

# FTSE Canada Corporate ESG Risk- Adjusted Bond Index

v1.0



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## Section 1

# Introduction

## 1. Introduction

### 1.1 FTSE Canada Corporate ESG Risk-Adjusted Bond Index

- 1.1.1 The Index is designed to reflect the performance of the FTSE Canada All Corporate Bond Index (a sub-index of FTSE Canada Universe Bond Index) with weighting of security market values based on Refinitiv ESG scores.
- 1.1.2 The FTSE Canada Corporate ESG Risk-Adjusted Bond Index incorporates a tilting methodology to adjust the index weights of eligible bonds according to each issuer's relative Environmental, Social and Governance (ESG) score. The weight of each bond is based on the market capitalization of its index-eligible debt and its relative ESG performance, measured across three distinct and quantitative Environmental, Social and Governance pillars (E, S and G pillars).
- 1.1.3 The Index Series follows the daily rebalancing mechanics of standard FTSE Canada All Corporate Bond Index with respect to constituent eligibility. The rebalanced market value weights for each issuer are then re-tilted daily by their respective Refinitiv ESG scores<sup>1</sup>. These ESG scores are refreshed on a quarterly basis using updated data from Refinitiv.<sup>2</sup> For each issuer, the ESG scores of its latest available Financial Year (FY) will be applied.
- 1.1.4 Issuers' ESG scores are compared on a relative basis across its corporate sectors, under FTSE Canada Sector Classification. Each of the E, S and G pillar score will be used to reweight the issuer's exposure in the index to provide larger exposures to issuers that have a higher score, and smaller exposures to issuers that have a lower score.
- 1.2 The FTSE Canada Corporate ESG Risk-Adjusted Bond Index takes account of ESG factors in its index design.

### 1.3 FTSE Russell

FTSE Russell is a trading name of FTSE International Limited, Frank Russell Company, FTSE Global Debt Capital Markets Limited (and its subsidiaries FTSE Global Debt Capital Markets Inc. and FTSE Fixed Income Europe Limited), FTSE Fixed Income LLC, FTSE (Beijing) Consulting Limited, Refinitiv Benchmark Services (UK) Limited, Refinitiv Limited and Beyond Ratings.

- 1.3.1 FTSE hereby notifies users of the index that it is possible that circumstances, including external events beyond the control of FTSE, may necessitate changes to, or the cessation of, the index and therefore, any financial contracts or other financial instruments that reference the index or investment funds which use the index to measure their performance should be able to withstand, or otherwise address the possibility of changes to, or cessation of, the index.
- 1.3.2 Index users who choose to follow this index or to buy products that claim to follow this index should assess the merits of the index's rules-based methodology and take independent investment advice before investing

<sup>1</sup> Refinitiv ESG Scoring Methodology: [Environmental, Social and Governance \(ESG\) Scores from Refinitiv](#)

<sup>2</sup> E, S and G pillar scores are published on Refinitiv. The data will be retrieved on the second Friday of January, April, July and October, and applied to the index profile on the last business day of January, April, July and October. For example, scores applied on the last business day of January will remain static as E, S and G pillar inputs until the last business day of April.

their own or client funds. No liability whether as a result of negligence or otherwise is accepted by FTSE nor its subsidiary undertakings (or any person concerned with the preparation or publication of these Ground Rules) for any losses, damages, claims and expenses suffered by any person as a result of:

- any reliance on these Ground Rules, and/or
- any inaccuracies in these Ground Rules, and/or
- any non-application or misapplication of the policies or procedures described in these Ground Rules, and/or
- any inaccuracies in the compilation of the Index or any constituent data

## 1.4 Index Ratings<sup>3</sup>

1.4.1 Bonds in the index are classified into broad credit rating categories of AAA/AA, A, and BBB, based on publicly available information from Dominion Bond Rating Service, Standard and Poor's, Moody's Investors Service and Fitch. The index does not distinguish between minor ratings notches, such as plus or minus signs or their equivalent within a broad letter category. Thus, the ratings A+, A-, and A are viewed as equivalent for the purposes of the index. As well, the index does not take into account a rating agency's outlook for a credit rating, or whether a particular rating may be under review by an agency.

