

Guideline relating to

Solactive Canadian Select Bond Index Family

Consisting of

Solactive Canadian Select Universe Bond Index

Solactive Canadian Select Corporate Bond Index

Solactive Canadian Select Short Term Bond Index

Version 7.1 dated January 2, 2018



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This document contains the underlying principles and regulations regarding the structure and the operations of the Solactive Canadian Select Bond Index Family. Solactive AG does not offer any explicit or tacit guarantee or assurance, neither pertaining to the results from the use of an index nor index value at any certain point in time nor in any other respect. The Solactive Canadian Select Bond Index Family is 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 Indices 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 an index.

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Introduction

This document is to be used as a guideline with regard to the composition, calculation and management of the Solactive Canadian Select Bond Index Family. This family of indices measures the performance of the Canadian investment grade bond market.

Any changes made to these guidelines are initiated by the Committee specified in section 1.6. The Solactive Canadian Select Bond Index Family is the sole property of Solactive AG. The Solactive Canadian Select Bond Index Family is calculated and published by Solactive AG. The name "Solactive" is copyrighted.

1 Index Specifications

The Solactive Canadian Select Bond Index Family consists of three indices: the Solactive Canadian Select Corporate Bond Index, Solactive Canadian Select Universe Bond Index and the Solactive Canadian Select Short Term Bond Index. These indices are rules-based and designed to measure the performance of the Canadian bond market denominated in CAD.

The Solactive Canadian Select Universe Bond Index is designed to measure the performance of the Canadian investment grade bond market (government and corporate bonds) by selecting a representative group of bonds from the available universe. The Solactive Canadian Select Short Term Bond Index measures only the short term component of the universe while the Solactive Canadian Select Corporate Bond Index measures the corporate bond component.

For each index, both a price return and total return are calculated.

1.1 Name and ISIN

The Solactive Canadian Select Indices are distributed under the following ISIN. The Indices are published in Reuters and Bloomberg under the following symbols:

Name	ISIN	Reuters RIC	Bloomberg Ticker
Solactive Canadian Select Universe Bond Index			
Price Return	DE000SLA4FB2	.SOLHBBPR	SOLHBBPR Index
Total Return	DE000SLA3FB4	.SOLHBB	SOLHBB Index
Solactive Canadian Select Corporate Bond Index			
Price Return	DE000SLA4FC0	.SOLHCBPR	
Total Return	DE000SLA3FC2	.SOLHCB	SOLHCB Index
Solactive Canadian Select Short Term Bond Index			
Price Return	DE000SLA4FD8	.SOLHSBPR	
Total Return	DE000SLA3FD0	.SOLHSB	SOLHSB Index

1.2 Initial Values and History

The Solactive Canadian Select Universe Bond Indices and the Solactive Canadian Select Corporate Bond Indices are calculated every Business Day starting on the 24th of February 2014. Before this date the index values are backfilled until the 3rd of January 2012, with the index value based on 1000 as of the close of trading on 24th of February 2014.

The Solactive Canadian Select Short Term Bond Indices are calculated every Business Day starting on the 2nd of January 2018. Before this date the index values are backfilled until the 3rd of January 2012, with the index value based on 1000 as of the close of trading on 29th of December 2017.

1.3 Distribution

The Solactive Canadian Select Bond Index Family is published via the distribution platform of Boerse Stuttgart AG and is distributed to all affiliated vendors.

1.4 Prices and Calculation Frequency

The Solactive Canadian Select Bond Indices are calculated based on ask prices of the respective index constituents. Prices are received from Interactive Data Corp for the universe of Canadian investment grade bonds. Interactive Data Corp uses valuations from Securities Valuations (SVCSM), a service of SS&C Technologies, Inc., for Canadian dollar denominated fixed income securities. SVC uses as inputs trader marks from RBC and Canadian Imperial Bank of Commerce (CIBC). Additional information regarding the prices IDC captures is available at <http://www.interactivedata.com/>. Each index is calculated at the close (approximately 5 pm New York time) and distributed each Business Day.

