Ground Rules

August 2023

FTSE Canada Strip Bond Index

v3.4



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Section 1 Introduction

1. Introduction

1.1 FTSE Canada Strip Bond Index

- 1.1.1 This document sets out the Ground Rules for the construction and management of the FTSE Canada Strip Bond Index.
- 1.1.2 The FTSE Canada Strip Bond Index is designed to reflect the performance of the Canadian strip market. A strip bond is created from existing conventional bonds by a trustee who, following deposit of the bond, separates each of the coupon payments, as well as the principal payment, from one another. Following the stripping process, each cash flow (piece of the original bond) can trade and is registered as a separate security, allowing the holder to receive a single known payment on a specific date.
- 1.1.3 The FTSE Canada Strip Bond Index does not take account of ESG factors in its index design.
- 1.1.4 The base currency of the benchmark is Canadian Dollars (CAD).

1.2 IOSCO

1.2.1 FTSE International Limited (FTSE) considers that the FTSE Canada Strip Bond Index meets the IOSCO Principles for Financial Benchmarks as published in July 2013.

Full details can be accessed at www.iosco.org.

Details of FTSE Russell's Statement of Compliance with respect to the IOSCO Principles can be accessed through the following link:

IOSCO Statement of Compliance

- 1.3 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.
- 1.4 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 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.

1.5 FTSE Russell

1.5.1 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.

1.6 Index series objectives

1.6.1 The FTSE Canada Strip Bond Index is designed to be a broad measure of the Canadian investment-grade fixed income strip marketplace.

1.7 Major sub-indices

- 1.7.1 A sub-index will be created if a sufficient number of eligible constituents for that sub-index exist. All indices have the following three maturity sub-indices:
 - Short (5 years and under)
 - Mid (5-10 years)
 - Long (over 10 years)

Additionally, the FTSE Canada Strip Bond Index is broken down into the following maturity sub-indices:

- 1-3, 3-7, 7-10, 10-15, 15-20, 20-25, 25-30, 30+ Years
- 1-10, 10-20, 20-30 Years
- 1.7.2 The FTSE Canada Strip Bond Index is also split into sub-indices based on the issuer classification of each bond. The government segment is divided into Federal and Provincial sectors.
- 1.7.3 The FTSE Canada Strip Bond Index is not classified into the broad credit rating categories of AAA/AA, A, and BBB, due to the lack of coverage of individual stripped issues from the rating agencies.
- **1.8 Capital index** (also known as the Price Index or the Clean Price Index)
- 1.8.1 The capital index tracks the notional weighted average change in the prices of the index constituents and is calculated every business day.

1.9 Other calculations

- 1.9.1 A total return index is not calculated for the strip bond index since these are zero coupon securities.
- 1.9.2 In addition to the capital Index, the following index analytics are also calculated:
 - Average yield to maturity
 - Average time to maturity
 - Value of 01
 - Average Macaulay duration
 - Average modified duration
 - Average convexity
 - 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).

Section 2 Management responsibilities

2. Management responsibilities

2.1 FTSE International Limited (FTSE)

- 2.1.1 FTSE is the benchmark administrator of the index.¹
- 2.1.2 FTSE is responsible for the daily calculation, production and operation of the FTSE Canada Universe Bond Index Series and will:
 - maintain records of all the constituents, and
 - 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 Strip Bond Index.

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 through 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 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.

¹ The term administrator is used in this document in the same sense as it is defined in <u>Regulation (EU) 2016/1011 of the European Parliament and of the Council of 8 June 2016 on</u> indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds (the European Benchmark Regulation) and <u>The</u> <u>Benchmarks (Amendment and Transitional Provision) (EU Exit) Regulations 2019</u> (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 through the links below:

3.1 Queries and Complaints

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

FTSE_Russell_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 through 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 through the link below or by contacting <u>fi.index@lseg.com</u>.

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 through 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 through 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 Benchmarks², the European benchmark regulation³ and the UK benchmark regulation⁴. The FTSE Russell Governance Framework can be accessed through the following link:

FTSE Russell Governance Framework.pdf

3.7 Real Time Status Definitions

3.7.1 Please refer to the following guide for details of real time status definitions for indices that are calculated in real time.

Real Time Status Definitions.pdf

² IOSCO Principles for Financial Benchmarks Final Report, FR07/13 July 2013.

³ 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.

⁴ The Benchmarks (Amendment and Transitional Provision) (EU Exit) Regulations 2019.

Section 4 Eligibility criteria

4. Eligibility criteria

4.1 Eligible bonds

4.1.1 The FTSE Canada Strip Bond Index consists of Government issued Coupons and Residual (also known as Strip or Zero Coupon) bonds stripped from bonds issued domestically in Canada and denominated in Canadian dollars, with a remaining effective term to maturity of greater than one year. The majority of the Strip Bonds in the index are stripped from semi-annual pay bullet securities with no call or other option features. However, the index may also include stripped issues from the following types of bonds: callable bonds, extendible/retractable bonds, sinking funds and exchangeable bonds. Strip Bonds with option features are assigned to index term sectors based on their effective maturity date (either the option exercise date or the final maturity date). Although most bonds in the index are public issues, private issues that meet the above criteria are also eligible for inclusion.

