Guideline relating to

Solactive US Treasury Inflation-Linked Bond Index
Solactive US Treasury Inflation-Linked Bond PR Index
Solactive US Treasury Inflation-Linked Bond in CAD TR Index
Solactive US Treasury Inflation-Linked Bond Hedged to CAD TR Index

Version 1.1 dated January 2, 2018

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Introduction

This document contains the underlying principles and regulations regarding the structure and operation of the Solactive US Treasury Inflation-Linked Bond Indices. Solactive AG shall make every effort to implement the relevant regulations. Solactive AG does not offer any explicit or tacit guarantee or assurance, neither pertaining to the results from the use of the index nor the index value at any given point in time nor in any other respect. The Solactive US Treasury Inflation-Linked Bond Indices are the sole property of of Solactive AG. Solactive AG 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 index. The calculation and publication of the index by Solactive AG is not 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 this index. The index provider does not accept any payments from potential index components for inclusion in the index.

Introduction

This document is to be used as a guideline with regard to the composition, calculation and management of the Solactive US Treasury Inflation-Linked Bond TR Index, Solactive US Treasury Inflation-Linked Bond PR Index, Solactive US Treasury Inflation-Linked Bond in CAD TR Index and the Solactive US Treasury Inflation-Linked Bond Hedged to CAD TR Index. Any changes made to the guideline are initiated by the Committee specified in section 1.6. The Solactive US Treasury Inflation-Linked Bond Indices are the sole property of Solactive AG. The Solactive US Treasury Inflation-Linked Bond Indices are calculated and published by Solactive AG. The name "Solactive" is copyrighted.

1 Index specifications

The Solactive US Treasury Inflation-Linked Bond Indices are rules-based, market value weighted index engineered to measure the performance of Treasury Inflation-Protected Securities (TIPS) issued by the United States. The indices will be distributed as a Total Return Index (i.e. coupon payments will be reinvested in the index) and a Price Return Index (i.e. coupon payments will not be considered). The Solactive US Treasury Inflation-Linked Bond in CAD TR Index is a version of the Solactive US Treasury Inflation-Linked Bond Index converted to CAD. The Solactive US Treasury Inflation-Linked Bond Hedged to CAD TR Index is a currency hedged version of the Solactive US Treasury Inflation-Linked Bond Index.

1.1 Name and ISIN

The Solactive US Treasury Inflation-Linked Bond Index is distributed under the following symbols:

Name	ISIN	Reuters RIC	Bloomberg Ticker
Solactive US Treasury Inflation-Linked Bond Index	DE000SLA4B08	.SOLTI	n/a
Solactive US Treasury Inflation-Linked Bond PR Index	DE000SLA44R6	.SOLTIPR	n/a
Solactive US Treasury Inflation-Linked Bond in CAD TR Index	DE000SLA4577	.SOLTICAD	n/a
Solactive US Treasury Inflation-Linked Bond Hedged to CAD TR Index	DE000SLA4585	.SOLTICH	SOLTICH

1.2 Initial value

The Solactive US Treasury Inflation-Linked Bond Index will be calculated every Business Day starting on the 15th of September 2017. Before this date the index values are backfilled until 29th of December 2006, with the index value based on 100 as at the close of trading on 29th of December 2006.

The Solactive US Treasury Inflation-Linked Bond PR Index, Solactive US Treasury Inflation-Linked Bond in CAD TR Index and the Solactive US Treasury Inflation-Linked Bond Hedged to CAD TR Index will be calculated every Business Day starting on the 2nd of January 2018. Before this date the index values are backfilled until 29th of December 2006, with the index value based on 100 as at the close of trading on 29th of December 2017.

1.3 Distribution

The Solactive US Treasury Inflation-Linked Bond Indices are published via the price marketing services of Boerse Stuttgart AG and is distributed to all affiliated vendors.

1.4 Prices and calculation frequency

The Solactive US Treasury Inflation-Linked Bond Indices are calculated based on the Evaluated Bid Price (see 4.2 Further Definitions) of the respective Index Components. The indices are calculated and distributed once every Business Day. Bond and index analytical values are calculated each Business Days using the Last Evaluated Price.

