

Guideline

Solactive Australia Government Bond TR AUD Index
Solactive New Zealand Government Bond TR NZD Index
Solactive Japan Government Bond TR JPY Index
Solactive United Kingdom Government Bond TR GBP Index
Solactive Nordics Government Bond TR EUR Index

Version 1.1 dated 19th of November 2019



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This document contains the underlying principles and regulations regarding the structure and operation of the Solactive Australia Government Bond TR AUD Index, the Solactive New Zealand Government Bond TR NZD Index, the Solactive Japan Government Bond TR JPY Index, the Solactive United Kingdom Government Bond TR GBP Index and the Solactive Nordics Government Bond TR EUR Index. 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 Australia Government Bond TR AUD Index, the Solactive New Zealand Government Bond TR NZD Index, the Solactive Japan Government Bond TR JPY Index, the Solactive United Kingdom Government Bond TR GBP Index and the Solactive Nordics Government Bond TR EUR Index are the sole property 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.

Introduction

This document is to be used as a guideline with regard to the composition, calculation and management of the Solactive Australia Government Bond TR AUD Index, the Solactive New Zealand Government Bond TR NZD Index, Solactive Japan Government Bond TR JPY Index, Solactive United Kingdom Government Bond TR GBP Index and the Solactive Nordics Government Bond TR EUR Index. Any changes made to the guideline are initiated by the Committee specified in section 1.6. The above-mentioned indices are the sole property of Solactive AG. The above-mentioned indices are calculated and published by Solactive AG. The name "Solactive" is copyrighted.

1 Index specifications

The above-mentioned indices are rules-based indices engineered to mirror the performance of the respective sovereign, local currency debt markets.

Index Name	Underlying Debt Market
Solactive Australia Government Bond TR AUD Index	Australia
Solactive New Zealand Government Bond TR NZD Index	New Zealand
Solactive Japan Government Bond TR JPY Index	Japan
Solactive United Kingdom Government Bond TR GBP Index	United Kingdom
Solactive Nordics Government Bond TR EUR Index	Sweden, Norway and Denmark

The above mentioned indices are Total Return Indices, i.e. coupon payments will be reinvested in the indices.

1.1 Name and ISIN

The Indices are published under the following identifiers:

Name	ISIN	Currency	Type	RIC	BBG Ticker
Solactive Australia Government Bond TR AUD Index	DE000SLA6QZ3	AUD	TR	.SOLAUSOV	NA
Solactive New Zealand Government Bond TR NZD Index	DE000SLA6Q09	NZD	TR	.SOLNZSOV	NA
Solactive Japan Government Bond TR JPY Index	DE000SLA6QX8	JPY	TR	.SOLJPSOV	NA
Solactive United Kingdom Government Bond TR GBP Index	DE000SLA6QY6	GBP	TR	.SOLUKSOV	NA
Solactive Nordics Government Bond TR EUR Index	DE000SLA6Q17	EUR	TR	.SOLNSOV	NA

1.2 Initial value

All above mentioned indices will be calculated every Business Day starting 15th of October 2018. Before this date the index values are backfilled until 31st of October 2012 with the index values based on 1000 as at the close of trading on 09th of October 2018.

1.3 Distribution

All above mentioned indices are published via the price marketing services of Boerse Stuttgart GmbH and is distributed to all affiliated vendors.

1.4 Prices and calculation frequency

All above mentioned 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 Day using the Last Evaluated Price. New bonds are included in the index at their Evaluated Ask Price.

Securities are priced at different fixings according to their main trading venue. Fixings are chosen according the table below:

