

Construction and Methodology



Russell U.S. Equity Indexes

for IOSCO Compliant Indexes
v4.9



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Section 1

Introduction

1.0 Introduction

1.1.1 Russell Indexes provides float-adjusted, market capitalization–weighted indexes for a precise picture of the market. Today, \$9.1 trillion in assets are benchmarked to the Russell. ¹

1.1.2 Frank Russell Company, the Benchmark Administrator of the Russell U.S. Equity Indexes as defined by the IOSCO Principles for Financial Benchmarks published in July 2013, applied its practical, industry-leading U.S. Index methodology to the world’s equity markets and launched its family of global indexes. Covering 78 markets worldwide, we provide comprehensive benchmarks covering 98% of investable global equity, making them more representative of the market.

1.2 The Russell US Equity Indexes do not take account of ESG factors in the index design.

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.

1.4 IOSCO compliance

1.4.1 FTSE Russell considers that the Russell U.S. Equity Indexes meets the IOSCO Principles for Financial Benchmarks as published in July 2013. Full details can be accessed at www.iosco.org

1.4.2 Details of the FTSE Russell Statement of Compliance with respect to the IOSCO Principles can be accessed using the following link: www.ftserussell.com/iosco-principles

1.5 Available indexes

- Capital and total return indexes.
- Net total return indexes based on specified withholding tax rates.
- Indexes calculated in currencies other than the base currency (USD).
- Currency hedged indexes.
- Capped indexes; for full details see the FTSE Russell Capping Methodology guide.

¹ Data as of December 31, 2019 as reported on April 1, 2020 by eVestment for institutional assets, Morningstar for retail mutual funds, insurance products, and ETFs, and additional passive assets directly collected by FTSE Russell.

- Constituent size bands – large, mid, small and micro capitalisation indexes.
- Sector indexes.

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

- 1.5.1 All Russell U.S. equity indexes are subsets of the Russell 3000E Index. A list of available tickers and index values can be found in Appendix A.
- 1.5.2 Price, total, net, and hedged data for the Russell U.S. indexes is available in the following currencies. Exchange rates used in the End of Day calculations are WM/Reuters Closing Spot Rates™, collected at 16:00 London time (further information on The WM/Reuters Closing Spot Rates service is available from The WM Company).
- 1.5.3 The base currency of the benchmark is US Dollars. Index values may also be published in other currencies.

AUD	CAD	CHF	EUR	GBP	JPY	USD	SGD	ZAR
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Broad market U.S. indexes	Large cap U.S. indexes	Small cap U.S. indexes
Russell 3000E Index	Russell 1000® Index	Russell 2000® Index
Russell 3000E Value Index	Russell 1000® Value Index	Russell 2000® Value Index
Russell 3000E Growth Index	Russell 1000® Growth Index	Russell 2000® Growth Index
Russell 3000® Index	Russell 1000® Defensive Index®	Russell 2000® Defensive Index®
Russell 3000® Value Index	Russell 1000® Dynamic Index®	Russell 2000® Dynamic Index®
Russell 3000® Growth Index	Russell 1000® Growth-Defensive Index®	Russell 2000® Growth-Dynamic Index®
Russell 3000® Defensive Index®	Russell 1000® Growth-Dynamic Index®	Russell 2000® Value-Defensive Index®
Russell 3000® Dynamic Index®	Russell 1000® Value-Defensive Index®	Russell 2000® Value-Dynamic Index®
Russell 3000® Growth-Defensive Index®	Russell 1000® Value-Dynamic Index®	Russell 2000® Growth-Defensive Index®
Russell 3000® Growth-Dynamic Index®		
Russell 3000® Value-Defensive Index®		
Russell 3000® Value-Dynamic Index®		

- 1.5.4 FTSE Russell hereby notifies users of the Russell U.S. Equity Indexes 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 should be able to withstand, or otherwise address the possibility of changes to, or cessation of, the index series. This Construction and Methodology document 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. The review process will include consultation on any proposed changes with the relevant FTSE Russell advisory committees and the FTSE Russell Policy Advisory Board.
- 1.5.5 The Terms of Reference of the FTSE Russell Policy Advisory Board are set out on the FTSE Russell website and can be accessed using the following link: [FTSE Russell Policy Advisory Board.pdf](#)



Section 2

Management Responsibilities

2.0 Management Responsibilities

2.1 FTSE International Limited (FTSE)

2.1.1 FTSE is the benchmark administrator.²

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 Methodology;
- carry out the periodic index reviews of the index series and apply the changes resulting from the reviews as required by the Methodology;
- publish changes to the constituent weightings resulting from their ongoing maintenance and the periodic reviews;
- disseminate the indexes.

