

Construction and methodology



Russell RAFI Index Series

v2.6

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Section 1

Introduction

1.0 Introduction

1.1 Russell RAFI™ Index Series

1.1.1 The Russell RAFI Index Series is designed to select and weight securities by fundamental measures of company size as opposed to market capitalization.

1.2 Available currencies

1.2.1 The base currency of the benchmark is US Dollars. Index values may also be published in other currencies.

1.3 FTSE Russell

1.3.1 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 MTSNext Limited), Mergent, Inc., FTSE Fixed Income LLC, The Yield Book Inc and Beyond Ratings.

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

1.3.3 Index users who choose to follow this index series or to buy products that claim to follow this index series should assess the merits of the index series 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 Russell for any losses, damages, claims and expenses suffered by any person as a result of:

- any reliance on this Construction and Methodology, and/or
- any errors or inaccuracies in this Construction and Methodology, and/or
- any non-application or misapplication of the policies or procedures described in this Construction and Methodology, and/or
- any errors or inaccuracies in the compilation of the index series or any constituent data.

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 index series and will:

- maintain records of the index weightings of all constituents;
- make changes to the constituents and their weightings in accordance with the Ground Rules;
- carry out the periodic index reviews of the index series and apply the changes resulting from the reviews as required by the Ground Rules;
- publish changes to the constituent weightings resulting from their ongoing maintenance and the periodic reviews;
- disseminate the indexes.

2.2 Amendments to These Ground Rules

2.2.1 These Ground Rules shall be subject to regular review by FTSE Russell to ensure that they continue to best reflect the aims of the index series. 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.

2.2.2 As provided for in the Statement of Principles for FTSE Russell Equity 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

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 Statement of Principles for FTSE Russell Equity 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 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 FTSE Russell's Product Governance Board.

The Statement of Principles can be accessed using the following link:

[Statement_of_Principles.pdf](#)

3.2 Queries and Complaints

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

[Benchmark_Determination_Complaints_Handling_Policy.pdf](#)

3.3 Index Policy for Trading Halts and Market Closures

3.3.1 Guidance for the treatment of index changes in the event of trading halts or market closures can be found using the following link:

[Index_Policy_for_Trading_Halts_and_Market_Closures.pdf](#)

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

3.4.1 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.pdf](#)

3.5 **Recalculation Policy and Guidelines**

3.5.1 The Russell RAFI Index Series is recalculated whenever errors or distortions occur that are deemed to be significant. Users of the Index Series are notified through appropriate media.

3.5.2 For further information refer to the FTSE Russell Recalculation Policy and Guidelines document which is available from the FTSE Russell website using the link below or by contacting info@ftserussell.com.

[Recalculation Policy and Guidelines Equity Indexes.pdf](#)

Policy for Benchmark Methodology Changes

3.5.3 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

Constructing the Russell RAFI Indexes

4.0 Constructing the Russell RAFI Indexes

4.1 Eligible securities

- 4.1.1 The Russell RAFI Index Series is derived from the constituents of the FTSE Global Total Cap Index. Please see the FTSE Global Equity Index Series Ground Rules used to define the total stock universe on which the Russell RAFI Index Series are based.

4.2 Steps in constructing the Russell RAFI Index Series

1. Starting with the FTSE Global Total Cap Index as the underlying universe, the Russell RAFI Index Series methodology applies an additional liquidity screen. The liquidity screen captures 95% of the liquidity in the FTSE All World Index. It removes securities that have a liquidity measure that is two standard deviations from the mean of a lognormal distribution of the average daily dollar trading value (ADDTV) of the securities in the FTSE All-World Index. The ADDTV is based on the last 12 months. For a security to be eligible for inclusion, it must have an average daily dollar trading value (ADDTV) that is greater than or equal to:

Where: $x = \{x_1, x_2, \dots, x_i, x_n\}$, where x_1 is the average daily dollar trading value of security i

$$\mu = \frac{\sum_{i=1}^n \ln(x_i)}{n} \quad \sigma = \sqrt{\frac{1}{N} \sum_{i=1}^n (\ln(x_i) - \mu)^2}$$

In the above equation, the mean and standard deviations are derived from the liquidity of the constituents in the FTSE All-World Index.

