

INDEX GUIDELINE

Solactive 10-Year U.S. Treasury Future 2 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 of the Solactive 10-Year U.S. Treasury Future 2 index (the “Index”). Any amendments to the rules made to the Guideline are approved by the Index Committee specified in Section 4.5. The Index is calculated, administrated and published by Solactive AG (“Solactive”) assuming the role as index administrator (the “Index Administrator”) under the Regulation (EU) 2016/1011 (the “Benchmark Regulation” or “BMR”). The name “Solactive” is trademarked.

The Guideline and the policies and guidelines referenced herein contain the underlying principles and rules regarding the structure and operation of the Index. 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 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 Index tracks the performance of the continuous rolling 10-Years U.S. Treasury Futures and rolls the exposure over five days from the Active Contract into the Next Active Contract.

1.2. IDENTIFIERS AND PUBLICATION

The Index is published under the following identifiers:

Name	ISIN	Currency	Type	RIC	BBG ticker
Solactive 10-Year U.S. Treasury Future 2 Index	DE000SLA7RQ8	USD	TR	.SOLUS10T2	SOLUS10Y Index

The Index is published 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. In the event that data cannot be provided to the price marketing services of Boerse Stuttgart GmbH the Index cannot be published.

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 the Start Date is 100 as of the 3rd January 2000. Historical values from the Live Date will be recorded [in accordance with Article 8 of the BMR].

1.4. PRICES AND CALCULATION FREQUENCY

The level of the Index is calculated on each Trading Day based on the trading prices on the respective Exchanges on which the Index Components are listed. The closing price of the Index is calculated on each Trading Day based on the settlement prices on the respective Exchanges on which the Index Components are listed. The most recent settlement prices of the 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.



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 Solactive.

1.6. DEFINITIONS WITH RESPECT TO SECTION 1

This section contains defined terms used in Section 1 and, if applicable, other Sections of the Guideline.

"Active Contract" means with respect to a Trading Day, The 10-Years U.S. Treasury Futures contract that is traded on such trading day, given in the roll schedule under Section 2.2.

"**Exchange**" means the Chicago Board of Trade (the "CBOT")

"Index Calculator" is Solactive or any other appropriately appointed successor in this function.

"Index Component" is any contract currently included in the Index.

"Index Currency" is the currency specified in the column "Currency" in the table in Section 1.2.

"Live Date" is 10th July 2019.

"Next Active Contract" means with respect to a Trading Day the subsequent contract that will be traded, given in the Roll Schedule under Section 2.2.

"Start Date" is the 3rd January, 2000 (Historical date when the index started, with a start date and live date, do not need a launch date).

"Settlement Price" is with respect to an Index Component and a Trading Day, the average price at which an Active Contract trades calculated at the close of each Trading Day by the Exchange.

"Trading Day" is with respect to the Index and an Index Component, a day on which the relevant Exchange is open for trading (or a day that would have been such a day if a market disruption had not occurred), excluding days on which trading may be ceased prior to the normal Exchange closing time. The Index Calculator is ultimately responsible as to whether a certain day is a Trading Day with regard to the Index or an Index Component, or in any other connection relating to this document.



2. REPLACEMENT OF ACTIVE CONTRACT

Index Components are selected according to the Rolling Period specified in Section 2.1 and in accordance with the Roll Schedule defined in Section 2.2.

2.1. REPLACEMENT PROCESS

The replacement of the Active Contract by the Next Active Contract will be implemented over a five-day Roll Period. The Roll Period starts on the 5th Trading Day preceding the First Notice Day of the Active Contract. The Contract Roll Weight of the Active Contract is then decreased by 20% after the Close of Business of each Trading Day of the Roll Period starting at 100% while the Contract Roll Weight of the Next Active Contract is increased by 20% after the Close of Business of each Trading Day of the Roll Period starting at 0%. After the end of the Roll Period (End Roll Date included) the Next Active Contract becomes the Active Contract. The roll schedule is listed in Section 2.2.

