

Ground Rules



FTSE RAFI (Research Affiliates Fundamental Index) Index Series

v4.9

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Section 1

Introduction

1.0 Introduction

- 1.1** This document sets out the Ground Rules for the construction and management of the FTSE RAFI Index Series, which is calculated in association with Research Affiliates, LLC.
- 1.2** The FTSE RAFI Index Series weights index constituents using specific fundamental factors (see Section 5), rather than market capitalisation. Therefore at review, constituent weights are not based on price valuations established by the market.
- 1.3** The FTSE RAFI Index Series does not take account of ESG factors in its index design.
- 1.4** The following indices are calculated:

Global & Regional Indices:

- FTSE RAFI All-World 3000 Index*
- FTSE RAFI Developed 1000 Index*
- FTSE RAFI Developed Asia Pacific ex Japan Index*
- FTSE RAFI Developed Asia Pacific ex Japan ex Korea Index
- FTSE RAFI Developed Europe Mid Small Index*
- FTSE RAFI Developed ex US 1000 Index*
- FTSE RAFI Developed ex US Mid Small 1500 Index*
- FTSE RAFI Developed 1000 ex Korea ex Israel Index
- FTSE RAFI Emerging Index*
- FTSE RAFI Emerging plus Korea Index
- FTSE RAFI Europe ex UK Index
- FTSE RAFI Europe Index*
- FTSE RAFI Developed Eurozone Index*
- FTSE RAFI Kaigai 1000 Index
- FTSE RAFI North America Index
- FTSE RAFI Global ex US Real Estate Index*

Country Indices:

- FTSE RAFI Developed ex US 1000 Country Indices
 - FTSE RAFI Australia Index
 - FTSE RAFI Austria Index
 - FTSE RAFI Belgium/Luxembourg Index
 - FTSE RAFI Canada Index*
 - FTSE RAFI Denmark Index
 - FTSE RAFI Finland Index
 - FTSE RAFI France Index
 - FTSE RAFI Germany Index
 - FTSE RAFI Hong Kong/China Index
 - FTSE RAFI Ireland Index
 - FTSE RAFI Italy Index
 - FTSE RAFI Japan Index*
 - FTSE RAFI Korea Index
 - FTSE RAFI Netherlands Index
 - FTSE RAFI New Zealand Index
 - FTSE RAFI Norway Index
 - FTSE RAFI Portugal Index
 - FTSE RAFI Singapore Index
 - FTSE RAFI Spain Index
 - FTSE RAFI Sweden Index
 - FTSE RAFI Switzerland Index*
 - FTSE RAFI UK Index
- FTSE RAFI Australia 200 Index*
- FTSE RAFI Brazil 50 Index*
- FTSE RAFI Canada Mid Small Index
- FTSE RAFI Hong Kong/China 80 Net Index
- FTSE RAFI Italy 30 Index*
- FTSE RAFI Japan 350 Index
- FTSE RAFI Japan 350 ex J-REITS Index
- FTSE RAFI Japan ex J-REITS Index
- FTSE RAFI Mexico Index
- FTSE RAFI Sweden Index
- FTSE RAFI UK 100 Index*
- FTSE RAFI UK 300 Index*
- FTSE RAFI US 500 Index
- FTSE RAFI US 1000 Index*
 - FTSE RAFI US 2500 Index
 - FTSE RAFI US 3000 Index
 - FTSE RAFI US Mid Small 1500 Index*
 - FTSE RAFI US Real Estate 100 Index*
 - FTSE RAFI US BDR 20 Index
 - FTSE/JSE RAFI 40 Index*
- FTSE/JSE RAFI All Share Index
- FTSE/JSE RAFI All Share Capped Index

1.5 Price and Total Return values are calculated for all the FTSE RAFI Indices on an end of day basis. Price Index values are also calculated in real time for those Indices marked with an asterisk (*) in Rule 1.4.

1.6 The following variants are, or if requested may be, calculated for certain indices within the index series:

- Capital and total return indices.
- Net total return indices based on specified withholding tax rates.
- Indices calculated in currencies other than the base currency (USD).
- Currency hedged indices.
- Capped indices.
- Constituent size bands – large, mid, small.
- Global, regional and single country indices.
- Sector indices.

Additional customised variants can be calculated on request including indices with industry, country and sector exclusions. Selected indices are calculated and disseminated on a real time basis.

1.7 The base currency of the benchmark is US Dollars (USD). Index values may also be published in other currencies.

1.8 IOSCO

1.8.1 FTSE considers that the FTSE RAFI Index Series 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 using the following link:

[IOSCO Statement of Compliance](#).

1.9 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 series.

1.10 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 Russell 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 of any constituent data.

1.11 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 FTSE Fixed Income Europe Limited), FTSE Fixed Income LLC, The Yield Book Inc and Beyond Ratings.

