

INDEX GUIDELINE

Solactive Local Currency World Government Bond Index

Version 1.1

11 May 2020



TABLE OF CONTENTS

Introduction	3
1. Index Specifications	4
1.1. Scope of the Index	4
1.2. Identifiers and Publication	4
1.3. Initial Level of the Index	4
1.4. Prices and calculation frequency	4
1.5. Licensing.....	5
2. Index Selection	6
2.1. Selection of the Index Components	6
2.1.1 Eligible Countries	7
2.2. Weighting of the Index Components.....	8
3. Rebalance	8
3.1. Ordinary Rebalance	8
3.2. Extraordinary Rebalance	8
4. Calculation of the Index	9
4.1. Index formula	9
4.2. Accuracy	9
4.3. Adjustments.....	9
4.4. Corporate actions.....	10
4.5. Recalculation.....	11
4.6. Market Disruption.....	11
5. Miscellaneous	12
5.1. Discretion	12
5.2. Methodology Review.....	12
5.3. Changes in calculation method.....	12
5.4. Termination	12
5.5. Oversight	13
6. Definitions.....	14
Contact.....	15



INTRODUCTION

This document (the "GUIDELINE") is to be used as a guideline with regard to the composition, calculation and maintenance of the Solactive Local Currency World Government Bond Index (the "INDEX"). Any amendments to the rules made to the GUIDELINE are approved by the OVERSIGHT COMMITTEE specified in Section 5.5. 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 Solactive Local Currency World Government Bond Index Series is a global benchmark to measure the performance of worldwide bonds issued by central governments in their respective currency converted into USD.
- The series is designed to provide a broad coverage of the investible universe of developed and emerging market bonds according to the relevant Bond Market Classification Framework. All government-related bonds are excluded.
- Customized versions of these indices, with additional selection criteria as by example rating, market size liquidity or maturity as well as other weighted schema, capping rules or hedged versions are available on request.

1.2. IDENTIFIERS AND PUBLICATION

The INDEX is published under the following identifiers:

Name	ISIN	Currency	Type	RIC	BBG ticker
Solactive Local Currency World Government Bond Index	DE000SLA9SU4	USD	TR	.SOLLCWGB	n/a

*TR means that the INDEX is calculated as Total Return index as described in the Bond Index Methodology, which is available on the SOLACTIVE website: <https://www.solactive.com/documents/bond-index-methodology/>

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 January 29th, 2020 is 1000. Historical values from January 29th, 2020 will be recorded in accordance with Article 8 of the BMR. Levels of the INDEX published for a period prior to January 29th, 2020 have been back-tested until June 28th, 2013.

1.4. PRICES AND CALCULATION FREQUENCY

The INDEX is calculated and distributed once every BUSINESS DAY based on the LAST EVALUATED BID PRICES of the INDEX COMPONENTS. Bonds added in a rebalancing (see Section 3) are included the INDEX



at the LAST EVALUATED ASK PRICES on the relevant REBALANCE DAY (as specified in Section 3.3). Bonds which are excluded from the INDEX in a rebalance are reflected in the calculation of the level of the INDEX for the REBALANCE DAY at the LAST EVALUATED BID PRICES of on the relevant REBALANCE DAY. INDEX analytical values are calculated each BUSINESS DAY using the LAST EVALUATED BID PRICES based on FIXING TIME. Prices of INDEX COMPONENTS not listed in the INDEX CURRENCY are converted using 4 pm London Time WM Fixing quoted by Reuters.

Should there be no current 4 PM London WM Fixing available on Reuters the most recent 4 PM London WM Fixing on Reuters for the preceding Business 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.