2.2 FTSE Russell External Advisory Committees

2.2.1 To assist in the oversight of the indexes FTSE Russell has established the following external advisory committees:

- FTSE Russell Americas Regional Equity Advisory Committee
- FTSE Nationality Advisory Committee
- FTSE Russell Country Classification Advisory Committee
- FTSE Russell Industry Classification Advisory Committee

2.2.2 The Terms of Reference of the FTSE Russell external advisory committees are set out on the FTSE Russell website and can be accessed using the following link:

[Terms of Reference](#)

² 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).

2.3 **Amendments to The Methodology**

- 2.3.1 This Methodology shall be subject to regular review by FTSE Russell to ensure that they continue to best reflect the aims of the indexes. Any proposals for significant amendments to this Methodology 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

This Methodology should be read in conjunction with the following policy documents which can be accessed using the links below:

3.1 Corporate Actions and Events Guide

- 3.1.1 Full details of changes to constituent companies due to corporate actions and events can be accessed in the Corporate Actions and Events Guide using the following link:

[Corporate Actions and Events Guide.pdf](#)

3.2 Statement of Principles

- 3.2.1 Indexes need to keep abreast of changing markets and the Russell Index Methodologies cannot anticipate every eventuality. Where the Methodology does not fully cover a specific event or development, FTSE Russell will determine the appropriate treatment by reference to the Statement of Principles which summarizes 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.

FTSE Russell's Statement of Principles can be accessed using the following link:

[Statement of Principles.pdf](#)

3.3 Queries, Complaints and Appeals

- 3.3.1 A constituent or prospective constituent company (or professional advisor acting on behalf of the company), a national organization or a group of no fewer than ten users of the Indexes from different organizations 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](#)

3.4 **Index Policy for Trading Halts and Market Closures**

- 3.4.1 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](#)

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

- 3.5.1 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](#)

3.6 **Recalculation Policy and Guidelines**

- 3.6.1 The Russell US Equity Indexes are recalculated whenever errors or distortions occur that are deemed to be significant. Users of the Russell US Equity Indexes are notified through appropriate media.

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.

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

3.7 **Policy for Benchmark Methodology Changes**

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

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

3.8 **FTSE Russell Governance Framework**

- 3.8.1 To oversee its indexes, 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 Benchmarks³, the European benchmark regulation⁴ and the UK benchmark regulation⁵. The FTSE Russell Governance Framework can be accessed using the following link:

[FTSE Russell Governance Framework.pdf](#)

³ IOSCO Principles for Financial Benchmarks Final Report, FR07/13 July 2013

⁴ 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

⁵ The Benchmarks (Amendment and Transitional Provision) (EU Exit) Regulations 2019

Section 4

Basic Methodology

4.0 Basic Methodology

4.1.1 Russell Indexes are objectively constructed and based on transparent rules. The broadest U.S. index is the Russell 3000E Index, which contains the largest 4,000 U.S. companies. Sub-indexes in the Russell 3000E Index are broken out by market capitalization and style.

4.1.2 The members of the Russell 3000E Index and its subsets are determined each year during annual reconstitution and enhanced quarterly with the addition of initial public offerings (IPOs).

4.2 Annual reconstitution

4.2.1 Annual reconstitution is the process by which all Russell Indexes are completely rebuilt. Reconstitution is a vital part of the creation of a benchmark that accurately represents a particular market segment. Companies may get bigger or smaller over time, or periodically undergo changes in their style characteristics. Reconstitution ensures that companies continue to be correctly represented in the appropriate Russell Indexes.