In the event that pricing data cannot be provided or that there are issues regarding the index value dissemination of Solactive AG or Börse Stuttgart the index affected cannot be distributed.

1.5 Decision-making Bodies

A Committee composed of Solactive AG employees is responsible for decisions regarding the composition of the Solactive Canadian Select Bond Indices as well as any amendments to the guidelines (hereinafter referred to as the "**Committee**" or the "**Index Committee**"). The Committee determines the composition of the Solactive Canadian Select Bond Indices when any extraordinary event (see chapter 2.1 & 2.2) occurs and implementing any necessary adjustments.

Members of the Committee can recommend changes to the composition of an Index or to these guidelines at any time and submit them to the Committee for approval.

The Committee may decide to include or exclude bonds from an index in its sole discretion if the index constituents (selected according to the guideline) do not fulfill the goal of representing, in an appropriate manner, the duration and yield of the universe of eligible securities. For the avoidance of doubt, this rule will only be used on an exceptional basis and will not be relied on for continuous amendments to index compositions.

1.6 Publication

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

1.7 Historical Data

Historical data will be maintained from the 3rd of January 2012.

1.8 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 Eligible Bonds and Rebalancing

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

- (a) Denominated in CAD
- (b) Amount Outstanding of at least 100m CAD for corporate bonds and 50m CAD for government bonds
- (c) Effective time to maturity of not less than 12 months
- (d) Only bonds that pay a fixed rate
- (e) The securities must have a rating of at least BBB- or its equivalent from S&P or Moody’s.
- (f) Floating rate notes, convertibles, mortgage backed securities, asset backed securities, inflation-linked securities, flat trading or defaulted securities are specifically excluded from the available universe.

The Solactive Canadian Select Bond Indices are calculated to reflect the relative changes in bond values. The composition and weighting of the indices are adjusted on the last business day of each month (the Adjustment day). At the Selection day the composition of each index is reviewed as per Section 2.1.

For the avoidance of doubt, besides the Selection Pool criteria and reweighting mentioned above, the types of changes which are implemented on a monthly basis on the respective Adjustment Day will include:

- Adjustments to amount outstanding due to re-opening, repurchases, stripping increases etc.
- Removal of Bonds that no longer meet the amount outstanding requirements due to partial or early redemptions.

2.1 Selection of the Index Constituents

The index constituents will be selected on each Selection Day, which is the 7th business day before the Adjustment Day. The actual index rebalancing will take place on the last business day of each month on the Adjustment Day.

2.1.1 Solactive Canadian Select Corporate Bond Index:

All bonds that meet the criteria in the Solactive Canadian Corporate Selection Pool are selected as index constituents for the **Corporate Universe**. In the Corporate Universe, all bonds are weighted according to the Amount Outstanding in proportion to the aggregated Amount Outstanding of all Corporate Universe constituents.

As a first step the issuer weight for all issuers in the Corporate Universe will be calculated as well as the weighted yield per issuer and the weighted duration per issuer.

As a second step only the issuers that make up 80% of the Corporate Universe weights are taken into account, i.e. the 20% smallest issuers are removed from the Corporate Universe. As a buffer, to limit turnover, only those issuers whose weight changes by more than 3% will be eligible to move from the top 80% to the lower 20% or from the lower 20% up to the top 80% (compared to the previous monthly selection).

As a third step, the absolute deviation per bond to the respective weighted yield per issuer and the weighted duration per issuer is calculated. Based on the absolute deviation the following point system is applied:

Absolute deviation on yield		
From	to	points
0%	10%	10.00
10%	15%	5.00
15%	30%	2.00
30%	45%	1.00
45%	300%	0

Absolute deviation on duration		
from	to	points
0%	20%	10.00
20%	30%	5.00
30%	45%	2.00
45%	55%	1.00
55%	300%	0

For each bond the sum of the points (“=criteria points”) received from absolute deviation on duration and absolute deviation on yield is calculated.