In cases where the agencies do not agree on the credit rating, the bond will be classified according to the following rules:

- If two agencies rate a security, use the lower of the two ratings;
- If three agencies rate a security, use the middle of the three ratings;
- If four agencies rate a security, use the middle of the three lowest ratings

These rules mean that a bond rated by two or more agencies must have at least two investment grade credit ratings to be eligible for the Universe Bond Index. For example, a new issue rated BBB- by S&P and BB+ by DBRS would be assigned a rating of BB for the purposes of the index and would not be eligible for inclusion in the index.

1.4.2 An issuer rating may be applied for bonds classified as Government or Financial if security-level ratings are not available.

## 1.5 Capital Index (also known as the Price Index or the Clean Price Index)

1.5.1 The capital index tracks the notional weighted average change in the prices of the index constituents and is calculated every business day.

## 1.6 Total Return Index (also known as the Performance Index)

1.6.1 A total return index is calculated for all the indices. A total return index takes into account the price changes and interest accrual and payments of each index constituent.

1.6.2 In addition to the Capital Index and Total Return Index, the following index analytics are also calculated:

- Average Coupon
- Average Yield to Maturity
- Average Time to Maturity
- Value of 01
- Average Macaulay Duration
- Average Modified Duration
- Average Convexity

<sup>3</sup> Effective 15 April 2019

- The sum of the nominal value of all bonds in each index
  - The number of bonds in each Index, and
  - The weight of the index in relation to its relevant aggregated index (when applicable)
- 1.7 The base currency of the benchmark is Canadian Dollars (CAD).

## Section 2

# Management responsibilities

## 2. Management responsibilities

### 2.1 FTSE International Limited (FTSE)

2.1.1 FTSE is the benchmark administrator of the index.<sup>4</sup>

2.1.2 FTSE is responsible for the daily calculation, production and operation of the FTSE Canada Corporate ESG Risk-Adjusted Bond Index and will:

- maintain records of all the constituents;
- be responsible for the addition and deletion of bonds and changes of nominal amounts, in accordance with the Ground Rules.

2.1.3 These Ground Rules set out the methodology and provide information about the publication of the FTSE Canada Corporate ESG Risk-Adjusted Bond Index Series.

### 2.2 FTSE Canada Fixed Income Advisory Committee

2.2.1 The FTSE Canada Fixed Income Advisory Committee is established by FTSE Russell.

2.2.2 The purpose of the Committee is to provide a forum for FTSE Russell to interact with index users and other stakeholders with a view to enhancing the underlying methodologies of FTSE Russell indices.

2.2.3 The Terms of Reference of the FTSE Canada Fixed Income Advisory Committee are set out on the FTSE Russell website and can be accessed using the following link:

[FTSE Canada Fixed Income Advisory Committee.pdf](#)

### 2.3 Amendments to these Ground Rules

2.3.1 These Ground Rules shall be subject to regular review (at least once a year) by FTSE Russell to ensure that they continue to best reflect the aims of the index. Any proposals for significant amendments to these Ground Rules will be subject to consultation with FTSE Russell advisory committees and other stakeholders if appropriate. The feedback from these consultations will be considered by the FTSE Russell Index Governance Board before approval is granted.

2.3.2 As provided for in the Statement of Principles for FTSE Fixed Income Indices, where FTSE Russell determines that the Ground Rules are silent or do not specifically and unambiguously apply to the subject matter of any decision, any decision shall be based as far as practical on the Statement of Principles. After making any such determination, FTSE Russell shall advise the market of its decision at the earliest opportunity. Any such treatment will not be considered as an exception or change to the Ground Rules, or to set a precedent for future action, but FTSE Russell will consider whether the Rules should subsequently be updated to provide greater clarity.