If there is an interruption in availability of Evaluated Bid Prices the indices will be based on the Last Available Evaluated Bid Price. In the event that other data required for index calculation purposes is not available or that there are troubles regarding the price marketing of Solactive AG or Stuttgart Stock exchange the index cannot be distributed.

1.5 Weighting

The index components are weighted according to their respective market values in proportion to the aggregated market value of all index components in the index. For the Total Return Index the market value is calculated as the dirty price (adjusted for inflation) multiplied by the respective deducted amount outstanding of the bond. The deducted amount outstanding is calculated as the current amount outstanding minus the amount that is held by the Federal SOMA Account. For the Price Return Index the clean price (adjusted for inflation) is used.

1.6 Decision-making bodies

A Committee composed of staff from Solactive AG is responsible for decisions regarding the composition of the Solactive US Treasury Inflation-Linked Bond Indices, as well as any amendments to the rules (hereinafter referred to as the "**Committee**" or the "**Index Committee**"). The Committee will also determine the future composition of the Solactive US Treasury Inflation-Linked Bond Index if any Extraordinary Event (see chapter 2.3) occurs, as well as the implementation of any necessary adjustments.

Members of the Committee can recommend at any time changes to the composition of the Index or to the guideline and submit them to the Committee for approval. Any change of the guideline will be announced on the web page http://www.solactive.com.

1.7 Publication

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

1.8 Historical data

Historical data will be maintained from 29th of December 2006.

1.9 Licencing

Licences to use the index as the underlying value for derivative instruments are issued to stock exchanges, banks, financial services providers and investment houses by Solactive AG.

2 Composition of the Index

2.1 Selection of the Index Components

At the launch of the indices, all financial instruments which meet the requirements of the Selection Pool are eligible for inclusion in the index. Instruments issued prior to the Selection Day and which meet the criteria of the Selection Pool as defined under 4.1 will be added on the Adjustment Day to the Selection Pool. Additionally, on the Selection Day, the Index Committee will evaluate whether all current Index Components still meet the requirements of the Selection Pool. Any Index Components that do not pass this screen will be removed from the Index on the next Adjustment day.

Extraordinary adjustments are possible as described under 2.3.

2.2 Ordinary adjustment

The composition of the indices is ordinarily reviewed on the Selection Day. Any change to the indices will be announced on the Announcement Day and implemented after COB on the Adjustment Day.

2.3 Extraordinary adjustment

The Index Committee will decide about the future composition and the implementation of any necessary adjustments of the Solactive US Treasury Inflation-Linked Bond Indices if an Extraordinary Event (early redemption, credit event etc.) regarding one or more index constituents occurs. See details under 3.3 Adjustments

The Index Committee will decide on the future composition of the Solactive US Treasury Inflation-Linked Bond Indices as well as the Business Day which marks the starting of the new adjusted index composition.

3 Calculation of the Index

3.1.1 Index formula

The total return version is calculated as followed:

$$\mathrm{Re}turn_{i,t} = \frac{(\mathrm{Pr}ice_{i,t} + AI_{i,t} + CPAdj_{i,t} + PaidCash_{i,t}) \cdot IR_{i,t}}{(\mathrm{Pr}ice_{i,t-1} + AI_{i,t-1} + CPAdj_{i,t-1}) \cdot IR_{i,t-1}} \cdot \frac{FX_{i,t}}{FX_{i,t-1}}$$

$$Weight_{i,t-1} = \frac{(\mathrm{Pr}ice_{i,t-1} + AI_{i,t-1} + CPAdj_{i,t-1}) \cdot IR_{i,t-1} \cdot Amount_{i,sd} \cdot CapFactor_{i,sd} \cdot FX_{i,t-1}}{\sum (\mathrm{Pr}ice_{i,t-1} + AI_{i,t-1} + CPAdj_{i,t-1}) \cdot IR_{i,t-1} \cdot Amount_{i,sd} \cdot CapFactor_{i,sd} \cdot FX_{i,t-1}}$$

$$Index_t = Index_{t-1} \cdot (1 + \sum (\mathrm{Re}turn_{i,t} \cdot Weight_{i,t-1})$$