For each issuer, the bonds are ranked according to their points (e.g. 1,2,3, etc.) and only the bonds with the first rank (=highest points) will be chosen as index components. If more than two bonds per issuer are ranked highest, bonds that are already part of the index composition will be chosen. If only one or none of the bonds with the highest rank are already part of the index composition, the bonds with the smaller absolute deviation on duration will be chosen. Assuming a bond had the highest rank in the last selection and only has the second rank in the current selection, it will be chosen as an index component. Respectively the bond with the first rank will not be included in such a case.

2.1.2 Solactive Canadian Select Universe Bond Index:

All bonds that meet the criteria in the Solactive Canadian Aggregate Selection Pool are selected as index constituents for the **Aggregate Universe**. The Aggregate Universe is divided into the **Corporate Universe** (see 2.1.1) and the **Government Universe**.

In the Government Universe, all bonds are weighted according to the Amount Outstanding in proportion to the aggregated Amount Outstanding of all Government Universe constituents.

As a first step, each bond is categorized according to its effective time to maturity in the following manner:

Years from	Years to	Maturity category
0	5.00	Short
5.001	10.00	Mid
10.001	300.00	Long

For each bond an identifier including Issuer and Maturity category is defined (“government/maturity identifier”) The weight for each government/maturity identifier in the Government Universe will be calculated as well as the weighted yield per government/maturity identifier and the weighted duration per government/maturity identifier.

As a second step, only the government/maturity identifiers that make up 90% of the Government Universe weights are taken into account, i.e. the 10% smallest government/maturity identifiers are removed from the Government Universe. As a buffer to limit turnover, only those issuers whose weigh changes by more than 3% will be eligible to move from the top 90% (Government Universe) to the lower 10% (or from the lower 10 % up to the top 90%) – compared to the last month selection.

As a third step, the absolute deviation per bond to the respective weighted yield per government/maturity identifier and the weighted duration per government/maturity identifier is calculated. Based on the absolute deviation the following point system is applied:

Absolute deviation on yield		
from	to	points
0%	10%	10.00
10%	15%	5.00
15%	30%	2.00
30%	45%	1.00
45%	300%	0

Absolute deviation on duration		
from	to	points
0%	20%	10.00
20%	30%	5.00
30%	45%	2.00
45%	55%	1.00
55%	300%	0

For each bond, the sum of the points (“=criteria points”) received from absolute deviation on duration and absolute deviation on yield is calculated.

For each government/maturity identifier, the bonds are ranked according to their points (e.g. 1,2,3, etc.) and only the bonds with the highest rank (=highest points) will be chosen as index components. Current constituents will be chosen first if there are multiple bonds which qualify per government/maturity identifier. When additional bonds are required those with the highest rank, which already part of the index composition and have the smaller absolute deviation will be chosen first. If a bond was ranked first in the last selection it will continue to be an index component as long as it’s rank is not reduced by more than one position. However, a bond ranked first at the last selection will not be included in the current selection if the maximum number of bonds per government/maturity identifier has been reached.

The maximum number per government/maturity identifier is determined according to the following criteria:

- a) Their government/maturity identifier belongs to the highest 6 weights in the Government Universe, then up to 10 bonds can be included in the index. If less than 3 bonds are selected as an index constituent, the selection automatically includes the bonds with the next highest criteria points.
- b) Their government/maturity identifier does not belong to the highest 6 weights in the Government Universe then only 2 bonds per government/maturity identifier will be chosen.
- c) If a government/maturity identifier belonged to the six highest weights at the last selection, it will be considered the same for the current selection if its weight has not changed by more than 3% compared to the last selection.

Additionally, to the government bonds selected, the Solactive Canadian Select Universe Bond Index consists of all constituents of the Solactive Canadian Select Corporate Bond Index.

2.1.3 Solactive Canadian Select Short Term Bond Index:

The Solactive Canadian Select Short Term Bond Index consists of all index constituents of the Solactive Canadian Select Universe Bond Index which have an effective time to maturity of less than 5 years.

