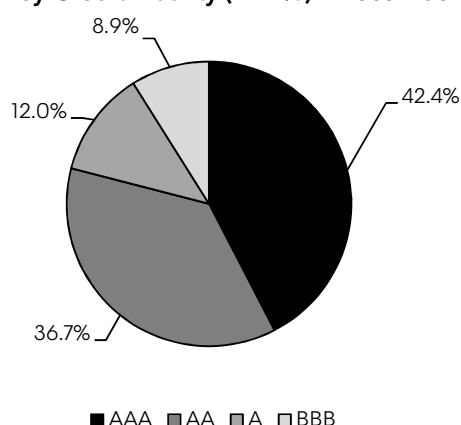


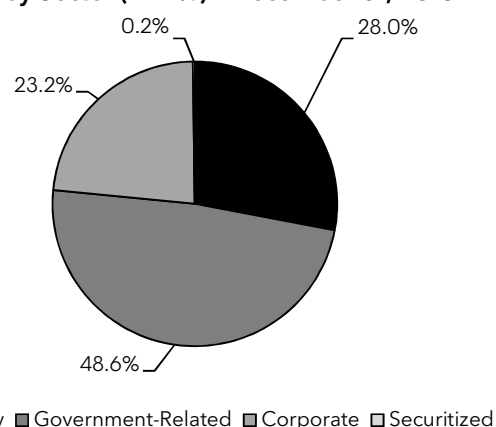
## Bloomberg Barclays MSCI Canada Aggregate ESG-Weighted Index

The Bloomberg Barclays MSCI Canada Aggregate ESG-Weighted Index is an investment-grade, Canadian dollar-denominated benchmark that uses environmental, social, and governance (ESG) ratings to tilt issuer allocations above or below their baseline market weights. Based on the Bloomberg Barclays Canada Aggregate Index, the ESG-Weighted index contains all the same securities as the Bloomberg Barclays Canada Aggregate Index, but reweights all index-eligible issuers to increase the overall ESG rating of the index. The index was launched in August 2018, with history backfilled to January 2008.

Composition by Credit Quality (MV %) - December 31, 2018



Composition by Sector (MV %) - December 31, 2018



### Rules for Inclusion

<b>Sector</b>	Treasury, government-related, corporate, and securitized bonds are included.
<b>Eligible Currencies</b>	Principal and coupon must be denominated in CAD.
<b>Quality</b>	<p>Securities must be rated investment grade (Baa3/BBB-/BBB-or higher) using the lower of the two middle ratings of Moody's, S&amp;P, Fitch and DBRS; when ratings from only three agencies are available, the middle is used; when a rating from only two agencies is available, the lower is used; when only one agency rates a bond, that rating is used. In cases where explicit bond level ratings may not be available, other sources may be used to classify securities by credit quality:</p> <ul style="list-style-type: none"> <li>Local currency treasury and hard currency sovereign issues are classified using the middle issuer-level local currency and hard currency debt ratings from each agency for all outstanding bonds, even if bond-level ratings are available.</li> <li>Expected ratings at issuance may be used to ensure timely index inclusion or to properly classify split-rated is</li> <li>Unrated securities may use an issuer rating for index classification purposes if available. Unrated subordinated securities are included if a subordinated issuer rating is available.</li> </ul> <p><i>Effective August 1, 2018, DBRS bond ratings will be employed in the determination of index credit quality classifications for CAD-denominated securities in the Canada Aggregate and Global Aggregate Indices. The new methodology will take four ratings into account, remove the highest and lowest ratings among the four, and then use the lower of the two remaining ratings to assign an index rating. If fewer than four ratings are available for a given security, the existing methodology using three or fewer ratings will be employed.</i></p>
<b>Amount Outstanding</b>	<p>CAD 150mn minimum par amount outstanding.</p> <p>On August 1, 2018, the minimum issue size for CAD-denominated debt changed from 300mn to 150mn.</p>
<b>Coupon</b>	<ul style="list-style-type: none"> <li>Fixed-rate coupon.</li> </ul>

## Rules for Inclusion

- Original zero coupon bonds are included.
- Callable fixed-to-floating rate bonds are eligible during their fixed-rate term only.
- Bonds with a step-up coupon that changes according to a predetermined schedule are eligible.

### Maturity

- At least one year until final maturity, regardless of optionality.
- Bonds that convert from fixed to floating rate, including fixed-to-float perpetual, will exit the index one year prior to conversion to floating-rate. Fixed-rate perpetual bonds are not included.
- Sub-indices based on maturity are inclusive of lower bounds. Intermediate maturity bands include bonds with maturities of 1 to 9.999 years. Long maturity bands include maturities of 10 years or greater.