<sup>4</sup> The term administrator is used in this document in the same sense as it is defined in [Regulation \(EU\) 2016/1011 of the European Parliament and of the Council of 8 June 2016 on indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds](#) (the European Benchmark Regulation) and [The Benchmarks \(Amendment and Transitional Provision\) \(EU Exit\) Regulations 2019](#) (the UK Benchmark Regulation).

## Section 3

# FTSE Russell index policies

### 3. FTSE Russell index policies

These Ground Rules should be read in conjunction with the following policy documents which can be accessed using the links below:

#### 3.1 Queries and Complaints

FTSE Russell's complaints procedure can be accessed using the following link:

[Benchmark Determination Complaints Handling Policy.pdf](#)

#### 3.2 Statement of Principles for FTSE Fixed Income Indices (the Statement of Principles)

Indices need to keep abreast of changing markets and the Ground Rules cannot anticipate every eventuality. Where the Ground Rules do not fully cover a specific event or development, FTSE Russell will determine the appropriate treatment by reference to the Statement of Principles for FTSE Fixed Income Indices which summarises the ethos underlying FTSE Russell's approach to index construction. The Statement of Principles is reviewed annually and any changes proposed by FTSE Russell are presented to the FTSE Russell Policy Advisory Board for discussion before approval by the FTSE Russell Index Governance Board.

The Statement of Principles for Fixed Income Indices can be accessed using the following link:

[Statement of Principles Fixed Income Indices.pdf](#)

#### 3.3 Recalculation Policy and Guidelines

The Recalculation Policy and Guidelines for Fixed Income Indices document is available from the FTSE Russell website using the link below or by contacting [fi.index@lseg.com](mailto:fi.index@lseg.com).

[Fixed Income Recalculation Policy and Guidelines.pdf](#)

#### 3.4 Index Policy in the Event Clients are Unable to Trade a Market or a Security

Details of FTSE Russell's treatment can be accessed using the following link:

[Index Policy in the Event Clients are Unable to Trade a Market or a Security.pdf](#)

#### 3.5 Policy for Benchmark Methodology Changes

3.5.1 Details of FTSE Russell's policy for making benchmark methodology changes can be accessed using the following link:

[Policy for Benchmark Methodology Changes.pdf](#)

### **3.6 FTSE Russell Governance Framework**

3.6.1 To oversee its indices, FTSE Russell employs a governance framework that encompasses product, service and technology governance. The framework incorporates the London Stock Exchange Group's three lines of defence risk management framework and is designed to meet the requirements of the IOSCO Principles for Financial Benchmarks<sup>5</sup>, the European benchmark regulation<sup>6</sup> and the UK benchmark regulation<sup>7</sup>. The FTSE Russell Governance Framework can be accessed using the following link:

[FTSE Russell Governance Framework.pdf](#)

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<sup>5</sup> IOSCO Principles for Financial Benchmarks Final Report, FR07/13 July 2013.

<sup>6</sup> Regulation (EU) 2016/1011 of the European Parliament and of the Council of 8 June 2016 on indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds.

<sup>7</sup> The Benchmarks (Amendment and Transitional Provision) (EU Exit) Regulations 2019.



## Section 4

# Eligibility criteria

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## 4. Eligibility criteria

### 4.1 Eligible bonds

4.1.1 The base universe for the FTSE Canada Corporate ESG Risk-Adjusted Bond Index is the market capitalization weighted FTSE Canada All Corporate Bond Index, a sub-index of the FTSE Canada Universe Bond Index. The FTSE Canada All Corporate Bond Index measures the performance of CAD investment-grade fixed-rate corporate bonds in Canada. To be eligible for the FTSE Canada Corporate ESG Risk-Adjusted Bond Index, bonds must meet the eligibility criteria of FTSE Canada All Corporate Bond Index.

### 4.2 Exclusions

4.2.1 For controversial conduct, issuers who are non-compliant with UN Global Compact (UNGC) Principles will be excluded.

4.2.2 For product involvement, issuers generating revenues from Tobacco, Controversial Weapons, or Thermal Coal Extraction will be excluded. See Appendix B for more details.

