



FTSE TMX Canada Universe and Maple Bond Indexes

v2.0



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Section 1

Introduction

1.0 Introduction

1.1 The FTSE TMX Canada Universe and Maple Bond Indexes.

1.1.1 The FTSE TMX Canada Universe and Maple Bond Indexes comprise of a series of benchmarks which are designed to track the performance of the bonds denominated in Canadian Dollars (CAD).

1.2 IOSCO

1.2.1 FTSE International Limited (FTSE) considers that the FTSE TMX Canada Universe and Maple Bond Indexes meet the IOSCO Principles for Financial Benchmarks as published in July 2013.

1.3 FTSE hereby notifies users of the indexes that it is possible that circumstances, including external events beyond the control of FTSE, may necessitate changes to, or the cessation of, the indexes and therefore, any financial contracts or other financial instruments that reference the indexes or investment funds which use the indexes to measure their performance should be able to withstand, or otherwise address the possibility of changes to, or cessation of, the indexes.

1.4 Index users who choose to follow these indexes or to buy products that claim to follow these indexes should assess the merits of the indexes' 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 Indexes or any constituent data in the FTSE TMX Canada Universe and Maple Bond Indexes .

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, FTSE TMX Canada Maple Bond and the FTSE TMX Canada Universe and Maple Bond Indexes.

1.6 FTSE Russell

FTSE Russell is a trading name of FTSE International Limited, Frank Russell Company, and FTSE TMX Global Debt Capital Markets Limited and its subsidiaries (including MTSNext Limited). FTSE International Limited is the administrator of all FTSE Russell indexes.

1.7 Index Objectives

1.7.1 The indexes are designed to be a broad measure of the Canadian investment-grade fixed income market, covering government, quasi-government and corporate bonds. They are transparent indexes, and are designed to be replicable with individual security holdings and prices disclosed electronically each day.

The index returns are calculated daily, and are weighted by market capitalisation, so that the return on a bond influences the return on the index in proportion to its market value.

1.8 Major Sub-Indexes

1.8.1 A sub-index will be created if a sufficient number of eligible constituents for that sub-index exist. All indexes have the following three maturity sub-indexes:

- Short (5 years and under)
- Mid (5– 10 years)
- Long (over 10 years)

Additionally, the Federal Government sector is also broken down into the following maturity sub-indexes (1-3, 3-5, 5-7, 7-10, 10-15, 15-25, 25+).

1.8.2 The indexes may also be split into sub-indexes based on the issuer classification of each bond. The government segment, for example, is divided into Federal, Provincial and Municipal sectors. The Corporate segment is divided into sub-sectors based on major industry groups: Financial, Communication, Industrial, Energy, Infrastructure, Real Estate, and Securitization. The full classification schema is detailed in Appendix A.

1.8.3 The corporate sub-indexes are further broken down into rating categories, as defined in Rule 4.4:

- AAA/AA
- A
- BBB
- ex-BBB

1.9 Capital Index (also known as the Price Index or the Clean Price Index)

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

1.10 Total Return Index (also known as the Performance Index)

1.10.1 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.

1.11 Index Analytics

1.11.1 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.

1.12 The base currency of the benchmark is CAD.

Section 2

Management Responsibilities

2.0 Management Responsibilities

2.1 FTSE International Limited (FTSE)

2.1.1 FTSE is the benchmark administrator of the index series.

2.1.2 FTSE is responsible for the daily calculation, production and operation of the FTSE TMX Canada Universe and Maple Bond Indexes 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 and Maple Bond Indexes.

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 Ground Rules should subsequently be updated to provide greater clarity.



Section 3

FTSE Russell Index Policies

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:

[FTSE_Russell_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 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 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.

[Fixed_Income_Recalculation_Policy_and_Guidelines.pdf](#)

3.4 FTSE Russell Policy for Benchmark Methodology Changes

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

[FTSE_Russell_Policy_for_Benchmark_Methodology_Changes.pdf](#)



Section 4

Eligibility Criteria

4.0 Eligibility Criteria

4.1 Eligible Bonds

4.1.1 In order to be eligible for the FTSE TMX Canada Universe and Maple Bond Indexes, bonds must meet the following criteria:

Currency of Denomination: Canadian Dollars (CAD)

Remaining Effective term to maturity: At least one year

Minimum Rating: The index rating, as defined in Rule 4,4, must be BBB or higher

Number of Institutional Investors: At least 10 institutional buyers.