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.¹

2.1.2 FTSE is responsible for the calculation of the FTSE RAFI Index Series. FTSE will maintain records of the weightings of all constituents and will make changes to the constituents and their weightings in accordance with this methodology. FTSE will implement constituent changes resulting from the annual review, or as otherwise required by this methodology.

2.2 Research Affiliates (RAFI)

2.2.1 Research Affiliates is responsible for calculating the RAFI fundamental value of companies based on FTSE Russell's universes at the annual review.

2.3 Status of These Ground Rules

2.3.1 These Ground Rules set out the methodology and provide information about the publication of the FTSE RAFI Index Series.

2.4 Amendments to these Ground Rules

2.4.1 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 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 Index Governance Board before approval is granted.

¹ The term administrator is used in this document in the same sense as it is defined in [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](#) (the European Benchmark Regulation) and [The Benchmarks \(Amendment and Transitional Provision\) \(EU Exit\) Regulations 2019](#) (the UK Benchmark Regulation).

2.4.2 As provided for in the Statement of Principles for FTSE Russell Equity Indices, 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 Unless specifically detailed in this document, all areas of the methodology regarding the management of the FTSE RAFI Index Series are related to the FTSE Global Equity Index Series Ground Rules. The FTSE RAFI Indices methodology should therefore be read in conjunction with the FTSE Global Equity Index Series Ground Rules.

3.2 Corporate Actions and Events Guide

3.3 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 Capitalisation Weighted Indices using the following link:

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

3.4 Statement of Principles for FTSE Russell Equity 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 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 can be accessed using the following link:

[Statement_of_Principles.pdf](#)

3.5 Queries, Complaints and Appeals

A constituent or prospective constituent company (or professional advisor acting on behalf of the company), a national organisation or a group of no fewer than ten users of the Indices from different organisations acting in their professional capacity may appeal against decisions taken by FTSE Russell.

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

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

FTSE Russell's Appeal Process can be accessed using the following link:

[Appeals Against Decisions.pdf](#)

3.6 Index Policy for Trading Halts and Market Closures

3.6.1 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](#)

3.7 Index Policy in the Event Clients are Unable to Trade a Market or a Security

3.7.1 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 or a Security.pdf](#)

3.8 Recalculation Policy and Guidelines

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

For further information please 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 Indices.pdf](#)

3.9 Policy for Benchmark Methodology Changes

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

[Policy for Benchmark Methodology Changes.pdf](#)

3.10 FTSE Russell Governance Framework

3.10.1 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 using the following link:

[FTSE Russell Governance Framework.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

Eligible Securities

4.0 Eligible Securities

4.1 Global & Regional Indices

4.1.1 FTSE RAFI All-World 3000 Index

The FTSE RAFI All-World 3000 Index will consist of the 3000 companies with the largest RAFI fundamental values, selected from the constituents of the FTSE Global Total Cap Index which is part of the FTSE Global Equity Index Series subject to the following country eligibility rule (Rule 4.1.1A).

A. FTSE RAFI All-World 3000 Index - Country Eligibility Rule

A country classified by FTSE as Developed or Emerging is eligible.

For the emerging countries, eligibility is dependent on the country being a constituent of the FTSE RAFI Emerging Index (see Rule 4.1.9A).

Only securities from the eligible countries will be eligible for any FTSE RAFI Index.

The link below can be used to view FTSE Russell's current country classification: [Matrix of Markets](#)

4.1.2 FTSE RAFI Developed 1000 Index

The FTSE RAFI Developed 1000 Index will consist of the 1000 companies with the largest RAFI fundamental values, selected from the constituents of the FTSE Developed Total Cap Index.

4.1.3 FTSE RAFI Developed Asia Pacific ex Japan Index

The FTSE RAFI Developed Asia Pacific ex Japan Index will consist of the constituents of the following countries from the FTSE RAFI Developed ex US 1000 Index: Australia, Hong Kong SAR, New Zealand, Singapore and South Korea.

4.1.4 FTSE RAFI Developed Asia Pacific ex Japan ex Korea Index

The FTSE RAFI Developed Asia Pacific ex Japan ex Korea Index will consist of the constituents of the following countries from the FTSE RAFI Developed ex US 1000 Index: Australia, Hong Kong SAR, New Zealand and Singapore.

4.1.5 FTSE RAFI Developed Europe Mid Small Index

The FTSE RAFI Developed Europe Mid Small Index will be based on the European countries in the FTSE RAFI Developed ex US Mid Small 1500 Index.

4.1.6 **FTSE RAFI Developed ex US 1000 Index**

The FTSE RAFI Developed ex US 1000 Index will consist of the 1000 non US-listed companies with the largest RAFI fundamental values, selected from the constituents of the FTSE Developed ex US Total Cap Index. Country sub-indices are calculated in line with the FTSE RAFI Developed ex US 1000 Index.

