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# FTSE TMX Canada Universe Discount Bond Index

v2.1

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## Section 1

# Introduction

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### 1.0 Introduction

#### 1.1 The FTSE TMX Canada Universe Discount Bond Index

1.1.1 The FTSE TMX Canada Universe Discount Bond Index consists of bonds drawn from the FTSE TMX Canada Universe Bond Index whose coupon is at or less than 1.2 times the bond yield to maturity at the time of selection. The index is rebalanced on a quarterly basis, and the weights of the constituents are adjusted so that the index duration and sector profile matches that of the Universe Bond Index.

1.1.2 The index consists of investment grade bonds issued by the following categories of borrowers:

- Government of Canada
- Provincial & Municipal Governments
- Corporates

#### 1.2 IOSCO

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

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 errors or 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 errors or inaccuracies in the compilation of the Index or any constituent data in the FTSE TMX Canada Index Family

## **1.5 These Ground Rules**

- 1.5.1 This document sets out the Ground Rules for the construction and management of the FTSE TMX Canada Universe Discount Bond Index.

## **1.6 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 MTSNext Limited), Mergent, Inc., FTSE Fixed Income LLC and The Yield Book Inc.

## **1.7 Total Return Index** (also known as the Performance Index)

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

## **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 Index Analytics**

- 1.9.1 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
- 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).

The formulae to calculate the Capital and Total Return Indexes, and the index analytics are available in Appendix B.

- 1.10 The base currency of the benchmark is Canadian Dollars (CAD).

## Section 2

# Management Responsibilities

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## 2.0 Management Responsibilities

### 2.1 FTSE International Limited (FTSE)

2.1.1 FTSE is the benchmark administrator of the index.

2.1.2 FTSE is responsible for the daily calculation, production and operation of the FTSE TMX Canada Universe Bond Index Series 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 TMX Canada Universe Discount 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 indexes.

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 meet the current and future requirements of investors and other index users. 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 Product Governance Board before approval is granted.

2.3.2 As provided for in the Statement of Principles for FTSE Fixed Income Indexes, 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.

## Section 3

# FTSE Russell Index Policies

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### 3.0 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 Indexes (the Statement of Principles)

Indexes 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 Indexes 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 Product Governance Board.

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

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

#### 3.3 Price Sources

3.3.1 For further information, please see the FTSE TMX Canada Multi Dealer Pricing Methodology Guide which can be accessed using the following link:

[FTSE TMX Canada Multi Dealer Pricing Methodology Guide.pdf](#)

#### 3.4 Recalculation Policy and Guidelines

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

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



## Section 4

# Eligibility Criteria

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### 4.0 Eligibility Criteria

#### 4.1 Eligible Bonds

- 4.1.1 In order for a security to be considered for inclusion into the FTSE TMX Canada Universe Discount Bond Index, it must be a member of the FTSE TMX Canada Universe Bond Index (Universe Index) as of the rebalancing date.
- 4.1.2 The FTSE TMX Canada Universe Discount Bond Index consists of investment grade bonds which are issued in Canadian Dollars by the Government of Canada, Canadian Provincial and Municipal Governments and Canadian Corporations. For further details, please see the Ground Rules for the FTSE TMX Canada Universe Bond Index Series.
- 4.1.3 On a quarterly basis, securities of the FTSE TMX Canada Universe Bond Index are screened and those securities with a Coupon equal to or less than 1.2 times (multiple) the Yield to maturity (YTM) of the security as of the Selection Date are eligible for inclusion in the FTSE TMX Canada Universe Discount Bond Index. On the quarterly selection date, the multiple may be reviewed and potentially updated as market conditions change to allow for a representative number of securities to be considered as eligible. Any changes to the multiple will be announced in accordance with procedures.
- 4.1.4 In order to be eligible for the indexes bonds must have a price assigned from a price source as specified in Section 5 of these Ground Rules.