The price return index is calculated as followed:

$$\mathrm{Re}turn_{i,t} = \frac{\mathrm{Pr}ice_{i,t} \cdot IR_{i,t}}{\mathrm{Pr}ice_{i,t-1} \cdot IR_{i,t-1}} \cdot \frac{FX_{i,t}}{FX_{i,t-1}}$$

$$Weight_{i,t-1} = \frac{\mathrm{Pr}ice_{i,t-1} \cdot IR_{i,t-1} \cdot Amount_{i,sd} \cdot CapFactor_{i,sd} \cdot FX_{i,t-1}}{\sum \mathrm{Pr}ice_{i,t-1} \cdot IR_{i,t-1} \cdot Amount_{i,sd} \cdot CapFactor_{i,sd} \cdot FX_{i,t-1}}$$

$$Index_t = Index_{t-1} \cdot (1 + \sum (\mathrm{Re}turn_{i,t} \cdot Weight_{i,t-1})$$

Whereas:

$Index_t$	=	Value of the index on trading day t
$Index_{t-1}$	=	Value of the index on trading day t-1
$\mathrm{Price}_{i,t}$	=	Price of the bond i on trading day t
$\mathrm{Price}_{i,t-1}$	=	Price of the bond i on trading day t-1
$AI_{i,t}$	=	Accrued Interest of the bond i on trading day t
$AI_{i,t-1}$	=	Accrued Interest of the bond i on trading day t-1
$Weight_{t,i}$	=	Weighting of the bond i on trading day t
$Amount_{i,sd}$	=	Amount Outstanding of bond i on the last Selection Day sd
$PaidCash_{i,t}$	=	a) Value of the coupon payment for bond i on trading day t b) If a bond i will be removed from the index, the resulting payment of the bond will be included in the paid cash component
$CapFactor_{i,sd}$	=	Parameter used to scale the weighting of bond i to fulfill weighting requirements on the last Selection Day sd

$CPAdj_{i,t}$ = Variable Coupon Adjustment Factor of bond i on trading day t if the bond trades ex-dividend. Equal to 0 if bond i is not in an ex-dividend period on trading day t or bond i was included in the index during the ex-dividend period. Equal to the upcoming coupon if bond i is in an ex-dividend period on trading day t and bond i was included in the index before the ex-dividend period. The ex-dividend period is the period before the coupon payment date where the buyer of a bond is not entitled to the upcoming coupon. The ex-dividend date is the first date at which the bond does not include an entitlement to the next coupon payment when purchased. The Accrued Interest of bond i is negative during the ex-dividend period and 0 on the coupon payment date.

$FX_{i,t}$ = currency conversion for bond i on day t

$IR_{i,t}$ = Inflation Ratio of bond i on day t

The currency hedged version of the price return index is calculated as followed:

$$I_t = I_{RT-1} \cdot \left(1 + \left(\frac{UI_t}{UI_{RT-1}} - 1\right) + HIM_t\right)$$

with

I_t = Index value on Business Day t
I_RT-1 = Index value on the last Rebalancing Date immediately preceding t
UI_t = Underlying Index value on Business Day t
UI_RT-1 = Underlying Index value on the last Rebalancing Date immediately preceding t
HIM_t = Hedge Impact on Business Day t

The Hedge Impact is calculated using the following formula:

$$HIM_t = AF_{RT-1} \cdot \sum_{i=1}^{n} W_{i,ST-1} \cdot S^m_{i,ST-1} \cdot \left(\frac{1}{F^m_{i,RT-1}} - \frac{1}{IF^m_{i,t}}\right)$$

with

AF_RT-1 = Adjustment Factor on the last Rebalancing Date immediately preceding t which is calculated as follows:

$$AF_{RT-1} = \frac{I_{ST-1}}{I_{RT-1}}$$

with

I_ST-1 = Index value on the last Reference Day immediately preceding or equal to RT-1
I_RT-1 = Index value on the last Rebalancing Day immediately preceding t