The remaining securities in the FTSE Global Total Cap Index (excluding the FTSE All World Index) will be subject to an ADDTV cutoff point that is half of the cutoff point identified above.

2. Each company is then ranked and weighted by each individual Russell RAFI fundamental factor.

Russell RAFI fundamental factors

Adjusted Sales: Constituent level adjusted sales are calculated using the average sales generated by each constituent over the past five years. Average total sales are then adjusted to take into consideration financial leverage by multiplying the sales component by an adjustment factor. The constituent level adjustment factor is equivalent to the ratio of average

equity to average assets. Adjusting for financial leverage decreases the weight of companies with significant leverage.

Retained Operating Cash Flow: Constituent level retained operating cash flow is calculated using the average operating cash flow from operations less dividends and buybacks (as defined below) over the past five years.

Dividends plus Buybacks: Constituent level dividends plus buybacks is calculated using the average dividends paid and share buybacks over the past five years.

The average of the three fundamental factor weights determines the aggregate fundamental value for each individual company. In the event of a constituent having missing data resulting in incomplete five-year history for any factor, the remaining available data is used for the calculations. If all five years of data are missing for a factor, the company is deemed ineligible. For each security, a relative fundamental weight is then calculated based on all the securities in the universe.

3. The fundamental value for each security is multiplied by its investability weight and the result is the free float adjusted fundamental weight for the security.
4. For any company with multiple share classes the fundamental weight is distributed across the share classes eligible for the index based on the company's free float adjusted market capitalization.
5. Constituents are then ranked in descending order by their fundamental weights. Securities representing the bottom 2% in fundamental weights are removed. Removing the bottom 2% prevents securities with very small fundamental weights from entering the index.
6. To determine the constituents of the Russell RAFI Large Company and Russell RAFI Small Company Indexes, all companies that rank above the 87.5 percentile by cumulative fundamental weight are classified as large, and companies ranking below 87.5 are classified as small. The large and small companies are then aggregated to constitute the relevant Russell RAFI global, regional and country indexes. For example, large and small companies with a nationality of the US will constitute the Russell RAFI US Index,
7. An enhanced capacity analysis is performed for several selected indexes:

US Large	Global Large	Emerging Markets
US Small	Global Small	

Securities are not screened out of the index, rather a securities' weight in the index is capped. Capacity is defined as the total amount that can theoretically be invested in a company. For a security that has 100% of its shares freely available, the maximum capacity is defined as the total market capitalization of that security. The share portion of an index constituent cannot exceed 5% of the float-adjusted shares of a company within a portfolio with a notional value of \$5 billion. The capping of a security's fundamental weight limits the security's weight as represented in the index.

8. The fundamental weight for each security is then normalized such that the weights then sum to 1.

Section 5

Constructing the Russell RAFI Select Real Estate Index Series

5.0 Constructing the Russell RAFI Select Real Estate Index Series

5.1 Definition

5.1.1 The Russell RAFI Select Real Estate Index Series are designed to provide exposure to the real estate segment of the global equity market by selecting and weighting securities by fundamental measures of company size as opposed to market capitalization.

5.1.2 The Russell RAFI Select Real Estate Index Series is a sub-set of the Russell RAFI Global Index, whose construction and methodology is outlined in Section 4. The following indexes are included in the Russell RAFI Select Real Estate Index Series:

- Russell RAFI Global Select Real Estate Index
- Russell RAFI Global ex-US Select Real Estate Index
- Russell RAFI US Select Real Estate Index

5.2 Eligible securities

5.2.1 The Russell RAFI Select Real Estate Index Series is derived from the constituents of the Russell RAFI Global Index. All securities classified as Real Estate (RGS¹ Subsector Code: 1050) (New ICB Real Estate Investment and Services ICB Code 351010) or Real Estate Investment Trusts (RGS Subsector Code:1060) (New ICB Real Estate Investment Trusts: ICB Code 351020) are initially eligible for inclusion within the index series.

