured Overnight Financing Rate administered by the Federal Reserve Bank of New York (or any successor administrator, as of FUNDING CALCULATION DAY f);

Spread₁: Funding rate spread, being equal to 0.1%;

Spread₂: Funding rate spread, being equal to 0.26161%;

SwitchDay₁: The FUNDING RATE SWITCH DATE 1, being January 3rd, 2022;

SwitchDay₂: The FUNDING RATE SWITCH DATE 2, being July 3rd, 2023;

D_{SwitchDay₁, SwitchDay₂}: The number of calendar days from but excluding the first Funding Rate switch date *SwitchDay₁* to and including the second Funding Rate switch date *SwitchDay₂*;

D_{SwitchDay₁, f}: The number of calendar days from but excluding the first Funding Rate switch date *SwitchDay₁* to and including FUNDING CALCULATION DAY f.



5. REBALANCING METHODOLOGY

5.1. INDEX REBALANCING

Each Index is a weighted basket of the INDEX COMPONENTS. The allocation of weights to such INDEX COMPONENTS is constrained by investment restrictions determined by long-term “mean-reversion” signals, as described in section 5.3.

Subject to these “mean-reversion” investment restrictions, the weights of each INDEX COMPONENTS restrictions within the Base Index are calculated on a daily basis using short-term “trend-following” signals, as described in sections 5.4 and 5.5.

The Volatility Controlled Index refers to the volatility control level σ_{VC} and is rebalanced on a daily basis with the objective of keeping the volatility near that target threshold of σ_{VC} (“Volatility controlled σ_{VC} Index”). The calculation methodology for determining the level of the volatility is described in section 3.3.

5.2. MOVING AVERAGE CALCUALTION

The N Index CALCULATION DAY moving-average of Index Component I is calculated according to the following formula:

$$MA_{i,t}^N = \sum_{i=0}^{N-1} \frac{AIC_{i,t-j-Lag}}{N}$$

Where:

$MA_{i,t}^N$: The N-Index Calculation Day moving-average of Index Component i on CALCULATION DAY t;

$AIC_{i,t-j-Lag}$: The Adjusted Index Component Value of Index Component i on CALCULATION DAY t-j-Lag;

$t - j - Lag$: The CALCULATION DAY falling j+Lag Index Calculation Days before CALCULATION DAY t;

Lag : Two CALCULATION DAYS;

N : The Number of Index Calculation Days over which the moving average is being calculated (being either 42, 126 or 756).

5.3. LONG-TERM MEAN-REVERSION SIGNALS

5.3.1. Long-Term Mean-Reversion Ratio

With respect to any CALCULATION DAY t on or after CALCULATION DAY ISD, the long-term mean reversion ratio of Index Component i is calculated according to the following formula:



$$MRRatio_{i,t} = \frac{MA_{i,t}^{126}}{MA_{i,t}^{756}}$$

Where:

$MRRatio_{i,t}$: The long-term mean-reversion ratio of Index Component i on CALCULATION DAY t;

$MA_{i,t}^{126}$: The 126-Index Calculation Day moving-average of Index Component i on CALCULATION DAY t;

$MA_{i,t}^{756}$: The 756-Index Calculation Day moving-average of Index Component i on CALCULATION DAY t;

5.3.2. Mean-Reversion Cap

With respect to any CALCULATION DAY t on or after CALCULATION DAY ISD, the mean-reversion cap of Index Component i is calculated according to the following formula:

- If $MRRatio_{i,t} > Overbought\ Trigger\ 2_i$, then $MRCap_{i,t} = 50\%$;
- Else if $MRRatio_{i,t} > Overbought\ Trigger\ 1_i$, then $MRCap_{i,t} = 75\%$;
- Otherwise $MRCap_{i,t} = 100\%$;

Where:

$MRCap_{i,t}$: The mean-reversion cap of Index Component i on CALCULATION DAY t;

$Overbought\ Trigger\ 1_i$: The Overbought Trigger 1 for Index Component i, as specified in section 2.2;

$Overbought\ Trigger\ 2_i$: The Overbought Trigger 2 for Index Component i, as specified in section 2.2.