### Taxability

- Only fully taxable issues are eligible.
- Dividend Received Deduction (DRD) and Qualified Dividend Income (QDI) eligible securities are excluded.

### Market of Issue

- Publicly issued in the global and regional markets.
- Private placements and retail issues are not eligible.

### Seniority of Debt

Senior and Subordinated issuers are included.

### Security Types

#### Included

- Bullet, puttable, sinkable/amortizing and callable bonds
- Senior and subordinated issues
- Original issue zero coupon and underwritten MTN programs
- Enhanced equipment trust certificates (EETC)
- Certificates of deposit
- Fixed-rate and fixed-to-float (including fixed-to-variable) capital securities
- Non-Viable Contingent Capital Bonds (NVCC)
- Bail-in Bonds

#### Excluded

- Contingent capital securities, including traditional CoCos and contingent write-down securities, with explicit capital ratio or solvency/balance sheet-based triggers
- Bonds with equity type features (e.g., warrants, convertibles, preferreds, DRD/QDI-eligible issues)
- Inflation-linked bonds, floating-rate issues
- Fixed-rate perpetuals
- Private placements, retail bonds
- Structured notes, pass-through certificates
- Illiquid securities with no available internal or third-party pricing source
- Euro MTN and Euro Non-Dollar

## Market Value Adjustments Based on ESG Rating and Momentum

### Factor Tilts

The weight of each index eligible issuer (and security) is adjusted by a fixed multiplier (see table), which is determined by its MSCI ESG Rating (AAA, AA, A, BBB, BB, B, CCC, NR) and its MSCI ESG Ratings momentum (Positive, Neutral, Negative since its last evaluation). Security weights are then normalized using these adjusted market values.

ESG Rating	Tilt	ESG Rating Momentum	Tilt
AAA,AA,A	1.5x	Positive	2.0x
BBB	1.0x	Neutral	1.0x
BB	0.8x	Negative	0.5x
B	0.67x		
CCC	0.50x		
NR	0.75x		
MBS/ABS/CMBS	1.0x		

### Timing and Coverage

- Factor tilts are based on beginning of the month ratings, so rating changes during the month would not affect index weights and returns until the next index rebalancing date.
- MSCI ESG Ratings are available for treasury, government-related, corporate, and covered bond issuers. They are not applied to MBS, ABS, and CMBS issues. However, all unrated issuers remain eligible for ESG-Weighted indices.

## Market Value Adjustments Based on ESG Rating and Momentum

- Ratings are applied at the Bloomberg Barclays ticker level, and every bond within the same ticker will have the same ESG Rating.
- MSCI ESG Ratings are generally updated annually throughout the year, but may be reviewed more frequently as needed.

## Rebalancing Rules

<b>Frequency</b>	For each index, Bloomberg maintains two universes of securities: the Returns (Backward) and the Projected (Forward) Universes. The composition of the Returns Universe is rebalanced at each month-end and represents the fixed set of bonds on which index returns are calculated for the next month. The Projected Universe is a forward-looking projection that changes daily to reflect issues dropping out of and entering the index but is not used for return calculations. On the last business day of the month (the rebalancing date), the composition of the latest Projected Universe becomes the Returns Universe for the following month.
<b>Index Changes</b>	During the month, indicative changes to securities (credit rating change, sector reclassification, amount outstanding changes, corporate actions, and ticker changes) are reflected daily in the Projected and Returns Universe of the index. These changes may cause bonds to enter or fall out of the Projected Universe of the index on a daily basis, but will affect the composition of the Returns Universe at month-end only, when the index is next rebalanced.
<b>Reinvestment of Cash Flows</b>	Intra-month cash flows from interest and principal payments contribute to monthly index returns but are not reinvested at a short-term reinvestment rate between rebalance dates. At each rebalancing, cash is effectively reinvested into the Returns Universe for the following month so that index results over two or more months reflect monthly compounding.
<b>New Issues</b>	Qualifying securities issued, but not necessarily settled on or before the month-end rebalancing date, qualify for inclusion in the following month's index if the required security reference information and pricing are readily available.