## Section 5

# Price Sources

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### 5.0 Price Sources

5.1 The securities that make up the Universe Bond Index are priced using inputs from leading fixed income broker / dealers in Canada at 4:00pm Eastern Time. The individual price for each security is derived by using proprietary filters that first remove any significant outliers, followed by a Standard Deviation Mean calculation. This Multi Dealer data best represents the marketplace by removing the ability of any one dealer to have undue influence upon the final calculated price / yield. The final security price is the mid-market price.

Whilst the index assumes a T+0 settlement period, normal settlement rules apply for the underlying bond prices (e.g. 2 day settlement for Canada bonds under three years to maturity, 3 day settlement for most other bonds).

For more information on the price sources used for the Universe Bond Index, please see the FTSE TMX Canada Multi Dealer Pricing Methodology Guide, which can be accessed using the following link:

[FTSE TMX Canada Multi Dealer Pricing Methodology Guide.pdf](#)

## Section 6

# Index Rebalancing

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### 6.0 Index Rebalancing

#### 6.1 Rebalance Schedule

6.1.1 The FTSE TMX Canada Universe Discount Bond Index is rebalanced on a quarterly basis (January, April, July, October), on the last business day of the quarter. The cut-off date (Selection Date) for constituent selection is 1 calendar week before the last business day of the quarter.

#### 6.2 Addition of Constituents

6.2.1 Bonds which meet the eligibility criteria as defined in Section 4 as of the Selection Date are added to the index on the rebalancing date and impact the total returns from the first day of the new quarter.

#### 6.3 Removal of Constituents

6.3.1 Constituents will be removed from the index on the quarterly rebalancing date, if they no longer meet the eligibility criteria as defined in Section 4 as of the Selection Date.

6.3.2 Constituents may be removed from the index in between rebalance dates as a result of a full redemption. The weight of the removed bond(s) will be redistributed proportionally to the remaining constituents.

#### 6.4 Weights

6.4.1 Once the constituents have been selected, their notional amounts are adjusted so that the following conditions are met:

1. The weights of the Government (Federal, Provincial and Municipal) and Corporate sectors fall within +/- 1% of their respective weights in the Universe Index, as of the rebalance date. The weights in the universe index are calculated by taking the market value of each sector and dividing it by the market value of the index.
2. The Corporate sector ratings are constrained to be within +/- 0.1 of their respective ratings in the Universe Index, as of the rebalance date. In conversion, the AAA rating is 5, AA rating is 4, and so on.
3. The overall modified duration of the constituents falls within +/- 0.05 of the Universe Index.

The weights are adjusted by an optimization procedure, which tries to meet the objectives above, whilst staying close to the original market value weights of the constituent bonds.

## Appendix A: Index Family Structure

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

Level 1	Level 2	Level 3
Corporate	Communication	Media
		Telecommunication
	Energy	Distribution
		Exploration
		Generation
		Integrated
		Pipelines
	Financial	Auto Finance
		Bank
		Insurance
	Industrial	Financial Services
		Consumer
		Diversified
		Manufacturing
		Resources
	Infrastructure	Services
		Transportation
		Health
		Transportation
	Real Estate	Utility
Education		
Securitization	NonREIT	
	REIT	
Federal	ABS	
	CMBS	
Municipal	Non-Agency	
	Agency Supranational	
Government	Provincial	-
		Alberta
		British Columbia
		Manitoba
		New Brunswick
		Newfoundland
		Nova Scotia
		Ontario
		PEI
		Saskatchewan
		Quebec
Yukon		

## Appendix B: Index Formulae

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This section describes the calculation of the constituent/index total return. For all other calculations, please consult the Guide to Calculation Methods for the FTSE Fixed Income Indexes [FTSE Fixed Income Index Guide to Calculation.pdf](#).

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 $t$
$Coupon_i$	coupon rate of a constituent bond $i$
$C_{i,t}$	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

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

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

## Appendix C: 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 TMX Canada Universe Discount Bond Index Series Ground Rules please visit [www.ftserussell.com](http://www.ftserussell.com) or e-mail [info@ftserussell.com](mailto:info@ftserussell.com). Contact details can also be found on this website.

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