5.3 Steps in constructing the Russell RAFI Select Real Estate Index Series

1. All securities classified as Real Estate or Real Estate Investment Trusts within the FTSE Global Total Cap Index are initially selected.
2. Exclude securities classified within the following Russell Global Sectors industries:
 - Equity REIT - Timber (RGS Industry Code:1060913) (Timber REITs – ICB Code 35102060)

¹ The Russell RAFI Index Series will move from the Russell Global Sectors (RGS) classification system to the ICB classification system in September 2020.

- Mortgage REITs – Residential (RGS Industry Code:1060930) (Mortgage REITs: Residential – ICB Code 30203020)
 - Mortgage REITs – Commercial (RGS Industry Code:1060931) (Mortgage REITs: Commercial – ICB Code 30203010)
 - Mortgage REITs – Diversified (RGS Industry Code:1060932) (Mortgage REITs: Diversified – ICB Code 30203000)
- 3.** Apply a minimum size rule to improve index investability:
 - Calculate the individual security weights for the remaining securities.
 - Aggregate the security weights calculated above by country to obtain country weights.
 - A country must have a minimum weight of 30bps to be initially included within the index. Securities classified in a country whose weight is less than 30bps are removed from the index.
 - In order for a security to remain within the index once initially included, its country must maintain a minimum weight of 10bps. If a country's weight drops below 10bps, all securities classified within that country are removed from the index. The country will then need to meet the minimum 30bps in weight in order for its securities to re-enter the index. Country weights are measured as of annual review each year.
 - 4.** The remaining securities are included within the Russell RAFI Select Real Estate Index Series.

Section 6

Index Review and Implementation

6.0 Index Review and Implementation

6.1 Index Review

- 6.1.1 The Russell RAFI Index Series is reviewed each year in March based on data as at the close of business on the last trading day of January, taking into account any additions and deletions planned in the FTSE Global Total Cap Index.

Fundamental weights for the Russell RAFI Index Series are calculated and set at this time and used to determine the security-level fundamental weights. Any country or sector classification change that occurs in the FTSE Global Total Cap Index is reflected at the Russell RAFI Index Series review in March each year.

- 6.1.2 The review will be implemented after the close of business on the third Friday (i.e. effective Monday) of March each year. Target weights will be determined using prices as at the Monday 4 weeks prior to the review effective date, shares in issue and investability weight as at the review effective date.

6.2 Quarterly application of the annual review

- 6.2.1 The annual review of the Russell RAFI Index Series is implemented across the year rather than at one point in time to help increase investment capacity and minimize entry point risk. To do this, the index is divided into four equal tranches. Each of the tranches is managed like a separate portfolio and each is rebalanced at different times in the year according to the following quarterly schedule:

March – changes to Tranche 1 are effective after the close of business on the third Friday in March.

June – changes to Tranche 2 are effective after the close of business on the third Friday in June.