4.1.7 **FTSE RAFI Developed ex US Mid Small 1500 Index**

The FTSE RAFI Developed ex US Mid Small 1500 Index will consist of the next 1500 companies with the largest RAFI fundamental values after the FTSE RAFI Developed ex US 1000 Index (see Rule 4.1.6).

4.1.8 **FTSE RAFI Developed 1000 ex Korea ex Israel Index**

The FTSE RAFI Developed 1000 ex Korea ex Israel Index will consist of the constituents of the FTSE RAFI Developed 1000 Index, excluding South Korea and Israel.

4.1.9 **FTSE RAFI Emerging Index**

The FTSE RAFI Emerging Index will consist of the 350 companies with the largest RAFI fundamental values, selected from the constituents of the FTSE Emerging Total Cap Index subject to the following country eligibility rule (Rule 4.1.9A).

A. FTSE RAFI Emerging Index - Country Eligibility Rule

A country classified by FTSE as Emerging is eligible for inclusion in the FTSE RAFI Emerging Index if the fundamental country weight in the FTSE Emerging Total Cap exceeds 1.5%. Countries that are existing members of the FTSE RAFI Emerging Index will remain eligible if the country weight exceeds 0.55%. A country will not be eligible if it fails these criteria.

Countries that are newly classified as Emerging are announced by FTSE Russell in September of each year. Newly classified Emerging countries will be evaluated against the above criteria after the country classification announcement in September. The results of this evaluation will be announced in advance of the March annual index review.

The link below can be used to view FTSE Russell's current country classification: [Matrix of Markets](#)

4.1.10 **FTSE RAFI Emerging plus Korea Index**

The FTSE RAFI Emerging plus Korea Index will consist of the 350 companies with the largest RAFI fundamental values, selected from the constituents of the FTSE Emerging Total Cap Index and FTSE South Korea Total Cap Index.

4.1.11 **FTSE RAFI Europe ex UK Index**

The FTSE RAFI Europe ex UK Index will consist of all the constituents from each European country in the FTSE RAFI Developed ex US 1000 Index, excluding the UK.

4.1.12 **FTSE RAFI Europe Index**

The FTSE RAFI Europe Index will consist of all the constituents from each European country in the FTSE RAFI Developed ex US 1000 Index.

4.1.13 **FTSE RAFI Developed Eurozone Index**

The FTSE RAFI Developed Eurozone Index will consist of all the constituents from each Euro denominated country in the FTSE RAFI Developed ex US 1000 Index.

4.1.14 **FTSE RAFI Kaigai 1000 Index**

The FTSE RAFI Kaigai 1000 Index will consist of the 1000 non Japan-listed companies with the largest RAFI fundamental values, selected from the constituents of the FTSE Developed ex Japan Total Cap Index.

4.1.15 **FTSE RAFI North America Index**

The FTSE RAFI North America Index will consist of the FTSE RAFI US 1000 Index and the FTSE RAFI Canada Index constituents. The FTSE RAFI Canada Index will consist of all the Canadian companies from the FTSE RAFI Developed ex US 1000 Index.

4.1.16 **FTSE RAFI Global ex US Real Estate Index**

The FTSE RAFI Global ex US Real Estate Index will consist of the 150 companies with the largest RAFI fundamental values, selected from the constituents of the FTSE Global ex US Total Cap Index that are classified by the Industry Classification Benchmark (ICB)⁵ as Real Estate (ICB Real Estate 3510 and Mortgage Real Estate Investment Trusts (302030)). Please note that the FTSE RAFI Global ex US Real Estate Index has been designed applying a real estate orientated fundamental value calculation. Please refer to Rule 5.3 for further details.

4.2 **Country Indices**

4.2.1 **FTSE RAFI Developed Countries Indices**

The FTSE RAFI Developed Countries Indices will consist of the constituents from each country of the FTSE RAFI Developed ex US 1000 Index.

4.2.2 **FTSE RAFI Italy 30 Index**

The FTSE RAFI Italy 30 Index will consist of the 30 companies with the largest RAFI fundamental values from the FTSE Italy Total Cap Index. FTSE RAFI Italy 30 Index constituents will be capped at a company level on a quarterly basis at 20%. Capping will be effective after the close of business following the third Friday in March, June, September and December. Please refer to Rule 9.1 for further details on the capping procedure.

4.2.3 **FTSE RAFI Mexico Index**

The FTSE RAFI Mexico Index will consist of all the constituents of the FTSE Mexico Total Cap Index.