## Section 5

# Price sources

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## 5. Price sources

5.1.1 Constituent prices are provided by CanDeal Data and Analytics (“CanDeal DNA”) in accordance with its Composite pricing methodology.<sup>8</sup>

5.1.2 Prices in the FTSE Canada Bond Index Series represent a mid-side price as of 4:00 pm (Toronto time), unless otherwise stated in published index methodologies.

### 5.2 Verification and price challenges

5.2.1 Statistical techniques are used to identify pricing anomalies based on day-over-day changes and comparisons across peer groups by maturity, asset type, etc.

5.2.2 Any price challenges from index users and possible outliers from the verification process are reviewed with our third-party pricing provider.

5.2.3 In the event that an issue is not able to be resolved in a timely manner, FTSE Russell may exercise expert judgement and roll prices from the previous day. Any exercise of expert judgement is recorded.

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<sup>8</sup> The change from the use of the FTSE Canada Multi Dealer Pricing Methodology to use the CanDeal DNA composite pricing methodology was announced on 22 January 2022 and effective from 17 May 2022.

## Section 6

# Sustainable investment data inputs

## 6. Sustainable investment data inputs

### 6.1 The following Sustainable Investment datasets are used in the construction of the indices.

SI data inputs	Details	Used for selection, weighting or exclusion <sup>9</sup>
<b>Product related data-Sustainalytics</b>	Sustainalytics Product Involvement data identifies the nature and extent of a company's involvement in a range of product and business activities. More information can be found here: <a href="https://www.sustainalytics.com/investor-solutions/esg-research/esg-screening/esg-criteria">https://www.sustainalytics.com/investor-solutions/esg-research/esg-screening/esg-criteria</a>	Exclusion
<b>Refinitiv ESG Scores</b>	Refinitiv ESG scores measure a company's ESG performance based on publicly reported data. More information can be found: <a href="https://www.refinitiv.com/en/sustainable-finance/esg-scores#methodology">https://www.refinitiv.com/en/sustainable-finance/esg-scores#methodology</a>	Weighting

### 6.2 Further information on SI data provided by FTSE Russell and third parties used in this index (index series) can be found in the following guide:

[Guide to FTSE and Third Party Sustainable Investment Data used in FTSE Russell Indices](#)

This includes information on the data and standards used for these SI data inputs. These data sets may include estimated data.

<sup>9</sup> Definitions

Selection- SI data is used to select or rank constituents, or calculate minimum scores or thresholds

Weighting- SI data is used to calculate the weight of a constituent in an index

Exclusion- SI data is used to exclude securities from the index

## Section 7

# Index rebalancing

## 7. Index rebalancing

### 7.1 Rebalancing the Index

- 7.1.1 The indices are rebalanced on a daily basis, in line with the underlying FTSE Canada All Corporate Bond Index.
- 7.1.2 The E, S and G scores for each issuer are updated on a quarterly basis. On the second Friday of January, April, July and October (or prior business day if the Friday is a holiday), all eligible issuers in FTSE Canada Corporate ESG Risk-Adjusted Bond Index will be reviewed for updated E, S and G scores from Refinitiv from latest available Financial Year, and the scores will be applied on the last business day of January, April, July and October.
- 7.1.3 Between the quarterly updates, the E, S and G scores applied for each issuer is static, with the ESG tilting factor applied daily. See Section 7.5 for more details on the tilting methodology.
- 7.1.4 Each issuer will be reviewed for ESG coverage from Refinitiv. If there is no direct coverage for an issuer, the E, S and G scores of its nearest public issuer, if any, will be applied. If there is no coverage for its nearest public issuer, the E, S and G scores of its ultimate parent issuer, if any, will be applied. If there is no E, S and G coverage at all levels, the issuer will be considered as no coverage, and be applied the average score within its corporate sector. This is equivalent to a market-neutral treatment, i.e. the market weight of the issuer will remain the same in FTSE Canada Corporate ESG Risk-Adjusted Bond Index as the FTSE Canada All Corporate Bond Index.
- 7.1.5 If an entire corporate sector has no coverage, the sector will remain the same market weight in FTSE Canada Corporate ESG Risk-Adjusted Bond Index as the FTSE Canada All Corporate Bond Index.