2. INDEX SELECTION

On each SELECTION DAY, all bonds which meet the INDEX COMPONENT REQUIREMENTS are eligible for inclusion in the INDEX and will be added as INDEX COMPONENT on the REBALANCE DAY. Additionally, on each SELECTION DAY, it will be evaluated whether all current INDEX COMPONENTS still meet the INDEX COMPONENT REQUIREMENTS. Each INDEX COMPONENT that does not meet the INDEX COMPONENT REQUIREMENTS will be removed from the INDEX on the next REBALANCE DAY.

2.1. SELECTION OF THE INDEX COMPONENTS

The initial composition of each INDEX, as well as any selection for a rebalance (as specified in Section 3) is determined using the following rules:

- Bonds must be issued by a CENTRAL GOVERNMENT or the local CENTRAL BANK.
- Bonds must be issued in domestic currency of the issuing country.
- Coupons and principal denominated in the same currency.
- The country of the bonds issuer must be included in the Bond Market Classification Framework (<https://www.solactive.com/documents/bond-market-classification-framework/>) as Developed or Emerging market.
- Bonds must be issued prior to the REBALANCE DAY.
- The maturity of bonds must be at least 18 months for entering the INDEX and the remaining EFFECTIVE TIME TO MATURITY must be at least 1 year from the REBALANCE DAY.
- FIXED COUPON BONDS or ZERO-COUPON BONDS are eligible.
- TREASURY BILLS, FLOATING RATE NOTES, INFLATION-LINKED BONDS, SINKABLES, PERPETUALS, PUTABLES, CALLABLES, EXTENDABLE, PRINCIPAL ONLY STRIPS and INTEREST ONLY STRIPS are not eligible.
- Bonds must not be predominantly retail focused, non-144A PRIVATE PLACEMENTS are not eligible. The bonds issued under MTN or EMTN series are not eligible for the index.
- When both a Regs and a 144A version of the bond are available, the Reg S version will be preferred.
- Price from the PRICING PROVIDER and reference data must be available.
- The bonds must meet the minimum amount outstanding as shown in the following table for eligible countries. For US Treasuries (Sovereign debt from United States), UK Gilts (Sovereign debt from United Kingdom) and Japanese Government Bonds (Sovereign debt from Japan) amount outstanding figures will be adjusted for respective central banks holdings. This list may evolve due to the addition or deletion of countries in the Bond Market Classification Framework (<https://www.solactive.com/documents/bond-market-classification-framework/>). The minimum



amount outstanding may change due to technical currency conversion (i.e. currency reform) and will be converted with the corresponding exchange rate.

Country	Currency	Min. Bond Size
Argentina	ARS	57.500.000.000
Brazil	BRL	12.000.000.000
Chile	CLP	300.000.000.000
Colombia	COP	4.500.000.000.000
Dominican Republic	DOP	250.000.000.000
Mexico	MXN	30.000.000.000
Czech republic	CZK	30.000.000.000
Hungary	HUF	275.000.000.000
Romania	RON	4.000.000.000
Russia	RUB	100.000.000.000

Country	Currency	Min. Bond Size
Turkey	TRY	6.000.000.000
Poland	PLN	5.000.000.000
South Africa	ZAR	20.000.000.000
Malaysia	MYR	3.000.000.000
Indonesia	IDR	15.000.000.000.000
Peru	PEN	1.500.000.000
Philippines	PHP	30.000.000.000
Thailand	THB	30.000.000.000
Taiwan	TWD	40.000.000.000

Country	Currency	Min. Bond Size
Member States of the European Union whose currency is the Euro	EUR	1.500.000.000
Denmark	DKK	15.000.000.000
United States	USD	1.500.000.000
United Kingdom	GBP	1.500.000.000
Canada	CAD	1.500.000.000
Israel	ILS	15.000.000.000
Norway	NOK	15.000.000.000
Switzerland	CHF	1.500.000.000
Sweden	SEK	15.000.000.000
Australia	AUD	1.500.000.000
Japan	JPY	150.000.000.000
Singapore	SGD	1.500.000.000
New Zealand	NZD	1.500.000.000
Hong Kong	HKD	15.000.000.000

A price from the PRICING PROVIDER must be available for each INDEX COMPONENT on each SELECTION DAY.