4.2.4 **FTSE RAFI Sweden Index**

The FTSE RAFI Sweden Index will consist of all the constituents of the FTSE Sweden Total Cap Index

4.2.5 **FTSE RAFI UK 100 Index**

The FTSE RAFI UK 100 Index will consist of the 100 companies with the largest RAFI fundamental values from the FTSE All-Share Index. FTSE RAFI UK 100 Index constituents will be capped at a company level on a quarterly basis at 10%. Capping will be effective after the close of business following the third Friday in March, June, September and December. Please refer to Rule 9.1 for further details on the capping procedure.

4.2.6 **FTSE/JSE RAFI 40 Index**

The FTSE/JSE RAFI 40 Index will consist of the 40 companies with the largest RAFI fundamental values from the FTSE/JSE Africa All-Share Index. The FTSE/JSE RAFI 40 Index constituents will be

⁵ FTSE Indices migrated to the new ICB classification system in March 2021

capped at a company level on quarterly basis at 10%. For further details on the capping procedure, please refer to Rule 9.1.

4.2.7 FTSE/JSE RAFI All-Share and FTSE/JSE RAFI All-Share Capped Indices

The FTSE/JSE RAFI All-Share Index and FTSE/JSE RAFI All-Share Capped Index will consist of the constituents of the FTSE/JSE Africa All-Share Index, weighted by RAFI fundamental values. The FTSE/JSE RAFI All-Share Capped Index constituents will be capped at a company level on quarterly basis at 10%. For further details on the capping procedure, please refer to Rule 9.1.

4.2.8 FTSE RAFI US Indices

FTSE RAFI US Indices are based on a universe comprising of all the constituents of the FTSE USA Total Cap Index.

4.2.9 FTSE RAFI US 500 Index

The FTSE RAFI US 500 Index will consist of the 500 US-listed companies with the largest RAFI fundamental values, selected from the FTSE USA Total Cap Index.

4.2.10 FTSE RAFI US 1000 Index

The FTSE RAFI US 1000 Index will consist of the 1000 US-listed companies with the largest RAFI fundamental values, selected from FTSE Total Cap USA Index.

4.2.11 FTSE RAFI US 3000 Index

The FTSE RAFI US 3000 Index will consist of the 3000 US-listed companies with the largest RAFI fundamental values, selected from the FTSE USA Total Cap Index. If the number of companies in the review universe is less than or equal to 3000, the FTSE RAFI US 3000 Index will be comprised of all constituents with a positive fundamental value in the FTSE USA Total Cap Index.

4.2.12 FTSE RAFI US Mid Small 1500 Index

The FTSE RAFI US Mid Small 1500 Index will consist of the next 1500 US-listed companies with the largest RAFI fundamental values after the FTSE RAFI US 1000 Index selected from the FTSE USA Total Cap Index.

4.2.13 FTSE RAFI US 2500 Index

The FTSE RAFI US 2500 Index will consist of the 2500 US-listed companies with the largest RAFI fundamental values, selected from the FTSE USA Total Cap Index. It will therefore combine the constituents of the FTSE RAFI US 1000 Index and the FTSE RAFI US Mid Small 1500 Index.

4.2.14 Example of How the FTSE RAFI US Indices are Constructed

Position when ranked by RAFI Fundamental Value	FTSE RAFI US 500 Index	FTSE RAFI US 1000 Index	FTSE RAFI US Mid Small 1500 Index	FTSE RAFI US 2500 Index	FTSE RAFI US 3000 Index
1 to 500	•	•		•	•
501 to 1000		•		•	•
1001 to 1500			•	•	•
1501 to 2000			•	•	•
2001 to 2500			•	•	•
2501 to 3000					•

Note: the example above shows that the FTSE RAFI 1000 Index is made up of the top 1000 companies when ranked by RAFI fundamental value. The companies in the FTSE RAFI 1000 Index are also members of the FTSE RAFI US 2500 Index and FTSE RAFI US 3000 Index.

4.2.15 **FTSE RAFI US Real Estate 100 Index**

The FTSE RAFI US Real Estate 100 Index will consist of the 100 US companies with the largest RAFI fundamental values, selected from the constituents of the FTSE Total Cap US Index that are classified by the Industry Classification Benchmark (ICB) as Real Estate (ICB Real Estate 3510 and Mortgage Real Estate Investment Trusts (302030)). Please note that the FTSE RAFI US Real Estate 100 Index has been designed applying a real estate orientated fundamental value calculation. Please refer to Rule 5.3 for further details.

4.2.16 **FTSE RAFI Hong Kong/China 80 Net Index**

The FTSE RAFI Hong Kong/China 80 Net Index will consist of the 80 companies with the largest RAFI fundamental values from the constituents of FTSE Hong Kong Total Cap, FTSE China Total Cap (excluding B shares) and HSBC Holdings (Sedol: 6158163, Local code: 00005) listed in Hong Kong. The FTSE RAFI Hong Kong/China 80 Net Index constituents will be capped at a company level on a quarterly basis at 10%. Capping will be effective after the close of business following the third Friday in March, June, September and December. For further details on the capping procedure, please refer to Rule 9.1.