5.3.3. Mean-Reversion Floor

With respect to any CALCULATION DAY t on or after CALCULATION DAY ISD, the mean-reversion floor of Index Component i is calculated according to the following formula:

- If $MRRatio_{i,t} < Oversold\ Trigger\ 2_i$, then $MRFloor_{i,t} = 50\%$;
- Else if $MRRatio_{i,t} < Oversold\ Trigger\ 1_i$, then $MRFloor_{i,t} = 25\%$;
- Otherwise $MRFloor_{i,t} = 0\%$;

Where:

$MRFloor_{i,t}$: The mean-reversion floor of Index Component i on CALCULATION DAY t;

$Oversold\ Trigger\ 1_i$: The Oversold Trigger 1 for Index Component i, as specified in section 2.2;

$Oversold\ Trigger\ 2_i$: The Oversold Trigger 2 for Index Component i, as specified in section 2.2.



5.4. SHORT-TERM TREND-FOLLOWING SIGNALS

5.4.1. Short-Term Trend-Following Ratio

With respect to any CALCULATION DAY t on or after CALCULATION DAY ISD, the short-term trend-following ratio of Index Component i is calculated according to the following formula:

$$TFRatio_{i,t} = \frac{MA_{i,t}^{42}}{MA_{i,t}^{126}}$$

Where:

$TFRatio_{i,t}$: The short-term trend-following ratio of Index Component i on CALCULATION DAY t ;

$MA_{i,t}^{42}$: The 42-Index Calculation Day moving-average of Index Component i on CALCULATION DAY t ;

$MA_{i,t}^{126}$: The 126-Index Calculation Day moving-average of Index Component i on CALCULATION DAY t ;

5.4.2. Short-Term Trend-Following Signal

With respect to any CALCULATION DAY t on or after CALCULATION DAY ISD, the short-term trend-following signal of Index Component i is calculated according to the following formula:

$$TFSignal_{i,t} = \min \left[100\%; \max \left(MRFloor_{i,t}; \frac{TFRatio_{i,t} - STrigger_i}{LTrigger_i - STrigger_i} \right) \right]$$

Where:

$TFSignal_{i,t}$: The short-term trend-following signal of Index Component i on CALCULATION DAY t ;

$STrigger_i$: The Short Trigger for Index Component i , as specified in section 2.2;

$LTrigger_i$: The Long Trigger for Index Component i , as specified in section 2.2.

5.5. WEIGHTS PROCEDURE FOR THE INDEX

The index Component weights are calculated with respect to each CALCULATION DAY on an end-of-day basis using the long-term mean-reversion and short-term trend-following signals.

The index weights are calculated as follows:

5.5.1. Calculation of the Weights

With respect to any CALCULATION DAY t on or after CALCULATION DAY ISD, the Weight of Index Component i is calculated according to the following formula:



$$W_{i,t} = Cap_i \times \min[MRCap_{i,t}; \max(MRFloor_{i,t}; TFSignal_{i,t})]$$

Where:

$W_{i,t}$: The Weight of Index Component i on CALCULATION DAY t;

Cap_i : The Cap for Index Component i, as specified in section 2.2.

5.6. ACCURACY

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

5.7. 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/>.

5.8. MARKET DISRUPTION

In periods of market stress, where an INDEX DISRUPTION EVENT has occurred or is existing and subsisting with respect to any CALCULATION DAY (a “DISRUPTED DAY”), SOLACTIVE may with respect to such DISRUPTED DAY:

- Suspend the calculation and publication of the INDEX; and/or
- Calculate the index level on the basis of estimated or adjusted data and publish an estimated level of the INDEX; and/or
- Take any action including but not limited to designation of alternative price sources, reconstitution of the INDEX or a temporary change of Index Weights.

Where Solactive uses estimated or adjusted data pursuant to this section, it shall estimate or adjust such data with the primary intention of maintaining, so far as commercially reasonable, consistency of the exposure of the index to the strategy. Any estimate of the value of an INDEX COMPONENT with respect to a DISRUPTED DAY shall be made by Solactive using the methodology and calculations for determining the level of such INDEX COMPONENT last-in-effect prior to the occurrence of the DISRUPTED DAY.