(the "INDEX COMPONENT REQUIREMENTS")

2.1.1 ELEGIBLE COUNTRIES

The list of eligible emerging markets is reviewed once a year for the June selection in May and takes into account the following factors:

- The classification under the Solactive Bond Market Country Classification Framework. Countries which are classified as Developed will not normally be classified as an Emerging Market.
- Accessibility for foreign investors, including the presence of capital controls, currency convertibility, availability and transparency of market data, registration restrictions, limits on foreign ownership and taxation policies.



2.2. WEIGHTING OF THE INDEX COMPONENTS

On each REBALANCING DAY each INDEX COMPONENT is weighted using the market value based on the LAST EVALUATED BID PRICES and accrued interest, as described in Section 1.4 and accrued interest as of the REBALANCING DAY in order to achieve the aim of the Index.

3. REBALANCE

3.1. ORDINARY REBALANCE

In order to reflect the new selection of the INDEX COMPONENTS determined on the SELECTION DAY (in accordance with Section 2.1) the INDEX is adjusted on the REBALANCE DAY after CLOSE OF BUSINESS.

For more information on the rebalance procedure please refer to the Bond Index Methodology, which is incorporated by reference and available on the SOLACTIVE website: <https://www.solactive.com/documents/bond-index-methodology/>.

SOLACTIVE will publish any changes made to the INDEX COMPONENTS with sufficient notice before the REBALANCE DAY on the SOLACTIVE webpage under the section "[Announcement](#)", which is available at <https://www.solactive.com/news/announcements/>

3.2. EXTRAORDINARY REBALANCE

The Index Series is not rebalanced extraordinarily.



4. CALCULATION OF THE INDEX

4.1. INDEX FORMULA

The INDEX is calculated as a Total Return index.

The calculation is performed according to the Bond Index Methodology, which is available on the SOLACTIVE website: <https://www.solactive.com/documents/bond-index-methodology/>.

A Total Return (TR) index seeks to replicate the overall return from holding an index portfolio, thus considering both coupon payments and Corporate Action proceeds in addition to the price changes adjusted for any accrued interest. Cash payments will be accumulated and reinvested with each rebalancing.

The periodic reinvestment formula implies a periodic reinvestment in the INDEX of proceeds resulting from corporate actions and coupon payments in respect of the INDEX COMPONENTS on the next regular REBALANCE DAY following such events. For the period until reinvestment the proceeds are held in a cash component. On the REBALANCE DAY the proceeds are reinvested in the INDEX proportionately to the weights of the INDEX COMPONENTS. The periodic reinvestment formula tracks the performance of the INDEX COMPONENTS relative to the index market value on the immediately preceding REBALANCE DAY. The market value for an individual INDEX COMPONENT on a REBALANCE DAY is based on the price for the respective bond and its face value on the SELECTION DAY associated with the REBALANCE DAY.

A more detailed description of the mechanics of the periodic reinvestment formula can be found in the Bond index Methodology under Section 1.2.2, which is available on the SOLACTIVE website: <https://www.solactive.com/documents/bond-index-methodology/>.

4.2. ACCURACY

The level of the Index will be rounded to 2 decimal places. Foreign exchange rates will be rounded to six decimal places.

4.3. ADJUSTMENTS

Under certain circumstances, an adjustment of the INDEX may be necessary between two regular REBALANCE DAYS. Basically, such adjustment is need to be made if a corporate action (as specified in Section 4.4 below) in relation to an INDEX COMPONENT occurs. Such adjustment may need to be done in relation to an INDEX COMPONENT and/or may also affect the number of INDEX COMPONENTS and/or the weighting of certain INDEX COMPONENTS and will be made in compliance with the Bond Index Methodology, which is available which is available on the SOLACTIVE website: <https://www.solactive.com/documents/bond-index-methodology/>.