4.1.2 Bonds must have fixed rate coupons, payable semi-annually. Coupon bonds may have odd first and/or last coupon/principal payments:

- short last shall mean a bond with scheduled semi-annual payments, where only the last coupon / principal payment date is less than 6 months in term from the previous scheduled semi-annual payment date;
- long last shall mean a bond with scheduled semi-annual payments, where only the last coupon / principal payment date is greater than 6 months but less than 12 months in term from the previous scheduled semi-annual payment date;
- Prior to 15 February 2011, issues with short and/or long last coupon / principal payments were not eligible for index inclusion;
- Bonds with odd first coupon payments remain eligible under the definition of semi-annual.

4.1.3 Non-viability contingent capital bonds (NVCC) are eligible for inclusion effective 1 July 2017. NVCC debt issued and settling prior to 1 July 2017 are included in the index starting on 7 February 2018.

Senior and subordinated securities that are subject to a conversion to common shares or bail-in (full or partial) at the discretion of local regulators in a non-viability event are eligible for index inclusion, provided all other index criteria are met. Securities that exhibit equity conversion or write-down features (full or partial) based on explicit trigger mechanisms linked to an issuer's regulatory capital ratios or other solvency balance sheet metrics are not index eligible (such securities are sometimes labelled contingent capital CoCo). For the avoidance of doubt, Non Viability Contingent Capital (NVCC) falls into the former category as the bail-in mechanism is a discretionary option at the behest

of the local regulator (office of the superintendent of financial institutions of Canada - OFSI) in a non-viability scenario.

4.1.4 Inclusions

The majority of the bonds in the indexes are semi-annual coupon bullet securities. However, the indexes also include the following: callable bonds, extendible/ retractable bonds, sinking funds, exchangeables, junior subordinated bonds/hybrid capital, fixed-to-floaters with a stated legal maturity and fixed-to-floaters without a stated maturity considered as a bullet for the period when the coupon is fixed, semi-annual amortizing securities, and certain asset-backed securities (ABS) that are structured as semi-annual pay bullet bonds. 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 indexes are public issues, private issues that meet the above criteria are also eligible for inclusion.

4.1.5 Exclusions

The indexes do not include floating-rate notes, convertible bonds (which convert to equity at the option of the holder), residential and commercial mortgage-backed securities (CMBS and MBS), other monthly-pay securities, other 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.

4.2 Minimum Issuance Size

4.2.1 Securities must meet minimum size requirements to help ensure that the index constituents are sufficiently liquid, and that it is possible for a fund manager to replicate the performance of the indexes.

Effective from 15 July 2003, the following minimum sizes apply for the Universe Bond Index inclusion, reflecting the shift toward larger issuance:

- CAD \$100 million for Corporate bonds,
- CAD \$50 million for Government bonds, including municipal and provincial bonds.

For the Maple Bond Index, the minimum issuance size is \$100 Million for all sectors.

These dollar amounts include the original issue amount plus re-openings. Note that for the purpose of calculating returns and risk measures, index holdings are adjusted to reflect buybacks, amounts held by the Bank of Canada, and the stripping and reconstitution of securities, but these adjustments do not affect index inclusion or exclusion.

Prior to 15 May 2014, the index holdings were also adjusted to reflect the amounts held by the Caisse de dépôt et placement.

4.3 Index Assignment

4.3.1 In order to be assigned to the Universe Bond Index, the bond must be issued by any one of the following entities:

- Government of Canada (including both non-agency, agency / crown corporations)
- Supranational entities where a Canadian Government is a member of the Supranational, Provincial, Territorial, or Municipal Government of Canada, including those that have guarantees
- Canadian Federal, Provincial or Territorial corporations, incorporated under respective jurisdiction
- Special Purpose Vehicles (SPV), or non-operating holding companies, utilized and fully and unconditionally guaranteed by Canadian Corporations that are Federally Regulated Entities

(FREs) by the Office of the Superintendent of Financial Institutions Canada (OSFI), where the SPV, or non-operating holding company, is a financing vehicle for the Corporation in question.

- Issues are reviewed for eligibility on an individual basis.

4.3.2 Any bonds which meet the eligibility criteria referenced in Rules 4.1, 4.2 and 4.4, but are not issued by the entities referenced in Rule 4.3.1 will be assigned to the Maple Bond Index.