2.2 Intra-Adjustment Period Changes

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

- (a) For Full Tender, 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 adaption 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 date.
- (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) Scheduled sinking fund and amortization payments are treated on their respective effective data.
- (e) Exchange offers:
 - 1) optional exchange offers are not treated in the index;
 - 2) mandatory exchanges offers: In the case that more than 90% of the amount outstanding is exchanged the exchange will be consider in the index calculation by exchanging the relevant bonds, so that the new bond will receive the weight of the old exchanged bond; and
 - 3) mandatory exchanges offers: In the case that less than 90% of the amount outstanding is exchanged the exchange will not be consider in the index.

Note: Debt issuances of an existing bond will not be considered by an index until the next Adjustment Day.

2.3 Liquidity

The Index Calculator evaluates the market liquidity of each bond being considered for inclusion in the Index on at least a quarterly basis. The Index Calculator evaluates the liquidity by requesting information from Canadian Bond Market participant dealers. These dealer firms will indicate their reasonable view on their ability or inability to trade each respective bond. If it is determined on this criteria that there is insufficient liquidity in a bond to support it being tradable in the index portfolio, the relevant bond may be removed or excluded from the index on the Adjustment Day, by the Index Calculator in its sole discretion. If no information from Canadian Bond Market participant dealers is available, the latest liquidity information from the dealers will be used for the previously existing bonds and for newly issued bonds it will be assumed that they are liquid until information to the contrary is available.

2.4 Weighting

2.4.1 Solactive Canadian Select Corporate Bond Index

Each index bond’s weight reflects the issuer’s weighting in the Corporate Universe. If more than one index bond has the same issuer, each bond is weighted proportionally according to its Amount Outstanding. As an example: The XYZ Corp has a weight of 10% in the Corporate Universe. According to the rules, two bonds from this issuer will be included in the index (XYZ Corp 2015, XYZ Corp 2016). The weight of the respective bond is calculated as:

$$W_{target} = \frac{Amount_{rb,i}}{\sum_{i=1}^a Amount_{rb,i}} * \text{Issuer weight}$$

Applying the formula to the example:

$$(20,000,000/50,000,000)*10\% = 4\%$$

Bond name	Issuer	Issuer Weight in the Corporate Universe	Amount Outstanding per Bond in the Index	Weighting per Bond in the Index
XYZ Corp 2015	XYZ Corp	10.00%	20,000,000	4.00%
XYZ Corp 2016	XYZ Corp	10.00%	30,000,000	6.00%

2.4.2 Solactive Canadian Select Universe Bond Index

The index is comprised of the corporate bond component (as represented by the Solactive Canadian Select Corporate Bond Index) and the government bond component. The government component of the index is weighted according to the “government/maturity identifier” weighting in the Government Universe. Both pieces are weighted according to the Amount Outstanding of the specific Universe (Government Universe or Corporate Universe) in proportion to the Amount Outstanding of the sum of both Universes. The index is parent to two indexes: the Solactive Canadian Select Corporate Bond Index and the Solactive Canadian Select Short Term Bond Index.

2.4.3 Solactive Canadian Select Short Term Bond Index

The index consists of all index constituents of the Solactive Canadian Select Universe Bond Index with an effective time to maturity of less than 5 years (=short constituents). The weights of all short constituents are identical to the weights in the Solactive Canadian Select Universe Bond Index and are proportionally scaled so that the sum of their weights equals 100%.

3 Calculation of an Index

3.1 Index formula

The Price Return indices are calculated using the following formula:

$$\text{Pricereturn}_{t,i} = \frac{\text{Price}_{t,i}}{\text{Price}_{t-1,i}} - 1$$

$$\text{weighting}_{t,i} = \frac{\text{Price}_{t,i} * \text{Amount}_{SD,i} * \text{Cap}_{SD,i}}{\sum_{i=1}^a \text{Price}_{t,i} * \text{Amount}_{SD,i} * \text{Cap}_{SD,i}}$$

$$\text{Index}_t = \text{Index}_{t-1} * (1 + \sum_{i=1}^a (\text{Pricereturn}_{t,i} * \text{weighting}_{t-1,i}))$$