Country	Closing Region	Fixing Time
Austria	Europe	4:15 pm London Time
Belgium	Europe	4:15 pm London Time
Canada	Americas	4:00 pm EST
Cyprus	Europe	4:15 pm London Time
Denmark	Europe	4:15 pm London Time
Finland	Europe	4:15 pm London Time
France	Europe	4:15 pm London Time
Germany	Europe	4:15 pm London Time
Greece	Europe	4:15 pm London Time
Hong Kong	APAC	7:00 pm Australian Time
Ireland	Europe	4:15 pm London Time
Israel	Europe	4:15 pm London Time
Italy	Europe	4:15 pm London Time
Japan	APAC	7:00 pm Australian Time
Latvia	Europe	4:15 pm London Time
Lithuania	Europe	4:15 pm London Time
Luxembourg	Europe	4:15 pm London Time
Malta	Europe	4:15 pm London Time
Netherlands	Europe	4:15 pm London Time
New Zealand	APAC	7:00 pm Australian Time
Norway	Europe	4:15 pm London Time
Portugal	Europe	4:15 pm London Time
Singapore	APAC	7:00 pm Australian Time
Slovakia	Europe	4:15 pm London Time
Slovenia	Europe	4:15 pm London Time
Spain	Europe	4:15 pm London Time
Switzerland	Europe	4:15 pm London Time
United Kingdom	Europe	4:15 pm London Time
United States	Americas	4:00 pm EST
Australia	APAC	7:00 pm Australian Time

Updated index values and other statistics will not be distributed, in the event that the 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 US Treasuries, UK Gilts and Japanese Government Bonds Amount Outstanding figures will be adjusted for respective central banks holdings. These adjusted figures will then be used to calculate Market Values and Weights

1.6 Decision-making bodies

A Committee composed of staff from Solactive AG is responsible for decisions regarding the composition of all above mentioned 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 all above mentioned indices 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 the 31st of October 2012.

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 index, 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 monthly Adjustment Day to the Selection Pool. Additionally, on the monthly Adjustment 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 index is ordinarily reviewed on the Selection Day. Any change to the index will be implemented on the Adjustment Day.

2.3 Extraordinary adjustment

The Index Committee will decide about the future composition and the implementation of any necessary adjustments to the above-mentioned indices, if an Extraordinary Event (early redemption, credit event etc.) affecting one or more index constituents occurs. See details under 3.3 Adjustments

3 Calculation of the Index

3.1.1 Index formula

The above-mentioned indices are indices whose values reflect the relative changes in bond values. Therefore, the compositions and weightings are adjusted every month.

As a formula:

$$Index_t = Index_n \frac{MarketValue_t + PaidCash_t}{BaseValue_n}$$

$$MarketValue_t = \sum_{i=1}^a (DirtyPrice_{i,t} + CPA_{i,t}) \cdot Amount_{i,n} \cdot Capfactor_{i,rb}$$

$$PaidCash_t = \sum_{i=1}^a Coupon_{i,t} \cdot Amount_{i,n} \cdot Capfactor_{i,rb}$$

$$BaseValue_n = \sum_{i=1}^a (DirtyPrice_{i,n} + CPA_{i,t}) \cdot Amount_{i,n} \cdot Capfactor_{i,rb}$$

Whereas:

$Index_t$ = Value of the index on Business Day t.

$Index_n$ = Value of the index on the last Adjustment Day n.

$CPA_{i,t}$ = Variable Coupon Adjustment Factor i on Business Day t is 0 if a bond enters the index during an ex-dividend period. If the bond is already in the index during the ex-dividend period, the Variable Coupon Adjustment Factor equals the coupon amount.

$DirtyPrice_{i,t}$ = Dirty Price of the bond i on Business Day t, whereas Dirty Price t is the sum of the clean price of the bond i on Business Day t and the accrued interest on Business Day t.

$DirtyPrice_{i,n}$ = Dirty Price of the bond i on the last Adjustment Day n, whereas Dirty Price is the sum of the clean price of the bond i on the last Adjustment Day n and the accrued interest on the last Adjustment Day n.

$Amount_{i,n}$ = Amount Outstanding of the respective bond as defined on the last Adjustment Day n.

$PaidCash_t$ = a) Value of the coupon payments between Adjustment Days.
b) If a bond i will be removed from the index between Adjustment Days, the resulting payment of the bond will be included in the Paid Cash component of the index.
On the next Adjustment Day "Paid Cash" will be reinvested in the index.

$Coupon_{i,t}$ = Coupon payment of bond i between payment date and Adjustment Day n. In case there is no coupon payment, Coupon i,t is 0.