4.2.17 **FTSE RAFI Japan 350 Index**

The FTSE RAFI Japan 350 Index will consist of the 350 companies with the largest RAFI fundamental values from the constituents of the FTSE Japan Total Cap Index.

4.2.18 **FTSE RAFI UK 300 Index**

The FTSE RAFI UK 300 Index will consist of the 300 companies with the largest RAFI fundamental values from the constituents of the FTSE UK All-Share Index

4.2.19 **FTSE RAFI Australia 200 Index**

The FTSE RAFI Australia 200 Index will consist of the 200 companies with the largest RAFI fundamental values listed on the Australian Securities Exchange (ASX), provided that they are greater than USD 50 million by full market capitalization and pass the FTSE GEIS liquidity rule.

This index comprises equity securities listed on the ASX and may include primary, secondary and foreign-domiciled listings.

Companies whose business is that of holding equity and other investments (e.g. Investment Trusts) which are classified by the Industry Classification Benchmark as Closed End Investments (30204000) and Subsector Open End and Miscellaneous Investment Vehicles (30205000). will not be eligible for inclusion.

4.2.20 **FTSE RAFI Brazil 50 Index**

The FTSE RAFI Brazil 50 Index will consist of the 50 companies with the largest RAFI fundamental values from the FTSE Brazil Total Cap Index. Non-Brazilian domiciled listings and Brazilian companies that employ Unit listing structures that include participation in a foreign domiciled entity or Brazilian Depository Receipts will be excluded. Multiple lines are eligible for inclusion. The FTSE RAFI Brazil 50 Index may therefore contain more than 50 stocks (see Rule 5.5).

In the event that one line of a company represented in the FTSE RAFI Brazil 50 Index by two or more lines of stock is removed from the index, the RAFI fundamental value calculated for the company as a whole is allocated to the remaining lines of stock in proportion to their investable market capitalisations as of the close of business on the day before the effective date of the deletion.

The FTSE RAFI Brazil 50 Index will be capped at company level on a quarterly basis at 10%. Capping will be effective after the close of business following the third Friday in March, June, September and December. Please refer to Rule 9.1 for further details on the capping procedure.

4.2.21 **FTSE RAFI US BDR 20 Index**

The FTSE RAFI US BDR 20 Index will consist of the 20 Brazilian Depository Receipts (BDRs) with the largest RAFI fundamental values from the universe of listed BDRs⁶⁷ as listed on BM&F Bovespa where the underlying security has a U.S. nationality as determined by FTSE. Where there are multiple lines of equity capital in a company, all are included and priced separately, provided that they pass index eligibility screens in their own right, therefore the FTSE RAFI US BDR 20 Index may contain more than 20 stocks (see Rule 5.7).

If a constituent is deleted intra-review (see Rule 6.2), the FTSE RAFI US BDR 20 Index will contain fewer than 20 companies.

4.2.22 **FTSE RAFI Canada Mid Small Index**

The FTSE RAFI Canada Mid Small Index will consist of constituents of the FTSE Canada All Cap Index that rank outside the top 100 (in descending order) by RAFI fundamental value.

⁶ NOTE: Due to insufficient BDRs prior to 2010, the top 20 US companies by RAFI Fundamental values were used for the back history in years 2008 and 2009.

⁷ The referència price is used for BDRs.

Section 5

Periodic Review of Constituents

5.0 Periodic Review of Constituents

- 5.1** The FTSE RAFI Index Series will be reviewed annually 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 underlying indices.
- 5.2** 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 achieved 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.
- 5.3** The review of the FTSE RAFI Index Series and the calculation of the fundamental weighting of a company are carried out using the following factors as found in a company's annual returns:
- A. Sales = company sales averaged over the prior five years
 - B. Cash Flow = company cash flow averaged over the prior five years
 - C. Book Value = company book value at the review date
 - D. Dividends = total dividend distributions averaged over the last five years
- 5.4** A real estate orientated fundamental value has been used for the FTSE RAFI Real Estate Indices. The review of the FTSE RAFI Real Estate Indices and the calculation of the fundamental weighting of a Real Estate company are carried out using the following factors as found in a company's annual returns:
- A. Revenues = company revenues averaged over the prior five years
 - B. Total Assets = company assets averaged over the prior five years
 - C. Adj. Funds from Operations = company AFO averaged over the prior five years
 - D. Dividends = dividend distributions averaged over the prior five years
- 5.5** If a company has data available but it amounts to fewer than five years, fundamental factors are calculated by averaging as many years of data as available.

