

Construction and methodology



**FTSE
Russell**

Russell RAFI™ Index Series

v2.4

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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. The Russell RAFI Index Series selects companies by non-price measures of firm size using the following fundamental variables: Adjusted Sales, Retained Operating Cash Flow, and Dividend plus buybacks (the “Russell RAFI fundamental factors”). The Russell RAFI Index weights are calculated by Research Affiliates®.
- 1.1.2 The Russell RAFI Index Series is modular. The Russell RAFI US Index is a sub-set of the Russell RAFI Global Index:
- The Russell RAFI US Large Company Index consists of the US securities that are in the Russell RAFI Global Large Company Index
 - The Russell RAFI US Small Company Index consists of the US securities that are in the Russell RAFI Global Small Company Index

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

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.

- 1.3.1 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.
- 1.3.2 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.

2.1.2 FTSE Russell 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 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.

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

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

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

3.2 Index Policy for Trading Halts and Market Closures

3.2.1 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](#)

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

3.3.1 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](#)

3.4 Recalculation Policy and Guidelines

3.4.1 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.

3.4.2 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](#)

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

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 modularly constructed Russell Global Index, of which the Russell 3000® is the US component. Please see the Russell Global Index Construction and Methodology and the Russell US Indexes Construction and Methodology for complete 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 Russell Global Index, the Russell RAFI Index Series methodology applies an additional liquidity screen. The liquidity screen captures 95% of the liquidity in the Russell Global Large Cap 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 Russell Global Large Cap 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 by use of the liquidity of the constituents in the Russell Global Large Cap Index. Small company securities 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 float factor and the result is the 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 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 Russell RAFI Global Large Company and Russell RAFI Global Small Company Indexes, all companies that rank above the 87.5 percentile in cumulative fundamental weight are classified as large company, and companies ranking below 87.5 are classified as small company.
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. For more information about float-adjusted weighting, please refer to Appendix E in the Russell Global Index Construction and Methodology.

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. The indexes select companies by non-price measures of firm size using the following fundamental variables: Adjusted Sales, Retained Operating Cash Flow, and Dividend plus buybacks (the “Russell fundamental factors”). The Russell RAFI Index weights is calculated by Research Affiliates®.

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 3. 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 (1050) or Real Estate Investment Trusts (1060) sub-sectors within the Russell Global Sectors classification scheme 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 Russell RAFI Global Index are initially eligible.
2. Exclude securities classified within the following Russell Global Sectors industries:
 - Equity REIT – Timber (1060913)
 - Mortgage REITs – Residential (1060930)

- Mortgage REITs – Commercial (1060931)
- Mortgage REITs – Diversified (1060932)
- 3.** Apply a critical mass 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 reconstitution each year.
- 4.** The remaining securities are included within the Russell RAFI Select Real Estate Index Series.

Section 6

Reconstitution and Implementation

6.0 Reconstitution and Implementation

6.1 Annual reconstitution

- 6.1.1 The parent index for the Russell RAFI Index Series is the Russell Global Index, of which the Russell 3000[®] is the US component. The parent index is reconstituted each year in June. 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 and sector classification change for a security occurs as part of the Russell Global Index reconstitution and are reflected in the Russell RAFI Index Series.
- 6.1.2 Details for the annual reconstitution of the parent index, the Russell Global Index can be found in the Russell Global Index Series Construction and Methodology document available on www.ftserussell.com