4.4. CORPORATE ACTIONS

As part of the INDEX maintenance SOLACTIVE will consider various events – also referred to as corporate actions – which result in an adjustment to the INDEX between two regular REBALANCE DAYS. Such events have a material impact on the price, weighting or overall integrity of INDEX COMPONENTS. Therefore, they need to be accounted for in the calculation of the INDEX. Corporate actions will be implemented from the cum-day to the ex-day of the corporate action, so that the adjustment to the INDEX coincides with the occurrence of the price effect of the respective corporate action.

Adjustments to the INDEX to account for corporate actions will be made in compliance with the Bond Index Methodology, which is available on the SOLACTIVE website: <https://www.solactive.com/documents/bond-index-methodology/>. This document contains for each corporate action a brief definition and specifies the relevant adjustment to the INDEX variables.

While SOLACTIVE aims at creating and maintaining its methodology for treatment of corporate actions as generic and transparent as possible and in line with regulatory requirements, it retains the right in accordance with the Bond Index Methodology to deviate from these standard procedures in case of any unusual or complex corporate action or if such a deviation is made to preserve the comparability and representativeness of the INDEX over time.

Solactive considers following, but not conclusive, list of corporate actions as relevant for INDEX maintenance:

- > Early Redemption (an event that leads to a redemption of a bond before the regular maturity date)
- > Flat Trading (e.g. a bond ISSUER fails to meet its coupon payment obligation)
- > Bond Default (e.g. when the ISSUER fails to meet its coupon payment obligation or repay the principal at maturity)
- > Tender Offers (a holder of a bond is invited to tender the bond for a specific price at a specific time before the regular maturity date)
- > Exchange Offers (type of a tender offer where the ISSUER offers its bondholders to exchange their existing bonds for an asset other than cash)
- > Distressed Debt Exchange (form of debt exchange when bondholders agree to reduce the principal amount of debt securities in order to obtain higher payment priority in the form of secured debt)
- > Bond Funge (bond issue that is attached to an existing one (parent bond). On a defined date the parent bond absorbs the funged bond)
- > Payment-in-Kind Bonds (a situation where a bond pay interest in additional bonds rather than in cash)



4.5. 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/>.

4.6. MARKET DISRUPTION

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.



5. MISCELLANEOUS

5.1. DISCRETION

Any discretion which may need to be exercised in relation to the determination of the INDEX (for example the determination of the INDEX COMPONENTS 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 established by the INDEX ADMINISTRATOR.

5.2. 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 Methodology Policy, which is incorporated by reference available on the SOLACTIVE website: <https://www.solactive.com/documents/methodology-policy/>.

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.

5.3. 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, 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.

5.4. 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 5.2 "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 the 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 the 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/>.

5.5. 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/>.



6. DEFINITIONS

"LAST EVALUATED ASK PRICE" the last available evaluated ask price by the designated Pricing Provider.

"LAST EVALUATED BID PRICE" the last available evaluated bid price by the designated Pricing Provider.

"BENCHMARK REGULATION" shall have the meaning as defined in Section "Introduction".

"BMR" shall have the meaning as defined in Section "Introduction".

"BUSINESS DAY" In relation to the index is each day, Monday to Friday, except banking holidays as defined by the New York Stock Exchange (NYSE) and SIFMA. With respect to the INDEX any day other than a Saturday or Sunday or a day on which the Securities Industry and Financial Markets Association (SIFMA) recommends that the fixed income departments of its members be closed for the entire day for purposes of trading in U.S. government securities. The SIFMA holiday recommendations are set out on the following website (or any successor page): <http://www.sifma.org/services/holiday-schedule/>.

"CALLABLES" bond (call bond, callable) is a bond with an embedded call option.

"CENTRAL BANK" is a financial institution given privileged control over the production and distribution of money and credit for a nation or a group of nations.