5.6 The RAFI fundamental value is calculated for each company as a whole, rather than for individual securities issued by the company. Where a company is represented within the FTSE RAFI Index Series by two or more lines of stock, the company's RAFI fundamental value is allocated between each line of stock in proportion to investable market capitalisation as of the close of business on the Monday 4 weeks prior to the review effective date.

5.7 Companies will be considered ineligible at the FTSE RAFI Index review if their fundamental data is not yet available and / or the fundamental data cannot be derived from pre-existing companies. For example, companies such as recent listings, recently merged companies or investment entities that do not report the necessary fundamental data.

5.8 Review Process

5.8.1 The annual FTSE RAFI Index Series review is based on FTSE's universe of companies. Four fundamental ratios are calculated for each stock to capture its relevance in the universe. Those fundamental ratios measure the representation of each stock in the universe applying averages calculated backwards over five years as detailed in Rules 5.3 and 5.4.

A. The representation of each stock in the universe as a percentage of the Sales figure as described in Rule 5.3.a is calculated.

B. The representation of each stock in the universe as a percentage of the Cash Flow figure as described in Rule 5.3.b is calculated.

C. The representation of each stock in the universe as a percentage of the Book Value figure as described in Rule 5.3.c is calculated.

D. The representation of each stock in the universe as a percentage of the Dividends figure as described in Rule 5.3.d is calculated. If a stock has not paid dividends in the past five years, it will have a percentage representation of zero.

5.8.2 The RAFI fundamental value is defined as 10,000,000 times the average of the four percentage representation figures above. However, for a stock with a zero dividend percentage, its RAFI fundamental value is defined as 10,000,000 times the average of the three remaining percentage representation figures (sales, cash flow and book value).

5.8.3 As part of the FTSE RAFI Australia 200 Index annual review, Chess Depositary Interests (CDI's) will not have their RAFI fundamental values adjusted by the proportion of shares that are available in CDI form, i.e. they will use the full fundamental value of the underlying company.

5.8.4 All stocks are ranked in descending order by their investable RAFI fundamental value.

5.8.5 Companies are selected by their RAFI fundamental values, according to each specific index criteria. The full list of FTSE RAFI Indices can be found in Section 4.

5.8.6 To calculate the FTSE RAFI adjustment factor, FTSE Russell divides the investable RAFI fundamental value of each constituent by its investable market capitalisation as at the close of business on the Monday 4 weeks prior to the review effective date. This is the weighting factor used in the FTSE RAFI Index Series calculation. Please refer to Section 8 for more information regarding the FTSE RAFI Index Series calculation. Where

$$\text{Investable RAFI fundamental value} = \text{RAFI fundamental value} \times \text{investability weighting}$$

5.8.7 A company which has a share class that is excluded from the underlying FTSE RAFI universe but also has a share class that is available to foreign investors and is included in the FTSE RAFI universe will have its investability weighting equal to the whole company that is freely available to foreign investors.

For example, consider a company which is 90% owned by the state through a domestic share class (which is excluded from the underlying FTSE RAFI universe) and a 10% share class which is freely floating and is available to foreign investors (which is included in the underlying FTSE RAFI universe at a 100% investability weight). The weight assigned to the company will therefore be 10%, which is freely available to foreign investors.

5.8.8 The FTSE RAFI Australia 200 Index adjustment factor is calculated based on the shares available to domestic investors (i.e. excluding foreign ownership restrictions).

5.9 Application of Liquidity Limits

Liquidity limits are applied to all companies scored by Research Affiliates.

Let FV_i be the RAFI fundamental value of the i^{th} company in the universe that is a union of FTSE GEIS and the US exchanges universe (see Rule 4.2.7). The fundamental weight FW_i for company i is:

$$FW_i = FV_i / \sum_{i=1}^N FV_i$$

Let $ADTV_i$ be the maximum of the 30-day and 90-day median daily traded value in USD as of the of the last business day of January. The liquidity weight LW_i for company i is:

$$LW_i = ADTV_i / \sum_{i=1}^N ADTV_i$$

The 30-day median traded value will be used where there is less than 90 days of historical data. Where there is less than 30 days of historical data, the stock will have a RAFI fundamental value of zero. Where there are multiple lines of equity capital in a company, the traded value will be the aggregation of all lines in the aforementioned company.

The liquidity ratio (LR) is defined as the ratio of fundamental weight to liquidity weight. The liquidity ratio for company i is:

$$LR_i = FW_i / LW_i$$

Where the liquidity ratio is more than 4, the new fundamental value is calculated as:

$$\widehat{FV}_i = 4 \times LW_i \times \sum_{i=1}^N FV_i$$

After the fundamental values are updated for all companies using the above formula, new fundamental weights and liquidity ratios are calculated. The process is repeated until all liquidity ratios attain a value not exceeding 4. Note that this process will only modify the fundamental values of stocks that exceed the liquidity limit.