2.2. ROLL SCHEDULE

The Active Contract and the Next Active Contract are selected based on the current/next month as follows:

Active Contract:

Contract/Month	1	2	3	4	5	6	7	8	9	10	11	12
TY		H	H	M	M	M	U	U	U	Z	Z	Z H+

Next Active Contract:

Contract/Month	1	2	3	4	5	6	7	8	9	10	11	12
TY		M	M	U	U	U	Z	Z	Z	H+	H+	H+ M+

A "+" defines a contract of the following year.

The following naming convention of the contracts holds:



Identifier	Month
H	March
M	June
U	September
Z	December

2.3. WEIGHTING OF THE INDEX COMPONENTS

The Weighting of the futures in the index is done as described in Section 2.1.

2.4. DEFINITIONS WITH RESPECT TO SECTION 2

“Roll Start Date” is the 5th Trading Day preceding the First Notice Day.

“Roll End Date” is the Trading Day preceding (and excluding) the First Notice Day.

“Contract Roll Weight” means the Target weight determined in Section 2.1.

“Roll Period” means all the Trading Days between “Roll Start Date” (included) and “Roll End Date” (included) . defined in Section 2.1.



3. CALCULATION OF THE INDEX

3.1. INDEX FORMULA

The Index is calculated as a Total Return index and published in US Dollars.

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

$$IL(t) = IL(t-1) \times \left(\frac{I_t}{I_{t-1}} + LIBOR3M(t-1) * ACT(t, t-1)/360 \right)$$

The Excess Return Value on any given Trading Day t is calculated in accordance with the following formula:

$$I_t = I_{t-1} \cdot \left(\frac{CRW_{A,t} \cdot SP_{A,t}}{SP_{A,t-1}} + \frac{CRW_{NA,t} \cdot SP_{NA,t}}{SP_{NA,t-1}} \right)$$

where:

I_{t-1} is the Excess Return Value on the Trading Day immediately preceding Trading Day t with $I_{\text{Start Date}} = 100$

$CRW_{A,t}$ is the Contract Roll Weight of the Active Contract on Trading Day t

$CRW_{NA,t}$ is the Contract Roll Weight of the Next Active Contract on Trading Day t

$SP_{A,t}$ is the Settlement Price of the Active Contract on Trading Day t

$SP_{NA,t}$ is the Settlement Price of the Next Active Contract on Trading Day t

LIBOR3M (t): U.S. dollar cash account bearing interest at a rate equal to 3-month USD LIBOR on Trading Day t .

ACT(t, t-1): Number of Calendar Days from (and excluding) Trading Day "t-1" to (and including) Trading Day "t"



With:

Trading Day "t"	$CRW_{A,t}$	$CRW_{NA,t}$
"Roll Start Date" +0	80%	20%
"Roll Start Date" +1	60%	40%
"Roll Start Date" +2	40%	60%
"Roll Start Date" +3	20%	80%
"Roll Start Date" +4 ("Roll End Date")	100%	0%
t is not in the Roll Period	100%	0%

3.2. ACCURACY

The Index Level will be rounded to 2 decimal places.

3.3. RECALCULATION

Solactive makes the greatest possible efforts to accurately calculate and maintain its indices. However, errors in the index 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/>.

3.4. 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/>. 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.



4. MISCELLANEOUS

4.1. 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 in accordance with the Solactive's Discretion Policy, which is available on the Solactive website: <https://www.solactive.com/documents/>.

4.2. METHODOLOGY REVIEW

The methodology of the Index is subject to regular review. In case a need of a change to 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 [Methodology Policy](#), which is incorporated by reference and available on the Solactive website: <https://www.solactive.com/documents/>.

Such change in the Methodology will be announced on the Solactive webpage 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.

4.3. 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.



4.4. 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 an 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 Termination Policy, which is incorporated by reference and available on the Solactive website: <https://www.solactive.com/documents/>.

4.5. OVERSIGHT

An index committee composed of staff from Solactive and its subsidiaries (the “Index 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 Index Committee for prior approval and will be made in compliance with the “Solactive Methodology Policy”, which is available at <https://www.solactive.com/documents/>.

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