6.2 Quarterly application of the annual reconstitution

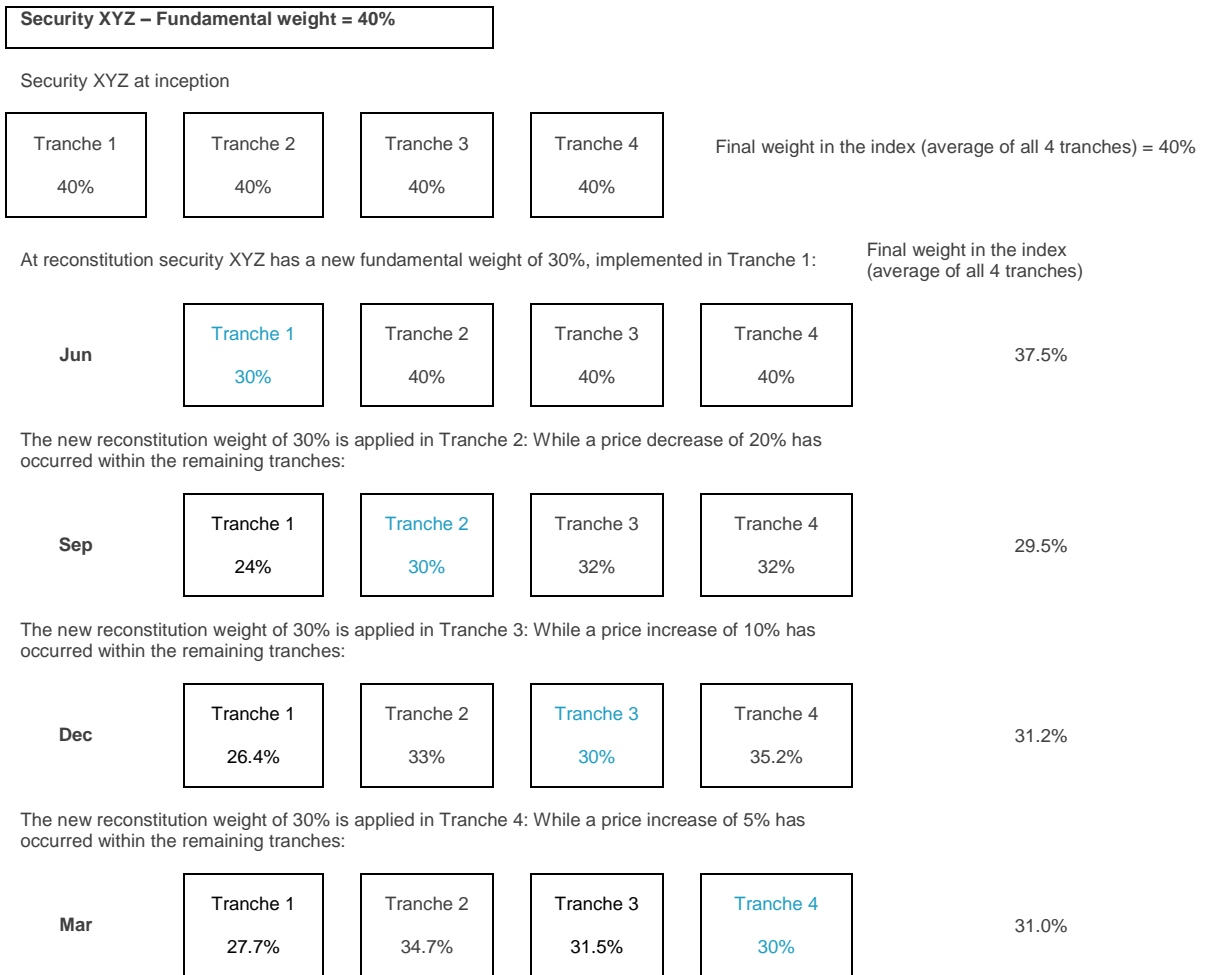
- 6.2.1 The annual reconstitution of the Russell RAFI Index Series is implemented across the year rather than at one point in time to help increase investment capacity and minimize entry point risk. To do this, the index is divided into four equal tranches. Each of the tranches is managed like a separate portfolio and each is rebalanced at different times in the year according to the following schedule:
- June quarter – changes to Tranche 1 will follow the annual reconstitution schedule for the parent index, the Russell Global Index, as published each year on www.ftserussell.com
 - September quarter – changes to Tranche 2 are effective after the close on the third Friday of the quarter.
 - December quarter – changes to Tranche 3 are effective after the close on the third Friday in December.
 - March quarter – changes to Tranche 4 are effective after the close on the third Friday of the quarter.
- 6.2.2 In June, tranche 1 includes all the additions to the index as a result of reconstitution, at their reconstituted fundamental weights. Security fundamental weights remain unchanged for tranches 2, 3 and 4. In September, tranche 2 is reconstituted to the June weights and any securities that were added to the index as a result of reconstitution are now added to tranche 2, while tranches 3 and 4 remain unchanged. This process continues for tranche 3 in December and tranche 4 in March. (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 reconstitution are deleted from all four tranches in June. When a constituent is added to the Russell Global Index outside of the annual reconstitution (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 annual reconstitution. 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 annual reconstitution, its weight in the index will fluctuate with price movement. The following is an example of the quarterly reconstitution 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

Maintaining the Russell RAFI Index Series

7.0 Maintaining the Russell RAFI Index Series

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 Indices.pdf](#)

7.2 Classification – Sector, Country, Size

- Sector classification changes will take effect for all four tranches simultaneously with the Russell Global Index reconstitution in June. However a company's weight in the index (including each individual tranche) will remain unchanged.
- Country classification changes will take effect for all four tranches simultaneously with Russell Global Index country classification changes at reconstitution in June.
- Fundamental size classification changes will take effect for all four tranches simultaneously with the Russell Global Index reconstitution in June. For example, if at the annual reconstitution in June 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 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

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, Mid and Small company securities.



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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