n = number of different currencies in the Underlying Index (without considering the currency in which the index is calculated),
W_i,ST-1 = Weight of currency i on the last Reference Date immediately preceding or equal to RT-1
S^m_i,t = Mid Spot of currency i on day t
F^m_i,RT-1 = Mid Forward of currency i on the last Rebalancing Date immediately preceding t
IF^m_i,t = Interpolated Forward on day t which is calculated as follows:

$$IF^m_{i,t} = S^m_{i,t} + \left(F^m_{i,t} - S^m_{i,t}\right) \cdot \frac{D-d}{D}$$

with
D = number of calendar days between RT-1 and RT

d = number of calendar days between RT-1 and t

3.2 Accuracy

The value of the index will be rounded to two decimal places.

According to the terms of the bond, the Index Calculator will take the following conventions into account:
Act/Act
Act/360
Act/365
30/360
ISMA 30/360

The index does not take into account taxes and assumes gross coupon payments.

Accrued Interest is calculated with settlement convention t+0.

3.3 Adjustments

Indices need to be adjusted for systematic changes in prices once these become effective. The Committee will decide from time to time if the Solactive US Treasury Inflation-Linked Bond Indices need to be adjusted.

The following corporate actions will result in changes or adjustments to an index as indicated below between Adjustment Days:

(a) Early Redemption or Full Call: The bond proceeds will be reinvested into the index on the effective date. For the avoidance of doubt a Tender must be mandatory, the pure offer to tender a bond will not lead to an adjustment of the index.*

(b) Flat Trading: A bond is flat trading if the bond issuer will not meet its coupon payment obligation which means that the buyer of a bond is not responsible for paying the interest that has accrued since the last payment. If a bond is defined to be "flat trading" between two Adjustment Days the respective accrued interests and coupons will be set to 0. The bond will not be removed until the next Adjustment Day.

(c) Defaulted Bonds: If the status of a bond changes to "In Default", the bond will remain as part of the index or portfolio at the last available evaluated price provided by the pricing source until the next regular index adjustment day.

(d) Exchange Offers:
1) Optional Exchange Offers: Optional Exchange Offers will not result in an adjustment of the index.*
2) Mandatory Exchanges Offers:
    a. In case more than 90% of the Amount Outstanding is exchanged the exchange will be considered in the index calculation by exchanging the relevant bonds, so that the new bond will receive the weight of the old exchanged bond.
    b. In case less than 90% of the Amount Outstanding is exchanged the exchange will not be considered to be an event that affects the relevant bond's position in the index.

(e) Fungible Bonds:
1) The parent bond and the sub-tranche are both index constituents: Both bonds are kept in the index until the next Adjustment Day. On the next Adjustment Day the new bond will be removed and the Amount Outstanding of the parent bond will be increased by the amount of the new bond issue.
2) The parent bond is an index constituent and the sub-tranche is not: On the next Adjustment Day the Amount Outstanding of the parent bond will be increased by the amount of the sub-tranche.
3) The parent bond is not an index constituent but the sub-tranche is: On the next Adjustment Day the sub-tranche leaves the index and the parent bond enters the index including the Amount Outstanding added from the sub-tranche (assuming that it meets the requirements of the Selection Pool).

(f) Debt issuances: Debt issuances of an existing bond will not be considered until the next Adjustment Day.

*For the avoidance of doubt, an optional tender or exchange offer may lead to an index adjustment after the end of the submission period. In case the tender or exchange has been successful for at least 90% of the amount outstanding the bond will be removed from the index/exchanged into the relevant bond.