"CENTRAL GOVERNMENT" is a debt security issued by a government to support government spending.

"CLOSE OF BUSINESS" is a time stamp when an INDEX is calculated. This occurs at 23:00 CET every Business Day.

"COUNTRY OF INCORPORATION" is defined by Solactive based on the assessment of market data providers as the country where the company is incorporated or legally registered.

"COVERED BONDS" are bonds backed by a ring-fenced pool of assets such as mortgages or public-sector loans. The Issuer retains the responsibility to maintain the quality of the underlying asset pool.

"EFFECTIVE TIME TO MATURITY" is the minimum of the next call or put date and the final maturity date.

"EXTENDIBLE" (or extendible bond) is a long-term debt security that includes an option to lengthen its maturity period.

"FIXED COUPON BONDS" are bonds with a coupon rate that is fixed throughout their life, as opposed to bonds with floating, or variable coupons.

"FIXING TIME" is the time when the prices for the INDEX COMPONENTS are fixed for index calculation. This is 16:00 NY Time.

"FLOATING RATE NOTES" are bonds with a floating coupon rate, i.e. the coupon payments fluctuate in line with the underlying level of a pre-specified interest rate.

"GUIDELINE" shall have the meaning as defined in Section "Introduction".

"INDEX ADMINISTRATOR" shall have the meaning as defined in Section "Introduction".



"INDEX CALCULATOR" is Solactive or any other appropriately appointed successor in this function.

"INDEX COMPONENT REQUIREMENTS" shall have the meaning as defined in Section 2.1.

"INDEX COMPONENT" is each bond reflected in the Index.

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

"INDEX" shall have the meaning as defined in Section "Introduction".

"INFLATION-LINKED BONDS" are bonds whose principal and coupon payments are indexed to inflation.

"INTEREST ONLY STRIPS" are a security where the holder receives the non-principal portion of the monthly payments on the underlying loan pool.

"INVESTMENT GRADE" are all ratings of at least BBB- by Standard & Poor's and Fitch or Baa3 by Moody's Investors Service.

"LIVE DATE" is 29th January 2020.

"OVERSIGHT COMMITTEE" shall have the meaning as defined in Section 5.5.

"PERPETUALS" is a bond with no maturity date.

"PRICING PROVIDER" is Interactive Data Corporation part of the ICE group.

"PRINCIPAL ONLY STRIPS" are a fixed-income security where the holder receives the non-interest portion of the monthly payments on the underlying loan pool.

"PRIVATE PLACEMENT" involves the sale of securities to a relatively small number of select investors. Investors targeted include wealthy accredited investors, large banks, mutual funds, insurance companies and pension funds.

"PUTABLES" bond (put bond, puttable or retractable bond) is a bond with an embedded put option.

"REBALANCE DAY" is the close of the last Business Day of each month.

"SELECTION DAY" is 6 Business Days before the Rebalance Day.

"SINKABLES" are bonds that are backed by a fund that sets aside money on a regular basis. A sinkable bond issuer is required to buy a certain amount of the bond back from the purchaser at various points throughout the life of the bond.

"SOLACTIVE" shall have the meaning as defined in Section "Introduction".

"SPOT" is the spot foreign exchange rate to convert the currency of the Index Component into the denomination of the INDEX CURRENCY.

"STEP-UP COUPON BONDS" are bonds whose coupons increase while the bond is outstanding. The coupon amounts are determined at issuance.

"TREASURY BILLS" is a short-term U.S. government debt obligation backed by the Treasury Department with a maturity of one year or less.



“ZERO COUPON BONDS” means bonds which do not pay interest but are issued at a discount.

CONTACT

Solactive AG
German Index Engineering

Platz der Einheit 1
60327 Frankfurt am Main
Germany

Tel.: +49 (0) 69 719 160 00

Fax: +49 (0) 69 719 160 25

Email: info@solactive.com

Website: www.solactive.com

© Solactive AG