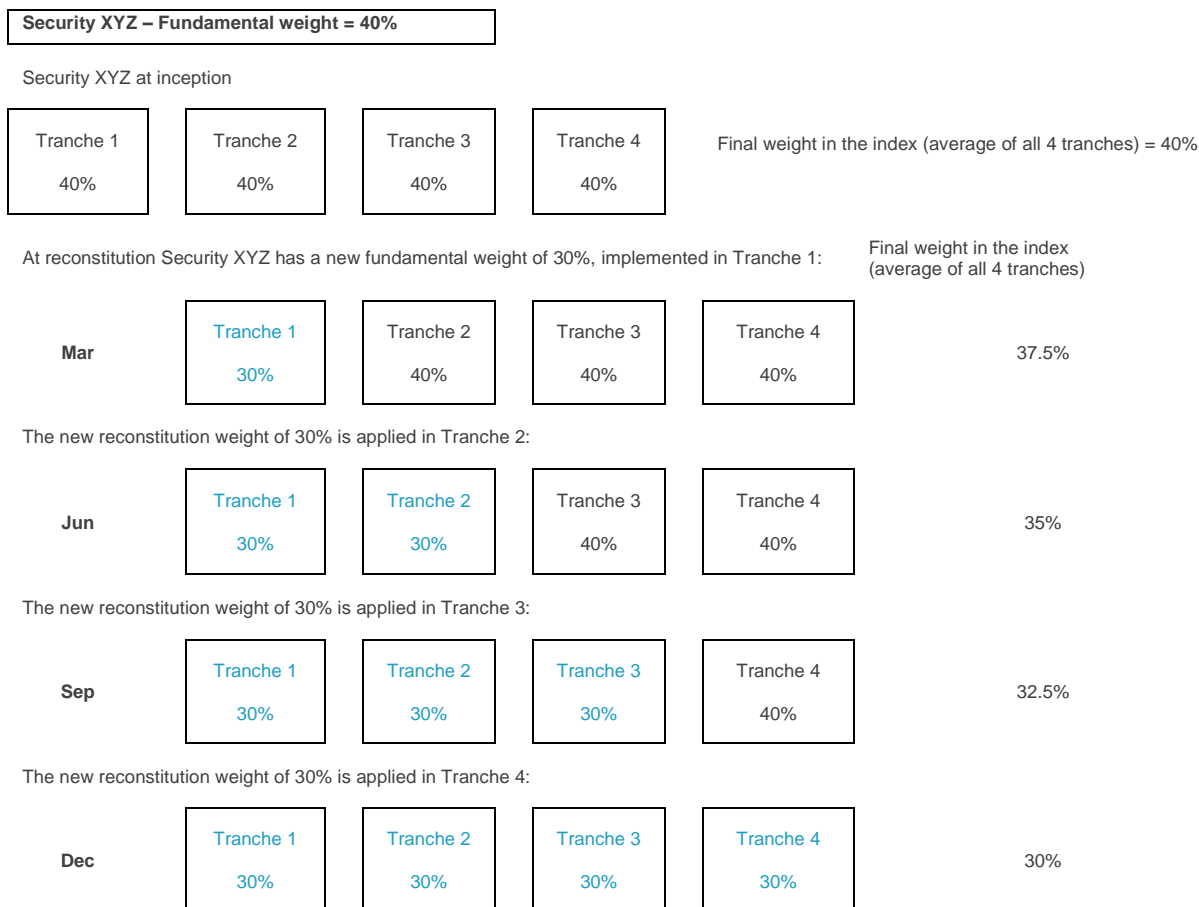
September – changes to Tranche 3 are effective after the close of business on the third Friday in September.

December – changes to Tranche 4 are effective after the close of business on the third Friday in December.