5.8.1. GENERAL DISRUPTION EVENTS

In the determination of the Index Sponsor, the following events are each a "General Disruption Event":

- a) a closure of the money markets denominated in a relevant currency as determined by the Index Sponsor other than for ordinary public holidays, or a restriction or suspension in trading in these markets that would materially impact the determination arising in the construction or calculation of the Index and an Index Value;
- b) the failure, suspension or postponement of any calculation within the Index Strategy with respect to any Index Calculation Day, any event resulting in a breakdown in any means of communication or a procedure normally used to enable the determination of an Index Value, any other event, in the determination of the Index Sponsor preventing the prompt or accurate determination of an Index Value, or the Index Sponsor concludes that as a consequence of any such event that the last reported Index Value should not be relied upon; and
- c) the occurrence, with respect to any security, option, futures, derivative or foreign exchange contract or other instrument referenced in the calculation of the Index or any Index Component of (i) any suspension of or limitation imposed on trading by any relevant exchange or other trading facility, (ii) the closure of any relevant exchange or other trading facility before its scheduled closing time, or (iii) any other event that disrupts or impairs, as determined by the Index Sponsor, the ability of market participants in general to effect transactions in, or obtain market values for, the relevant contract.
- d) the failure of any price source to publish, announce, display, report or disseminate any relevant price, value, level, rate or other data necessary for the determination of the Index Value, the level published on any price source in relation to any price, value, level, rate or other data necessary to determine any Index Value is significantly different to the level of such data prevailing in the market, or a material change by the price source in the content, composition, constitution of, or in the formula for or method of calculating (a "Material Change") any price, value, level, rate or other data necessary to determine any Index Value (including where any such Material Change is due to an amendment or other modification to the rules and/or regulations of the price source).



6. MISCELLANEOUS

6.1. 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.

6.2. 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 "Announcement", which is available at <https://www.solactive.com/news/announcements/>. The date of the last amendment of this INDEX is contained in this GUIDELINE.

6.3. 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.



6.4. 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 4.2 “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/>.

6.5. 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/>.



7. DEFINITIONS

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

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

“**CALCULATION DAY**” is any day:

- (i) on which commercial banks and foreign exchange markets settle payments are open for general business in London and New York City;
- (ii) on which each of the Chicago Mercantile Exchange, Eurex, the New York Stock Exchange (NYSE), the Osaka Securities Exchange and the Tokyo Stock Exchange are scheduled to be open for trading; and
- (iii) which is a WMR Business Day

“**INDEX START DATE**” 18 June 2002

“**INITIAL CALCULATION DAY**” March 4, 1999

“**CLOSE OF BUSINESS**” is the calculation time of the closing level of the INDEX as outlined in Section 1.4.

“**DISRUPTED DAY**” in respect to any CALCULATION DAY, where INDEX DISRUPTION EVENT has occurred or existing and subsisting.

“**FUNDING CALCULATION DAY**” Any day on which the Funding Rate is published by the relevant data provider or data source;

“**FX RATE**” : 4pm London time WM Fixing as quoted by Refinitiv.

“**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 COMPONENT**” is each index components as described in 2.1.

“**INDEX CURRENCY**” is the currency specified in the column “Currency” in the table in Section 2.1.

“**INDEX DISRUPTION EVENT**” means a General Disruption Event, or any disruption with respect to an Index Component, as specified in its Index Component Rules.

“**LAUNCH DATE**” 20 November 2017.

“**OVERSIGHT COMMITTEE**” shall have the meaning as defined in Section 4.5.

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

“**START DATE**” 18 June 2002. “ISD” is the Index Calculation Day corresponding to the start date of the Base Index;



“STOCK TRADING DAY” Any day on which the primary exchange for Index Component 9 is scheduled to be open for trading with respect to Index Component 9 during its regular trading session.

“TRANSITION DATE” 24 April 2024.

“VOLATILITY CONTROL INDEX START DATE” 24 September 2002. “VCISD” is the CALCULATION DAY corresponding to the start date of Volatility Controlled Index.

“WMR BUSINESS DAY” any day on which fixings are published at or around 4 P.M. London time by the WM Company / Reuters Currency Services;

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