The Total Return indices are calculated using the following formula:

$$\text{Totalreturn}_{t,i} = \frac{\text{Price}_{t,i} + \text{ACCInt}_{t,i} + \text{PaidCash}_{t,i}}{\text{Price}_{t-1,i} + \text{ACCInt}_{t-1,i}} - 1$$

$$\text{weighting}_{t,i} = \frac{(\text{Price}_{t,i} + \text{ACCInt}_{t,i}) * \text{Amount}_{SD,i} * \text{Cap}_{SD,i}}{\sum_{i=1}^a (\text{Price}_{t,i} + \text{ACCInt}_{t,i}) * \text{Amount}_{SD,i} * \text{Cap}_{SD,i}}$$

$$\text{Index}_t = \text{Index}_{t-1} * (1 + \sum_{i=1}^a (\text{Totalreturn}_{t,i} * \text{weighting}_{t-1,i}))$$

Whereas:

$\text{Totalreturn}_{t,i}$	=	Total return of the bond i on trading day t
$\text{Pricereturn}_{t,i}$	=	Price return of the bond i on trading day t
Index_t	=	Value of the index on trading day t
Index_{t-1}	=	Value of the index on trading day t-1
$\text{Price}_{i,t}$	=	Price of the bond i on trading day t
$\text{Price}_{i,t-1}$	=	Price of the bond i on trading day t-1
$\text{ACCInt}_{i,t}$	=	Accrued Interest of the bond i on trading day t (for the avoidance of doubt the index takes into account a settlement convention of t+3)

$ACCI_{i,t-1}$	=	Accrued Interest of the bond i on trading day t-1 (for the avoidance of doubt the index takes into account a settlement convention of t+3)
$Weighting_{t,i}$	=	weighting of the bond i on trading day t
$Amount_{SD,i}$	=	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 (for the avoidance of doubt the index takes into account a settlement convention of t+3) 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
$Cap_{i,SD}$	=	Parameter used to scale the weighting of bond i according to the rules described in 2.4 defined on Selection Day SD

3.2 Accuracy

The value of each index will be rounded to four 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 indexes do not take taxes into account and assume gross coupon payments. Each index assumes a settlement convention of t+3 for each bond.

4. Definitions

In particular an **“extraordinary event”** is:

- an early redemption of the bond;
- an exchange of a bond into another one; or
- a credit event.

A **“credit event”** is the suspension of debt service, insolvency or failure to pay.

“Ask price” is the Evaluated price submitted by the pricing source that indicates the price for which a seller will accept to sell.

A **“Business Day** in relation to the index is any day other than a Saturday or Sunday or a day on which the Investment Industry Association of Canada recommends that the fixed income departments of its members be closed for the entire day for purposes of trading in domestic bond and money markets.

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

“Corporate Universe” includes all bonds that fulfil the Selection Pool criteria of the Solactive Canadian Select Corporate Bond Index

“Government Universe” includes all government bonds that fulfil the Selection Pool criteria of the Solactive Canadian Select Universe Bond Index

The **“index currency”** is CAD for each index.

“Selection Day” is a business Day 7 business days prior to the Adjustment Day.

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

“Effective time to maturity” means the time in years until maturity or for callable or puttable bonds the time in years until the next call or put date

“Weighted Yield per Issuer” is calculated as the sum over (weight per bond in the Corporate Universe divided by the weight per issuer in the Corporate Universe multiplied with the yield of that specific bond) per that specific issuer.

“Weighted Duration per Issuer” is calculated as the sum over (weight per bond in the Corporate Universe divided by the weight per issuer in the Corporate Universe multiplied with the duration of that specific bond) per that specific issuer.

“Criteria Points” is the sum of the points received from the absolute deviation on duration and absolute deviation on yield as determined on the tables under 2.1.

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

5 Appendix

5.1 Contact Data

Information regarding the Solactive Canadian Select Universe Index Family concept

Solactive AG
Bettinastrasse 30
60325 Frankfurt am Main
Tel.: +49 69 9760 955 00
Fax: +49 69 9760 955 25
indexing@solactive.com

5.2 Calculation of an 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. 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.