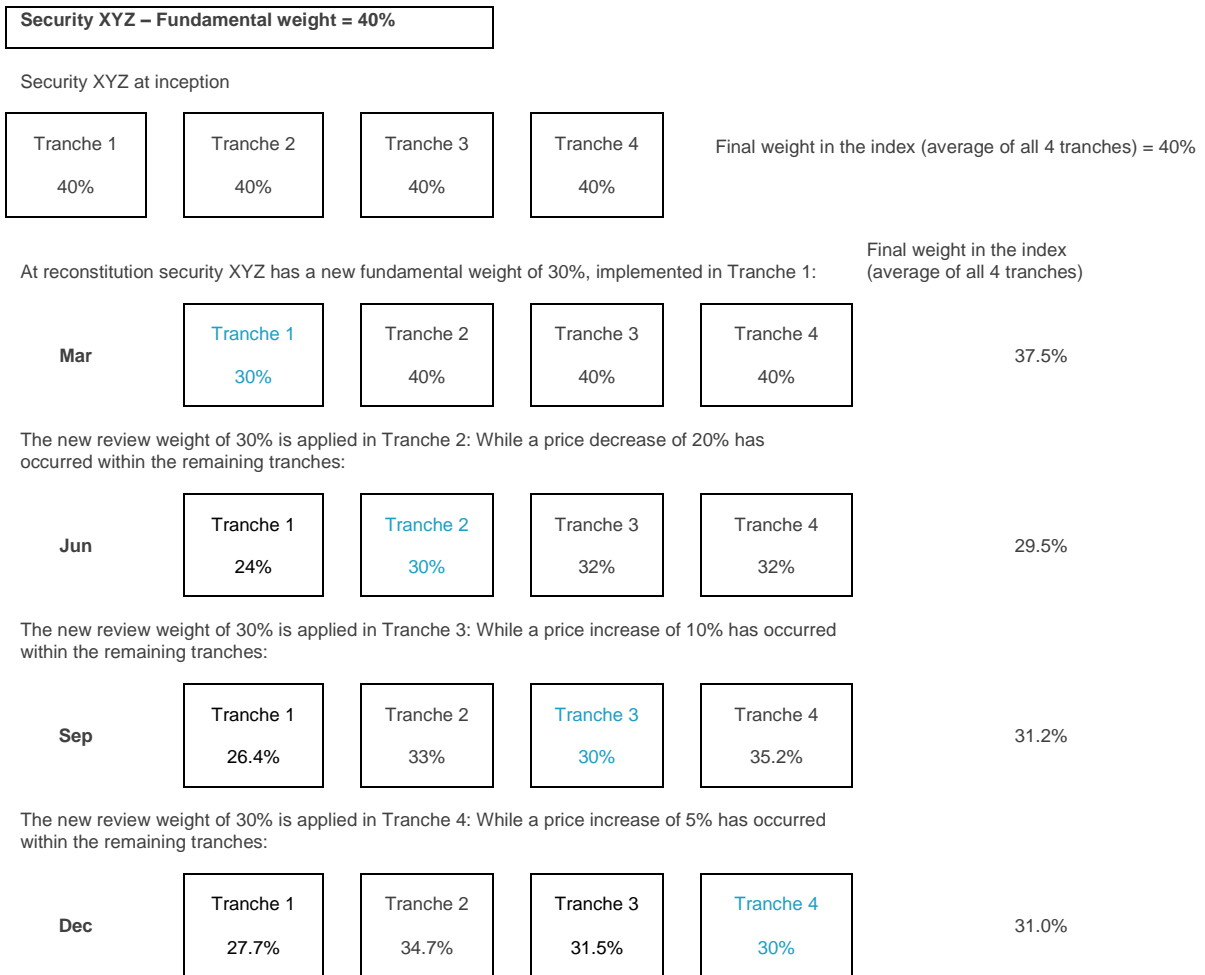
- 6.2.2 In March, tranche 1 includes all the additions to the index as a result of annual review, at their reconstituted fundamental weights. Security fundamental weights remain unchanged for tranches 2, 3 and 4. In June, tranche 2 is reconstituted to the March weights and any securities that were added to the

index as a result of the annual review are now added to tranche 2, while tranches 3 and 4 remain unchanged. This process continues for tranche 3 in September and tranche 4 in December. This does not include instances when stocks are added to an index due to sector, size and country classifications. Please see Section 7 for more information. Any deletions to the index as a result of the annual review are deleted from all four tranches in March. When a constituent is added to the FTSE Global Total Cap Index outside of the annual review (e.g. IPOs), the constituent will be considered for inclusion in the Russell RAFI Index series at the next annual review.

6.2.3 The following is an example of quarterly application of the annual review. It provides a simple illustration of how the quarterly implementation impacts a security's weight in the Russell RAFI Index.



6.2.4 Though a security’s fundamental weight is set during the annual review, its weight in the index will fluctuate with price movement. The following is an example of the quarterly review implementation and price performance impact to a security’s weight in the Russell RAFI Index.



6.2.5 Once the new weight is determined for each security, the weights are then normalized such that the weights then sum to 1.

Section 7

Corporate Actions and Events

7.0 Corporate Actions and Events

7.1 Index maintenance / Corporate Action-driven changes

7.1.1 Full details of changes to constituent companies due to corporate actions and events can be accessed in the Corporate Actions and Events Guide for Non Market Cap Weighted Indexes using the following link:

[Corporate Actions and Events Guide for Non Market Cap Weighted Indexes.pdf](#)

The treatment of mergers and acquisitions between constituents of the Russell RAFI Index Series will be applied from a global investors perspective. For example, an all stock merger between constituents of the Russell RAFI Global Index will be treated in a consistent manner to an all stock merger between constituents of the Russell RAFI Large Company and Russell RAFI Small Company Indexes.