4.2 Exclusions

- 4.2.1 The Strip Bond Index does not include stripped issues from: floating-rate notes, convertible bonds, residential and commercial mortgage-backed securities (CMBS and MBS), other monthly-pay securities, pre-payable securities, inflation-indexed securities, or securities specifically targeted to the retail market. It also excludes securities that are not priced, which would typically be securities that are closely held and do not trade. The Strip Bond Index specifically excludes stripped issues from corporate bonds, due to the lack of liquidity in this small market segment.
- 4.2.2 Regulatory capital that counts towards Additional Tier 1 (AT1) debt for deposit taking institutions, Tier 1 capital for life insurers, Category B capital for property and casualty, and mortgage insurers is excluded.
- 4.2.3 In order to be eligible for the indices bonds must have a price assigned from a price source as specified in Section 5 of these Ground Rules.

4.3 Minimum issue size

- 4.3.1 The following minimum sizes apply for index inclusion:
 - \$50 Million for Federal and/or Provincial and/or Municipal Government bonds

Section 5 Price sources

5. Price sources

- 5.1 Constituents prices are provided by CanDeal Data and Analytics ("CanDeal DNA") in accordance with its Composite pricing methodology⁵.
- 5.2 Prices in the FTSE Canada Bond Index Series represent a mid-side price as of 4:00pm (Toronto time), unless otherwise stated in published index methodologies.

5.3 Verification and price challenges

- 5.3.1 Statistical techniques are used to identify pricing anomalies based on day-over-day changes and comparisons across peer groups by maturity, asset type, etc.
- 5.3.2 Any price challenges from index users and possible outliers from the verification process are reviewed with our third-party pricing provider.
- 5.3.3 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.

⁵ 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 Periodic change to the portfolios

6. Periodic change to the portfolios

6.1 Rebalancing the indices

6.1.1 The FTSE Canada Strip Bond Index is rebalanced on the first business day of each month.

6.2 Addition of constituents

6.2.1 New issues are added to the index if they meet eligibility requirements above according to data provided by CDS (Canadian Depository for Securities) for the Canadian Strip marketplace.

6.3 Removal of constituents

6.3.1 A strip bond is removed from the index on the day its remaining effective term to maturity declines to one calendar year, whether that year has 365 or 366 days.

For a Strip Bond with embedded option features, the rule for rolling out of the index, is based on effective term (either the option exercise date, or the final maturity date).

Appendix A 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
N _{i,t}	nominal value of a constituent bond i on valuation day t
y i,t	yield to maturity of a constituent bond i as of valuation day t
MacDur _{i,t}	Macaulay duration of a constituent bond \boldsymbol{i} as of valuation day \boldsymbol{t}
ModDur _{i,t}	modified duration of a constituent bond i as of valuation day t
Dval01 _{i,t}	Dollar duration of a constituent bond i as of valuation day t
Convexity _{i,t}	convexity of a constituent bond i as of valuation day t

Total return index

As there is no coupon income, the Total Return Index (TRI) is equivalent to the Clean Price Index (PI), which is given by:

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

Average yield to maturity

The index level average yield to maturity (Y) is given by

$$Y_{t} = \frac{\sum_{i} P_{i,t} \times N_{i,t} \times y_{i,t}}{\sum_{i} P_{i,t} \times N_{i,t}}$$

Average Macaulay duration

The index level average Macaulay duration (D) is given by

$$D_{t} = \frac{\sum_{i} P_{i,t} \times N_{i,t} \times MacDur_{i,t}}{\sum_{i} P_{i,t} \times N_{i,t}}$$

Average modified duration

The index level average Modified duration (MD) is given by

 $MD_{t} = \frac{\sum_{i} P_{i,t} \times N_{i,t} \times ModDur_{i,t}}{\sum_{i} P_{i,t} \times N_{i,t}}$

Average value of 01

The index level average value of Dval01 (DV01) is given by

$$DV01_{t} = \frac{\sum_{i} P_{i,t} \times N_{i,t} \times Dval01_{i,t}}{\sum_{i} P_{i,t} \times N_{i,t}}$$

Average convexity

The index level average convexity (*Convx*) is given by

$$Convx_{t} = \frac{\sum_{i} P_{i,t} \times N_{i,t} \times Convexity_{i,t}}{\sum_{i} P_{i,t} \times N_{i,t}}$$

Appendix B Further information

A glossary of terms used in FTSE Russell's Ground Rule documents can be found through the following link: <u>Fixed Income Glossary of Terms.pdf</u>

For further information on the FTSE Canada Strip Bond Index Ground Rules please visit <u>www.lseg.com/en/ftse-russell/</u> or e-mail <u>fi.index@lseg.com</u>. Contact details can also be found on this website.

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