The fundamental values obtained as a result of this process will be used for the ranking, selection, and weighting of index constituents.

Section 6

Changes to Constituent Companies

6.0 Changes to Constituent Companies

6.1 Additions

6.1.1 When a constituent is added to the underlying index universe, the constituent will be considered for inclusion at the next March annual review of the FTSE RAFI Index Series.

6.2 Deletions

6.2.1 There will be no intra-review deletions except in the event of corporate actions and events covered in Section 7, or of securities which are subject to surveillance by stock exchanges. Such securities will be deleted in line with their removal from the underlying index.

Section 7

Corporate Action and Events

7.0 Corporate Action and Events

7.1 If a constituent has a stock split, stock consolidation, rights issue, bonus issue, a change in the number of shares in issue or a change in free float (with the exception of tender offers), the constituent's weighting in the FTSE RAFI Index Series will remain unchanged pre and post such an event.

7.2 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 Capitalisation Weighted Indices using the following link:

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

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. The index will be adjusted in line with 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 Russell will provide notice advising of the timing of the change.

7.3 Suspension of Dealing

Suspension of Dealing rules can be found within the Corporate Actions and Events Guide for Non Market Capitalisation Weighted Indices.

7.4 Takeovers, Mergers and Demergers

The treatment of takeovers, mergers and demergers can be found within the Corporate Actions and Events Guide for Non Market Capitalisation Weighted Indices.

Section 8

FTSE RAFI Index Series Calculation

8.0 FTSE RAFI Index Series Calculation

- 8.1** Constituents are weighted within the FTSE RAFI Index Series by their investable RAFI fundamental value rather than their market capitalisation.
- 8.2** The investable RAFI fundamental value for each constituent is applied to the Index calculation with the addition of the FTSE RAFI adjustment factor c_i .
- 8.3** FTSE RAFI Index Series calculation uses the same methodology as other FTSE Russell's indices. However, the FTSE RAFI adjustment factor c_i increases or reduces the weight of a constituent based on its fundamentals. The FTSE RAFI adjustment factor c_i therefore neutralises the conventional investable market capitalisation (i.e. after the application of any investability weighting) of the constituent.
- 8.4** FTSE Russell calculates the FTSE RAFI adjustment factor c_i for each stock at review, dividing its investable RAFI fundamental value by its investable market capitalisation in US Dollars (i.e. after the application of any investability weighting) as at the close of business on the Monday 4 weeks prior to the review effective date. Where:

$$c_i = \text{RAFI fundamental value} \times \frac{\text{investability weighting}}{\text{price} \times \text{shares} \times \text{investability weighting}}$$

- 8.5** The FTSE RAFI adjustment factor c_i is applied to the investable market capitalisation (i.e. after the application of any investability weighting). This cancels out the market capitalisation effect and the investable RAFI fundamental value is captured. Where:

$$\text{price} \times \text{shares} \times \text{investability weighting} \times \text{FTSE RAFI adjustment factor}$$

- 8.6** Example for Company A with a RAFI Fundamental Value of 10,000

If Company A had a price of US\$ 2 and 5,000 shares in issue, its market capitalisation would be US\$ 10,000. If it was assumed that its investability weight was 50%, its investable market capitalisation (i.e. after the application of any investability weighting) would be US\$ 5,000.

The FTSE RAFI adjustment factor for Company A would be calculated applying the formula in Rule 8.4 and would be equal to $c_i = 10,000 \times \frac{50\%}{\text{US\$}5,000} = 1.0$

Thus, applying the formula in Rule 8.5 the investable RAFI fundamental value is captured as $2 \times 5,000 \times 50\% \times 1.0 = 5,000$

8.7 The application of the FTSE RAFI adjustment factor to the conventional investable market capitalisation ensures that the price performance of each stock is taken into account when calculating the index and also that any corporate actions that may impact the price of a constituent such as rights or scrip issues are accounted for.

8.8 Hence the capital index formula is as follows:

$$\sum_{i=1}^N \frac{(p_i \times e_i \times s_i \times f_i \times c_i)}{d}$$

Where,

- N is the number of securities in the index.
- p_i is the latest trade price of the component security i (or the price at the close of the index on the previous day).
- e_i is the exchange rate required to convert the security's currency into the Index's base currency.
- s_i is the number of shares in issue used by FTSE Russell for security i , as defined in these Ground Rules.
- f_i is the Investability Weighting Factor to be applied to security i to allow amendments to its weighting, expressed as a number between 0 and 1, where 1 represents a 100% free float. This factor is published by FTSE Russell for each security in the underlying index.
- d is the divisor, a figure that represents the total issued share capital of the Index at the base date. The divisor can be adjusted to allow changes in the issued share capital of individual securities to be made without distorting the index.
- $C_i = \frac{\text{RAFI fundamental value} \times \text{investability weighting}}{\text{price} \times \text{shares} \times \text{investability weighting}}$

8.9 Refinitiv real time exchange rates are used in the index calculations which are disseminated in real-time. Exchange rates used in the End of Day calculations are WM/Refinitiv Closing Spot Rates, collected at 16:00 UK time.