4.4 Index Ratings

4.4.1 Bonds must have an index rating of at least investment grade, in order to be eligible for the indexes.

The index rating for each bond is based on the ratings from Dominion Bond Rating Service, Standard and Poor's, Moody's Investors Service and Fitch. In cases where the agencies do not agree on the credit rating, the index rating will be classified according to the following rules:

- If two agencies rate a security, and the ratings are not equal, use the lower of the two ratings;
- If three agencies rate a security, use the most common rating;
- In the rare event that all three agencies disagree, use the middle rating.
- If four agencies rate a security, use the most common rating;
- If four agencies rate a security with a two way split, use the lower rating;
- In the highly unlikely event that all four agencies disagree, consider the three lower ratings applying the three rating methodology rule.

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

The index ratings are classified into broad credit rating categories of AAA/AA, A, and BBB. The index rating 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. Additionally, 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.



Section 5

Price Sources

5.0 Price Sources

- 5.1.1 The securities that make up the FTSE TMX Canada Universe and Maple Bond Indexes 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.
- 5.1.2 The index assumes a T+0 settlement period for the purposes of calculating bond analytics such as yields, duration or accrued interest.
- 5.1.3 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

6.0 Index Rebalancing

6.1 Rebalancing the Indexes

6.1.1 The indexes are rebalanced on a daily basis.

6.2 Addition of Constituents

6.2.1 A new issue enters the index on the day it is issued or auctioned. 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.

6.3 Removal of Constituents

6.3.1 A 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 example, on 1 December 2012, the index sells a bond maturing in one year, 1 December 2013, at the 4:00pm mark-to-market price. This bond therefore contributes to the return on the index from 30 November to 1 December 2012. It does not contribute to index duration and other risk statistics calculated at the close on 1 December 2012.

Analogous rules apply for the movement of bonds from one term sub-index to another, e.g. from Long to Mid. For a bond with embedded option features, the rule for moving from one term category to another, and for rolling out of the index, is based on effective term (either the option exercise date, or the final maturity date), since these bonds are classified into index term categories according to effective term. Realized coupon and redemption income, is reinvested daily across all bonds in the index in proportion to their market values.

6.3.2 When a bond defaults or is downgraded below BBB, it is removed from the index 90 days after the initial default or downgrade. Removal is delayed to help ensure that the full price impact of the default/downgrade is reflected in the Index before the bond is removed. If the bond were instead removed from the index before the full price decline had happened, and a portfolio continued to hold the bond, index returns would tend to be biased upward relative to actual portfolio returns. When a corporate bond is downgraded or upgraded from one investment grade category to another, for example from A to BBB, the change is made to the index on the following business day.

6.4 Alterations to Constituents

6.4.1 The following events are implemented on their effective date:

- Unscheduled redemptions or repurchases, including puts or calls
- Coupons which step up or down, for example rating driven bonds
- Bonds which fudge into an existing bond

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
		Services
		Transportation
	Infrastructure	Health
		Transportation
		Utility
Real Estate	Education	
	NonREIT	
Securitization	REIT	
	ABS	
Government	Federal	CMBS
		Non-Agency
		Agency
	Municipal	Supranational
		-
	Provincial	Alberta
		British Columbia
		Manitoba
		New Brunswick
		Newfoundland
Nova Scotia		
Ontario		
PEI		
Saskatchewan Quebec		
Yukon		



Appendix B: Index Calculations

For further details on the index and bond level calculations, please see the Guide to Calculation Methods for the FTSE Fixed Income Indexes which can be accessed using the following link:

[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
$C_{i,t}$	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

$$PI_{i,0}=100$$
$$PI_{i,t}=PI_{i,t-1} \times \frac{\sum [P_{i,t} \times N_{i,t-1}]}{\sum [P_{i,t-1} \times N_{i,t-1}]}$$

Total Return Index

The total return index (TR) is given by

$$TRI_{i,0}=100$$
$$TRI_{i,t}=TRI_{i,t-1} \times \frac{\sum [(P_{i,t} + A_{i,t} + C_{i,t}) \times N_{i,t-1}]}{\sum [(P_{i,t-1} + A_{i,t-1}) \times N_{i,t-1}]}$$



Appendix C: Further Information

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 and Maple Bond Indexes Ground Rules please visit www.ftserussell.com or e-mail info@ftserussell.com. Contact details can also be found on this website.

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