4.2.2 On the rank day in May each year (typically the last trading day in May but a confirmed timetable is announced each spring) , all eligible securities are ranked by their total market capitalization. The largest 4,000 become the Russell 3000E Index, and the other Russell U.S. Indexes are determined from that set of securities. If there are not 4,000 eligible securities in the U.S. market, the entire eligible set is included.

4.2.3 Reconstitution occurs on the last Friday in June. However, at times this date is too proximal to exchange closures and abbreviated exchange trading schedules when market liquidity is exceptionally low. In order to ensure proper liquidity in the markets, when the last Friday in June falls on the 29th or 30th, reconstitution will occur on the preceding Friday. A full calendar for reconstitution is made available each spring.

4.3 Quarterly initial public offerings

4.3.1 Eligible initial public offerings (IPOs) are added to Russell indexes quarterly in accordance with the schedule in Section 5. FTSE Russell adds IPOs each quarter to ensure that new additions to the institutional investing opportunity set are reflected in representative indexes. FTSE Russell focuses on IPOs each quarter because it is important to reflect market additions between reconstitution periods.

Companies filing an initial public offering registration statement (or the local equivalent when outside the U.S.) and listing within the same quarter* on an eligible US exchange are reviewed for eligibility regardless of previous trading activity (exceptional or unique events may induce extraordinary treatment which will be communicated appropriately). Companies currently trading on foreign exchanges or OTC markets will be reviewed for eligibility if:

- The company files an Initial Public Offering statement for an eligible US exchange
- The offering is announced to the market and confirmed by our vendors as an IPO

* a one month window will be used to ensure that companies submitting the requisite filings just outside of the quarter are not excluded from eligibility.

To ensure that the requisite number of shares are available to satisfy the inclusion criteria and to ensure an accurate company weighting within the index calculation, FTSE Russell will distinguish between fully guaranteed IPOs and variable/best effort IPOs and direct listing IPOs as follows:

4.3.2 Fully Guaranteed IPOs (i.e. underwritten)

- The free float is assigned based on the post IPO shareholder structure contingent on this information being publicly available and disclosed in the appropriate filings prior to the IPO rank date. Otherwise, the free float will be based on the number of shares publicly offered at the time of the IPO.

4.3.3 Variable/Best Effort/Direct Listing IPOs

- To be considered as a quarterly addition, variable/best effort/direct listing IPOs will require a company press release, a company filing, a stock exchange notification, or a disclosure from a major shareholder which either confirms the actual number of shares sold on or prior to the IPO rank date, or confirms the post IPO shareholders structure.
- If the number of shares sold during the IPO, or the post IPO shareholder structure, remains unknown on the IPO rank date, the evaluation of the company will be deferred to the subsequent quarterly review (noting that the requisite information must be disclosed prior to the rank date of the following quarter to be considered). If no disclosure is published prior to the rank date of the following quarter, the company will be evaluated during the annual reconstitution process only (and inclusion will remain contingent on the above disclosures).

For the avoidance of doubt:

- Shares which are locked up during the IPO will be considered for inclusion within the free float of a company only once the lock up has expired.
- Green shoes (underwriter overallocation options) will only be considered for inclusion within the free float of a company once the green shoe has been exercised and publicly confirmed (confirmation must be available on or prior to the rank date).



Section 5

Defining Eligible Securities

5.0 Defining Eligible Securities

5.1.1 Russell U.S. Indexes capture approximately 99% of the U.S. equity market and 100% of the investable U.S. market. Below are the requirements for securities' inclusion in the Russell U.S. Indexes.

5.2 Determining U.S. Companies

5.2.1 Historically, asset owners have diversified their risk by assigning assets to specific countries. Some companies incorporate in a specific country for tax reasons, while some companies choose better access to capital. Therefore, to most closely track country risk, FTSE Russell uses objective criteria to assign companies to the U.S. equity market. All companies that are determined to be part of the U.S. equity market are included in the Russell U.S. Indexes.