### 7.2 Addition of constituents

- 7.2.1 A new issue enters the index on/after the day it is issued or auctioned (when all eligibility criteria are verified). The bond is included in the calculation of index risk statistics such as duration on the day of issue, though it does not affect the return on the index until the following business day. The new security does not begin to accrue interest until the new issue settlement date. The cut-off time for inclusion on the day of issue is 3:00pm EST.
- 7.2.2 For new issues, if the issuer was previously covered by Refinitiv with E, S and G scores as of last quarterly review, the last available scores for the issuer will be applied until the next quarterly ESG score update. If the issuer was not previously covered by Refinitiv, it will be applied the average score within its corporate sector until the next quarterly ESG score update.

### 7.3 Removal of constituents

- 7.3.1 A bond is removed from the index on the same day it exits from the FTSE Canada All Corporate Bond Index. Realized coupon and redemption income, is reinvested daily across all bonds in the index in proportion to their market values.
- 7.3.2 Any change in product involvement identified by Sustainalytics product involvement research is reflected at the last business day of each month. If a bond is identified to be involved in Tobacco, Controversial

Weapons, or Thermal Coal Extraction (>50% revenue only), or confirmed to be not UNGC-compliant, it will exit the index on the last business day of the month.

#### 7.4 ESG pillar scoring

7.4.1 For each E, S and G pillar, scores are converted into z-scores relative to the corporate sectors in the FTSE Canada All Corporate Bond Index.

$$Z_i = (F_i - \mu) / \sigma$$

where  $F_i$  is Country E, S, G Score of the  $i^{th}$  issuer and  $\mu$  and  $\sigma$  are the cross-sectional mean and standard deviation respectively. Z-Scores are mapped to a score  $E_i \in [0, 1]$ ,  $S_i \in [0, 1]$ ,  $G_i \in [0, 1]$ , using the cumulative normal distribution with mean zero and standard deviation one. An additional linearization process is applied to the s-score between 0.1 and 1 to introduce a floor for any given pillar.

#### 7.5 Tilting methodology

7.5.1 An ESG tilt factor is calculated for each issuer and applied to the market value weight of each security in the underlying index to derive the adjusted weights<sup>10</sup>.

7.5.2 First, the three E, S and G pillars are combined to derive an ESG tilt factor for each issuer:

$$ESG = E^\alpha \times S^\beta \times G^\gamma$$

where,

$E$ , is the issuer's Environment Pillar Score

$S$ , is the issuer's Social Pillar Score

$G$ , is the issuer's Governance Pillar Score

$\alpha$ , is the E tilt power

$\beta$ , is the S tilt power

$\gamma$ , is the G tilt power

$ESG$ , is the final ESG tilt factor for the issuer

For the FTSE Canada Corporate ESG Risk-Adjusted Bond Index, the tilt power applied is 1/1/1 for E/S/G pillars.

The ESG tilt factors are then applied to each security's market value weight in the underlying index to derive the adjusted weights:

$$\theta_i = \frac{\omega_i ESG_i}{\sum_{i=0}^n (\omega_i ESG_i)}$$

where,

$\omega$ , is the issuer's market value weight in the underlying index

$\theta$ , is the issuer's weight in the ESG Index

<sup>10</sup> A similar tilting methodology to that employed in the FTSE Global Factor Index Series is used with some modifications to cater for the differences between equity and fixed income indices.