A Corporate 'Action' is an action on shareholders with a prescribed ex date. The share price will be subject to an adjustment on the ex date. These include the following:

- Capital Repayments
- Rights Issues/Entitlement Offers
- Stock Conversion
- Splits (sub-division) / Reverse splits (consolidation)
- Scrip issues (Capitalisation or Bonus Issue)

A Corporate 'Event' is a reaction to company news (event) that may impact the index depending on the index rules. For example, a company announces a strategic shareholder is offering to sell their shares (secondary share offer) – this could result in a free float weighting change in the index. Where an index adjustment is required FTSE will provide notice advising of the timing of the change.

7.2 Classification – Sector, Country, Size

- Sector classification changes will take effect for all four tranches simultaneously as part of the Russell RAFI Index Series annual review in March.
- Country classification changes will take effect for all four tranches simultaneously as part of the Russell RAFI Index Series annual review in March.

The attached link can be used to view FTSE Russell's current country classification:

https://www.ftse.com/products/downloads/Matrix-of-Markets_latest.pdf

- Fundamental size classification changes will take effect for all four tranches simultaneously as part of the Russell RAFI Index Series annual review in March. For example, if at the annual review in March a company moves from the large company index to the small company index, the stock will be deleted in its entirety from the large company index (all tranches). It will simultaneously be added to all tranches of the small company index such that all four tranches will have an equal weight of the company in question.

Index Product Breakdown:

Global

Russell RAFI Global

Russell RAFI Global Large Company

Russell RAFI Global Small Company

Russell RAFI Global ex US

Russell RAFI Global ex US Large Company

Russell RAFI Global ex US Small Company

Regional

Russell RAFI Developed

Russell RAFI Developed Large Company

Russell RAFI Developed Small Company

Russell RAFI Developed ex US

Russell RAFI Developed ex US Large Company

Russell RAFI Developed ex US Small Company

Russell RAFI Developed ex South Korea

Russell RAFI Developed ex South Korea Large Company

Russell RAFI Developed ex South Korea Small Company

Russell RAFI Developed ex-US ex-South Korea

Russell RAFI Developed ex-US ex-South Korea Large Company

Russell RAFI Developed ex-US ex-South Korea Small Company

Russell RAFI Europe

Russell RAFI Europe Large Company

Russell RAFI Europe Small Company

Russell RAFI Developed Europe

Russell RAFI Developed Europe Large Company

Russell RAFI Developed Europe Small Company

Russell RAFI Emerging Markets

Russell RAFI Emerging Markets Large Company

Russell RAFI Emerging Markets Small Company

Russell RAFI Emerging Markets plus South Korea

Russell RAFI Emerging Markets plus South Korea Large Company

Russell RAFI Emerging Markets plus South Korea Small Company

Country Indexes

Russell RAFI Canada

Russell RAFI Japan

Russell RAFI US

Russell RAFI US Large Company

Russell RAFI US Small Company

Real Estate

Russell RAFI Global Select Real Estate Index

Russell RAFI Global ex US Select Real Estate Index

Russell RAFI US Select Real Estate Index

Note: An index universe not specified as Large or Small includes Large and Small company securities.

Section 8

Industry Classification Benchmark (ICB)

8.0 Industry Classification Benchmark (ICB)²

8.1 Classification Structure

8.1.1 The Russell Equal Weight Index Series constituents are classified into Industries, Supersectors, Sectors and Subsectors, as defined by the Industry Classification Benchmark (ICB).

8.1.2 Details of the Industry Classification Benchmark are available from FTSE Russell and published on the FTSE Russell website (www.ftserussell.com) and can be accessed using the following link:

[Industry Classification Benchmark](#)

² The Russell RAFI Index Series will move from the Russell Global Sectors (RGS) classification system to the ICB classification system in September 2020.



Appendix A: Further Information

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

[Glossary.pdf](#)

For further information on the Russell RAFI Index Series visit www.ftserussell.com or e-mail info@ftserussell.com. Contact details can also be found on this website.

For more information about our indexes, please visit ftserussell.com.

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