4. Definitions

4.1 index-specific definitions

The **"Selection Pool"** comprises bonds that fulfill the following conditions:

(a) Sovereign debt issued by the US government
(b) Principal and interest must be inflation-linked
(c) Denominated in USD
(d) Deducted amount outstanding of at least 750 million USD. The deducted amount outstanding is calculated as the current par amount outstanding (not adjusted for inflation indexation) minus the amount that is held by the Federal Reserve SOMA account
(e) Time to maturity of at least 18 months for new issues entering the index. Remaining time to maturity of at least one year for bonds in the index.
(f) Fixed-rate nominal coupon
(g) Exclusion of nominal bonds, non-government inflation-linked bonds, STRIPS, Treasury bills, Private placements, floating-rate bonds
(h) For a bond to be included in the index, a price must be available from a recognized bond price provider as determined by the Index Committee

"**Underlying Index**" of the Solactive US Treasury Inflation-Linked Bond Hedged to CAD TR Index is the Solactive US Treasury Inflation-Linked Bond TR Index.

The "**Weight"** of each currency is determined at the Reference Date and is calculated as the sum of the weights of each Underlying Index component denominating in the same currency.

"Reference Date" is the last business day of each month and therefore equal to the Adjustment Day.

4.2 Further definitions

"Adjustment Day" is the last Business Day every month.

"Amount Outstanding" is the face value of the respective bond.

"Announcement Day" is the Business Day following the Selection Day.

A **"Business Day**" in relation to the index is any day other than a Saturday or Sunday and which is not a holiday according to SIFMA.

"Call" means that a bond with a callable feature will be redeemed before the actual maturity date of the bond. The callable feature allows the issuer of the bond to retain the privilege of redeeming the bond before the actual maturity date.

A **"Credit Event"** is the suspension of debt service, insolvency or failure to pay on time.

"Early Redemption" includes every event that leads to a redemption of a bond before the actual maturity date.

"Exchange Offer" means that the holder of a bond is invited to exchange the existing bond to another debt security.

In particular an **"Extraordinary Event"** is
- an early redemption of the bond
- a credit event

A bond is **"Flat Trading"** if the bond issuer will not meet its coupon payment obligation which means that the buyer of a bond is not responsible for paying the interest that has accrued since the last payment.

A **"Fungible Bond"** is a new issue that has all the same specifications as an existing issue (bonds with the same parameters can be issued in different tranches). At a specific date the tranches will be combined into one bond. After this date the parent tranche will include the Amount Outstanding of all new tranches.

A bond is "**In Default**" if the issuer is not able to fulfil its bond payment obligations anymore after the 30 days grace period.

"Index Components" are all bonds in the Selection Pool.

The **"Index Currency"** is:

Name	Index Currency
Solactive US Treasury Inflation-Linked Bond TR Index	USD
Solactive US Treasury Inflation-Linked Bond PR Index	USD
Solactive US Treasury Inflation-Linked Bond in CAD TR Index	CAD
Solactive US Treasury Inflation-Linked Bond Hedged to CAD TR Index	CAD

The **"Index Provider"** is Solactive AG or any other appropriately appointed successor in this function.

"Inflation-linked Bonds" are bonds whose principal and interest is indexed to inflation.

"Issuer" is the issuing entity of the respective bond.

"Last Evaluated Price" is (aside from the rules referred to in „Extraordinary Events") the last available Evaluated Bid Price from the Pricing Provider.

"Paid Cash" is either the value of the coupon payments between Adjustment Days or the resulting payment when a bond is removed from the index between Adjustment Days. Paid Cash is invested directly on the effective date into the index.

A **"Price Return Index"** measures the performance of the index components assuming that distributions are not reinvested in the index, i.e. the index does only reflect pure price movements.

"Pricing Provider" for this index is Standard & Poor's Securities Evaluations, Inc.

"Selection Day" is a Business Day 6 Business Days prior to the Rebalancing Day

"Tender Offer**"** means that a holder of a bond is invited to tender the bond for a specific price at a specific time before the actual maturity date.

A **"Total Return Index"** measures the performance of the index components by assuming that all distributions are reinvested into the index, i.e. the index does not only reflect pure price movements.

5 Appendix

5.1 Contact data

Information regarding the Solactive US Treasury Inflation-Linked Bond Index concept

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5.2 Calculation of the Index – change 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, 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. The index calculator is not obliged to provide information on any such modifications or changes. The Index calculator will make announcements regarding the amendment of the index guideline. 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.