8.9.1 For the FTSE RAFI US BDR 20 Index, the WM/Refinitiv Closing Spot Rates, collected at 16:00 EST, are used in the End of Day index calculation.

Section 9

FTSE RAFI Capping Methodology

9.0 FTSE RAFI Capping Methodology

9.1 FTSE RAFI Brazil 50, FTSE RAFI Italy 30, FTSE RAFI UK 100, FTSE/JSE RAFI 40, FTSE RAFI Hong Kong/China 80 Net Index, FTSE/JSE RAFI All-Share Capped Indices Capping Methodology.

9.1.1 The FTSE RAFI capping process aims to reduce any concentration levels that may exist.

9.1.2 The calculation of the constituent capping factors (c) will be based on prices at close on the second Friday of the review month using shares in issue, investability weights and FTSE RAFI adjustment factor as designated to take effect after close on the third Friday of the review month (i.e. taking effect on the review effective date).

9.1.3 The calculation will take into account any corporate actions/events that take effect after close on the second Friday of the review month up to and including the review effective date if they have been announced and confirmed by the second Friday of the review month.

9.1.4 Corporate actions / events announced after the second Friday of the review month that become effective up and including the review effective date will not result in any further adjustment.

The algorithm is applied to each constituent of the FTSE RAFI Indices that requires capping, i.e. any constituent whose uncapped weight is greater than the capping level.

The Constituent Capping Factor c_i is given by:

$$c_i = \frac{Z}{I \times (p_i \times s_i \times f_i)} \sum_{j \in J} (p_j \times s_j \times f_j)$$

Where,

- i denotes the security to be capped.
- j denotes an uncapped security.
- J is the subset of securities that are uncapped.
- p_k is the official closing price of the k^{th} security.
- s_k is the number of shares in issue of the k^{th} security.
- f_k is the free float factor of the k^{th} security.
- I is the percentage of the index represented by all uncapped constituents.
- Z is the percentage capping level.

Appendix A: Index Series Opening and Closing Hours

Index	Open	Close
FTSE RAFI All-World 3000 Index	00:30	21:10
FTSE RAFI Canada Index	14:30	21:10
FTSE RAFI Developed 1000 Index	00:30	21:10
FTSE RAFI Developed Asia Pacific ex Japan Index	00:30	10:00
FTSE RAFI Developed Europe Mid Small Index	08:00	16:30
FTSE RAFI Developed ex US 1000 Index	00:30	21:10
FTSE RAFI Developed ex US Mid Small 1500 Index	00:30	21:10
FTSE RAFI Emerging Index	01:00	21:10
FTSE RAFI Europe Index	08:00	16:30
FTSE RAFI Developed Eurozone Index	08:00	16:30
FTSE RAFI Global ex US Real Estate Index	00:30	21:10
FTSE RAFI Australia 200 Index	00:00	06:15
FTSE RAFI Brazil 50 Index	13:00	21:10
FTSE RAFI Hong Kong/China Index	01:30	08:00
FTSE RAFI Italy 30 Index	08:00	16:30
FTSE RAFI Japan Index	23:50	06:20
FTSE RAFI Japan 350 Index	23:50	06:20
FTSE/JSE RAFI 40 Index	07:00	15:00
FTSE RAFI Sweden Index	08:00	16:40
FTSE RAFI Switzerland Net Index	08:00	16:30
FTSE RAFI UK 100 Index	08:00	16:30
FTSE RAFI UK 300 Index	08:00	16:30
FTSE RAFI US 100 Real Estate Index	14:30	21:10
FTSE RAFI US 500 Index	14:30	21:10
FTSE RAFI US 1000 Index	14:30	21:10
FTSE RAFI US 3000 Index	14:30	21:10
FTSE RAFI US Mid Small 1500 Index	14:30	21:10

Notes: Closing values at 21:10 will be disseminated at 21:30.

Timings are UK hours, from Monday to Friday.

WM/Refinitiv Closing Spot Rates compiled by The WM Company are used.

Appendix B: Status of Indices

Price Indices are calculated on a real-time basis:

For further details of real time definitions please refer to the following guide:

[Real Time Status Definitions.pdf](#)

The official opening and closing hours of the Indices are set out in Appendix A. Variations to the official hours of the Indices will be published by FTSE Russell.

Appendix C: 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 FTSE RAFI Index Series please visit www.ftserussell.com or e-mail info@ftserussell.com. Contact details can also be found on this website.

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