$Capfactor_{i,rb}$ = Weighting Cap Factor of portfolio component i determined on Selection day rb, to cap the weighting as described under Index Weighting

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 taxes into account and assumes gross coupon payments.

Accrued interests are 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 above-mentioned 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 held as "Paid Cash" and reinvested into the index on the following Adjustment Day. 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 marked as flat trading if the bond issuer will not meet its coupon payment obligation. This 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 the case when 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-tranches: 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) Payment-in-Kind Bonds: These bonds pay interest in additional bonds rather than in cash. Assuming the additional bonds will be sold immediately and the proceeds will be reinvested in the index, payments-in-kind are therefore considered as cash in the Paid Cash component in all Total Return calculations.

(g) Ex-dividend Bonds: "Ex-dividend" means that the next coupon is detached from the bond several days in advance of the coupon payment date. Between ex-date and pay-date a buyer of the bond does not get the right to receive the next coupon. Therefore, accrued interest is negative during that period. However, the coupon will be paid to the original bondholder, i.e. if a bond is already in the index the next coupon payment is held separate in the Variable Coupon Adjustment Factor $CPAdj_{i,t}$. If the bond enters the index during the ex-dividend period $CPAdj_{i,t}$ is zero as the next coupon payment will not accrue to the index.

(h) Full Tender or Early Redemption: 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 adaption of the index.*

On the effective date price and accrued interest are 0 and the proceeds (tender or redemption price + accrued interest or coupon) are considered as "Paid Cash" in the return formula (see 3.1.1). On the next calculation day, the bond is removed from the index and weightings are calculated according to the formula in 3.1.1. The new higher weightings of the remaining constituents imply the direct reinvestment of the redeemed bond into all other Index Components.

*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 or exchanged into the relevant bond.

4. Definitions

4.1 index-specific definitions

The **“Selection Pool”** for the Solactive Australia Government Bond TR AUD Index comprises bonds that fulfill the following conditions:

- Only Central Government debt issued by the government of Australia
- Bond Type: Fixed Coupon Bonds are eligible for the index. The following bond types are specifically excluded from the index: Sinkables, Perpetuals, Putables, Floating Rate Notes, Callables, Extendibles, Inflation Linked Bonds, Principal Only Strips and Interest Only Strips as well as Private Placements.
- The bonds issued under MTN or EMTN series are not eligible for the index.
- Time to maturity: Must have at least 1 year to maturity on each Adjustment day.
- Currency: local currency of the issuing country denominated.
- Issue Amount Outstanding: AUD – 1.5 bn

The **“Selection Pool”** for the Solactive New Zealand Government Bond TR NZD Index comprises bonds that fulfill the following conditions:

- Only Central Government debt issued by the government of New Zealand
- Bond Type: Fixed Coupon Bonds are eligible for the index. The following bond types are specifically excluded from the index: Sinkables, Perpetuals, Putables, Floating Rate Notes, Callables, Extendibles, Inflation Linked Bonds, Principal Only Strips and Interest Only Strips as well as Private Placements.
- The bonds issued under MTN or EMTN series are not eligible for the index.
- Time to maturity: Must have at least 1 year to maturity on each Adjustment day.
- Currency: local currency of the issuing country denominated.
- Issue Amount Outstanding: NZD – 1.5 bn

The **“Selection Pool”** for the Solactive Japan Government Bond TR JPY Index comprises bonds that fulfill the following conditions:

- Only Central Government debt issued by the government of Japan
- Bond Type: Fixed Coupon Bonds are eligible for the index. The following bond types are specifically excluded from the index: Sinkables, Perpetuals, Putables, Floating Rate Notes, Callables, Extendibles, Inflation Linked Bonds, Principal Only Strips and Interest Only Strips as well as Private Placements.
- The bonds issued under MTN or EMTN series are not eligible for the index.
- Time to maturity: Must have at least 1 year to maturity on each Adjustment day.
- Currency: local currency of the issuing country denominated.
- Issue Amount Outstanding: JPY – 150 bn

The **“Selection Pool”** for the Solactive United Kingdom Government Bond TR GBP Index comprises bonds that fulfill the following conditions:

- Only Central Government debt issued by the government of the United Kingdom
- Bond Type: Fixed Coupon Bonds are eligible for the index. The following bond types are specifically excluded from the index: Sinkables, Perpetuals, Putables, Floating Rate Notes, Callables, Extendibles, Inflation Linked Bonds, Principal Only Strips and Interest Only Strips as well as Private Placements
- The bonds issued under MTN or EMTN series are not eligible for the index.
- Time to maturity: Must have at least 1 year to maturity on each Adjustment day.
- Currency: local currency of the issuing country denominated.
- Issue Amount Outstanding: GBP – 1.5 bn

The “**Selection Pool**” for the Solactive Nordics Government Bond TR EUR Index comprises bonds that fulfill the following conditions:

- Only Central Government debt issued by the governments of Sweden, Denmark and Norway.
- Bond Type: Fixed Coupon Bonds are eligible for the index. The following bond types are specifically excluded from the index: Sinkables, Perpetuals, Putables, Floating Rate Notes, Callables, Extendibles, Inflation Linked Bonds, Principal Only Strips and Interest Only Strips as well as Private Placements
- The bonds issued under MTN or EMTN series are not eligible for the index.
- Time to maturity: Must have at least 1 year to maturity on each Adjustment day.
- Currency: local currency of the issuing country denominated.
- Issue Amount Outstanding: SEK– 15 bn, NOK – 15 bn, DKK – 15 bn

4.2 Further definitions

“Adjustment Day” is the last Business Day of each month.

“Amount Outstanding” is the face value of the respective bond.

A **“Business Day”** in relation to the index is each day Monday to Friday except common European banking holidays. Common European banking holidays are Good Friday, Easter Monday, Christmas Day, Boxing Day and New Year’s Day, and holidays as defined the by the NYSE (New Years Day, Martin Luther King, Jr. Day, Washington’s Birthday, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas)

“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.

“Convertible Bonds” are bonds that can be converted into a predetermined amount of the company's equity at certain times during its life.

“Covered Bonds” are bonds backed by cash flows or mortgages or public sector loans.

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.

“Ex-dividend” means that the next coupon is detached from the bond several days in advance of the coupon payment 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

“Fixed Coupon Bonds” are bonds with a fixed coupon rate, as opposed to floating rate coupons.

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

“Floating Rate Bonds” are bonds with a variable or floating interest rate, i.e. coupons fluctuate in line with the underlying level of interest rates, as opposed to fixed-rate coupons.

“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”** when the issuer is not able to fulfil its bond payment obligations anymore after the 30 days grace period.

The **“Index Calculator”** is Solactive AG or any other appropriately appointed successor in this function.

“Index Components” are all bonds in the Selection Pool.

The **“Index Currency”** is

Index Name	Index Currency
Solactive Australia Government Bond TR AUD Index	AUD
Solactive New Zealand Government Bond TR NZD Index	NZD
Solactive Japan Government Bond TR JPY Index	JPY
Solactive United Kingdom Government Bond TR GBP Index	GBP
Solactive Nordics Government Bond TR EUR Index	EUR

“Inflation-linked Bonds” are bonds whose principal is indexed to inflation.

“Issuer” is the issuing entity of the respective bond.

“Last Evaluated Price” generally is (aside from the rules referred to in “Extraordinary Events”) the last available Evaluated Bid Price.

“Evaluated Ask Price” is the last available Ask Price evaluated by the designated 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. On the next Adjustment Day **“Paid Cash”** will be reinvested in the index.

“Payment-In-Kind Bonds” are a type of bonds that pay interest in additional bonds rather than in cash.

“Preferred Securities” combine both debt and equity characteristics.

“Securitized Bonds” are bonds secured against specific assets or receivables (ABS), mortgages (MBS) or cash flows.

“Selection Day” is a Business Day 6 Business Days prior to the Adjustment Day.

“Sinking Fund Bonds” 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.

“Step-Up Coupon Bonds” are bonds whose coupons increase while the bond is outstanding. The coupon amounts are determined at issuance.

“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.

“Zero Coupon Bonds” do not pay interest but are issued at a discount.

Appendix

5.1 Contact data

Information regarding all index concepts

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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.