## Pricing and Related Issues

<b>Sources &amp; Frequency</b>	Index eligible bonds are priced on a daily basis by Bloomberg's evaluated pricing service, BVAL.
<b>Pricing Quotes</b>	Bonds can be quoted in a variety of ways, including nominal spreads over benchmark securities/treasuries, spreads over swap curves, or direct price quotes as a percentage of par. For securities quoted on a spread basis, daily security price changes will result from movements in the underlying curve (swap or treasury) and/or changes in the quoted spread.
<b>Timing</b>	4pm (Toronto time)
<b>Bid or Offer Side</b>	Bonds in the index are priced on the bid side.
<b>Settlement Assumptions</b>	T+1 calendar day settlement basis for all bonds except MBS, which use same-day settlement. At month-end, settlement is assumed to be the first calendar day of the following month, even if the last business day is not the last day of the month, to allow for one full month of accrued interest to be calculated.
<b>Verification</b>	Daily price moves for each security are analyzed by the index pricing team to identify outliers. Index users may also challenge price levels, which are then reviewed and updated as needed using input from various sources.
<b>Currency Hedging</b>	Returns hedged to various currencies are published for the Canada Aggregate SRI Index. The indices' FX hedging methodology takes rolling one-month forward contracts that are reset at the end of each month and hedges each non-reporting currency-denominated bond in the index into the reporting currency terms. No adjustment is made to the hedge during the month to account for price movements of constituent securities in the Returns Universe of the index.
<b>Calendar</b>	The Canada Aggregate ESG-Weighted Index follows the Canada bond market calendar.

January 15, 2019

### Monthly Returns in CAD, 2008-2018(%)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2008	0.56	1.31	1.15	-0.55	-0.15	0.02	0.86	0.78	-1.91	-0.76	2.75	3.12	7.29
2009	-1.05	0.42	1.97	-0.36	-0.58	1.30	0.60	0.88	0.94	0.03	1.21	-1.54	3.84
2010	1.85	0.04	-0.66	-0.07	1.42	1.62	0.51	1.97	0.76	0.05	-1.10	0.18	6.73
2011	-0.70	0.28	-0.02	0.80	1.56	-0.05	2.33	1.07	2.17	-0.39	0.52	1.85	9.77
2012	0.43	-0.47	-0.38	0.10	1.97	-0.03	0.79	-0.16	0.77	-0.29	0.58	-0.19	3.15
2013	-0.78	0.92	0.46	1.12	-1.56	-2.00	0.16	-0.65	0.51	0.96	-0.21	-0.48	-1.59
2014	2.59	0.34	-0.24	0.51	1.29	0.22	0.69	1.11	-0.74	0.59	1.56	0.65	8.88
2015	4.77	-0.13	-0.36	-1.40	0.16	-0.54	1.46	-0.97	-0.22	-0.29	0.05	1.19	3.65
2016	0.37	0.35	0.64	-0.08	0.95	1.87	1.00	0.01	0.25	-1.02	-2.20	-0.56	1.55
2017	-0.25	0.88	0.48	1.44	0.88	-1.25	-1.94	1.44	-1.33	1.71	0.76	-0.38	2.38
2018	-0.89	0.15	0.81	-0.91	0.80	0.65	-0.79	0.70	-0.96	-0.64	1.06	1.37	1.30

## Accessing Index Data

### Bloomberg Terminal®

Bloomberg benchmarks are the global standard for capital markets investors.

- INDEX<Go> - The Bloomberg Indices landing page is a dashboard for index-related information on the terminal. Find daily and monthly index returns for key indices from each index family as well as index publications including methodologies, factsheets, monthly reports, updates and alerts.
- IN<Go> - The Bloomberg Index Browser displays the latest performance results and statistics for the indices as well as history. IN presents the indices that make up Bloomberg's global, multi-asset class index families into a hierarchical view, facilitating navigation and comparisons. The "My Indices" tab allows a user to focus on a set of favorite indices.
- PORT<Go> - Bloomberg's Portfolio & Risk Analytics solution includes tools to analyze the risk, return, and current structure of indices. Analyze the performance of a portfolio versus a benchmark or use models for performance attribution, tracking error analysis, value-at-risk, scenario analysis, and optimization.
- DES<Go> - The index description page provides transparency into an individual index including membership information, aggregated characteristics and returns, and historical performance.

### Bloomberg Indices Website (www.bloomberg.com/ professional/product/indices)

The index website makes available limited index information including:

- Index methodology and factsheets
- Current performance numbers for select indices

### Data Distribution

Index subscribers may choose to receive index data in files. Files may include:

- Index level and/or constituent level returns and characteristics for any indices
- Automatic delivery of files via email or SFTP following the completion of the index production process after market close
- Clients may receive standard files or may customize file contents
- Index data is also available via authorized redistributors

## Bloomberg Total Return Index Value Tickers: Canada Aggregate ESG-Weighted Index and Related Indices

Ticker (CAD Unhedged)	Index	Ticker (CAD Unhedged)	Index
I34175CA	Canada Aggregate ESG-Weighted Index	I34217CA	Canada Aggregate Sustainability Index
I34224CA	Canada Aggregate SRI Index	I05486CA	Canada Aggregate

Total Return Index Values are available in other currencies and on a hedged basis. Attributes such as yield and duration, are also available. Please refer to Accessing Bloomberg Barclays Index Data Using Bloomberg Tickers for a full list of tickers and attributes that are available.

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January 15, 2019

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