## Appendix A

# Index family structure

The table below describes the schema used to classify the index constituents and for the derivation of sub-indices:

Level 1	Level 2	Level 3
Corporate	Communication	Media
		Telecommunication
	Energy	Distribution
		Exploration
		Generation
		Integrated
		Pipelines
	Financial	Auto Finance
		Bank
		Insurance
		Financial Services
	Industrial	Consumer
		Diversified
		Manufacturing
		Resources
		Services
		Transportation
	Infrastructure	Health
		Transportation
Utility		
Education		
Real Estate	NonREIT	
	REIT	
Securitization	ABS	
	CMBS	
Government	Federal	Non-Agency
		Agency
		Supranational
	Municipal	-

Level 1	Level 2	Level 3
	Provincial	Alberta British Columbia Manitoba New Brunswick Newfoundland Nova Scotia Ontario PEI Saskatchewan Quebec Yukon

## Appendix B

# Exclusions

Exclusions	Threshold
<b>Controversial Weapons (Anti-personnel mines, cluster weapons, biological and chemical weapons, depleted uranium, and white phosphorus munitions)</b>	
Companies involved in the core weapon system that are considered tailor made and essential for the lethal use of the weapons.	Greater than 0% of revenues
<b>Tobacco</b>	
Companies manufacturing tobacco products	Greater than 0% of revenues
Companies that derive revenue from the distribution and/or retail sale of tobacco products.	Equal to or greater than 10% of revenues
<b>UNGC Controversies</b>	
Companies involved in controversies related to the UNGC principles. The principles are classified into four categories: Human Rights, Labor, Environment and Anti-corruption.	All companies deemed to be non-compliant
<b>Thermal Coal</b>	
Extraction: involvement in the extraction of thermal coal.	Greater than 50% of revenues



## Appendix C

# Index calculations

The following notation is used in the following calculations:

$P_{i,t}$	clean price of a constituent bond $i$ on valuation day $t$
$A_{i,t}$	accrued interest of a constituent bond $i$ as of valuation day $t$
$N_{i,t}$	nominal value of a constituent bond $i$ on valuation day $t$
Coupon <sub><math>i</math></sub>	coupon rate of a constituent bond $i$
$y_{i,t}$	yield to maturity of a constituent bond $i$ as of valuation day $t$
MacDur <sub><math>i,t</math></sub>	Macaulay duration of a constituent bond $i$ as of valuation day $t$
ModDur <sub><math>i,t</math></sub>	Modified duration of a constituent bond $i$ as of valuation day $t$
Dval01 <sub><math>i,t</math></sub>	Dollar duration of a constituent bond $i$ as of valuation day $t$
Convexity <sub><math>i,t</math></sub>	Convexity of a constituent bond $i$ as of valuation day $t$
$C_{i,t}$	value of any coupon payment received from the bond $i$ for the assumed settlement date at time $t$ . If none the value = 0

### Clean Price Index (Capital Index)

The clean price ( $P$ ) or capital index is given by

$$PI_{i,0} = 100$$

$$PI_{i,t} = PI_{i,t-1} \times \frac{\sum_i P_{i,t} \times N_{i,t-1}}{\sum_i P_{i,t-1} \times N_{i,t-1}}$$

### Total Return Index

The total return index ( $TR$ ) is given by

$$TRI_{i,0} = 100$$

$$TRI_{i,t} = TRI_{i,t-1} \times \frac{\sum_i (P_{i,t} + A_{i,t} + C_{i,t}) \times N_{i,t-1}}{\sum_i (P_{i,t-1} + A_{i,t-1}) \times N_{i,t-1}}$$

where Cash <sub>$t$</sub>  is given by:

$$\text{Cash}_t = \text{Cash}_{t-1} \left[ \frac{pr_t}{pr_{t-1}} \right] + \sum_i R_{i,t}$$

## Appendix D

# Further information

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A Glossary of Terms used in FTSE Russell's Ground Rule documents can be found using the following link:

[Fixed Income Glossary of Terms.pdf](#)

For further information on the FTSE Canada Corporate ESG Risk-Adjusted Bond Index Ground Rules please visit [www.ftserussell.com](http://www.ftserussell.com) or e-mail [fi.index@lseg.com](mailto:fi.index@lseg.com). Contact details can also be found on this website.

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