5.3 Home-country indicators (HCIs)

5.3.1 If a company incorporates in, has a stated headquarters location in, and also trades on a standard exchange⁶ in the same country, (ADRs and ADSs are not eligible), the company is assigned to its country of incorporation. If any of the three criteria do not match, FTSE Russell then defines three home country indicators (HCIs). The HCIs are as follows:

1. Country of incorporation
2. Country of headquarters
3. Country of the most liquid exchange as defined by two-year average daily dollar trading volume (ADDTV) from all exchanges within a country

5.3.2 After the HCIs are defined, the next step in the country assignment involves an analysis of assets by location. FTSE Russell cross-compares the primary location of the company's assets with the three HCIs. If the primary location of assets matches ANY of the HCIs, then the company is assigned to its primary asset location (see Appendix B for specifics on the definition of primary asset/revenue location).

5.3.3 If there is not enough information to determine a company's primary location of assets, FTSE Russell uses the primary location of the company's revenue for the same cross-comparison and assigns the

⁶ Standard Exchanges are considered to be those listed in [Appendix A 'Eligible Exchanges and Market Segments' of the FTSE Global Equity Index Series Ground Rules](#) as well as the Toronto Stock Exchange Venture Market.

company to the appropriate country in a similar fashion. FTSE Russell uses an average of two years of assets or revenue data for analysis to reduce potential turnover.

- 5.3.4 If conclusive country details cannot be derived from assets or revenue, FTSE Russell assigns the company to the country in which its headquarters are located unless the country is a Benefit Driven Incorporation (BDI) country (see Appendix B for a list of BDI countries). If the country in which its headquarters are located is a BDI, the company is assigned to the country of its most liquid stock exchange.
- 5.3.5 If a company is designated as a Chinese “N Share”, it will not be considered for inclusion within the Russell US Indexes. An “N Share” company is controlled by Mainland Chinese entities, companies or individuals. It must be incorporated outside of China and traded on the New York Stock Exchange, the NASDAQ exchange, or the NYSE American with a majority of its revenue or assets derived from PRC. Further information regarding the designation of N shares is available within Appendix B.

5.4 Share Descriptions

- 5.4.1 For a description of Chinese share classes please see the “Guide to Chinese Share Classes” document which can be accessed using the following link:

[Guide to Chinese Share Classes.pdf](#)

- 5.4.2 The definitions these share classes are reviewed annually in September.

5.5 Steps to determining U.S. country assignment:

STEP 1	Is the company incorporated in, traded in, and headquartered in one unique country?	YES – Classified in the unique country	NO – Move to Step 2
STEP 2	Are the company’s reported assets primarily located in one of the HCIs?	YES – Classified in the country of primary assets	NO – Move to Step 3
STEP 3	Are the company’s reported revenues primarily derived from one of the HCIs?	YES – Classified in the country of primary revenue	NO – Move to Step 4
STEP 4	Is the company headquartered in a non-BDI country?	YES – Classified in the country of headquarters	NO – Assigned to primary exchange country

Note: If the company does not trade on a major U.S. exchange it is not eligible.

Example 1: XYZ Company

HCIs: Incorporation: U.S.

Headquarters: China

Trading locations: U.S., U.K., Hong Kong (most liquid exchange: U.S.)

Asset location: 100% in Canada

STEP 1	Is the company incorporated in, traded in, and headquartered in one unique country?	NO – Move to Step 2
STEP 2	Are the company’s reported assets primarily located in the one of the HCIs?	NO – Canada Move to Step 3
STEP 3	Are the company’s reported revenues primarily located in one of the HCIs?	NO – No Data Move to Step 4

STEP 4	Is the company headquartered in a non-BDI country?	YES – China	CLASSIFICATION: China
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Example 2: ABC Company

HCI: Incorporation: Ireland

Headquarters: Ireland

Trading locations: U.S., Ireland, Germany (most liquid exchange: U.S.)

Asset location: 85% in U.S.

STEP 1	Is the company incorporated in, traded in, and headquartered in one unique country?	YES – Ireland	Assigned to Ireland
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5.6 Trading requirements

5.6.1 All securities eligible for inclusion in Russell U.S. Indexes must trade on an eligible U.S. exchange. Bulletin board, pink sheet or over-the-counter (OTC) traded securities are not eligible for inclusion, including securities for which prices are displayed on the FINRA ADF.

5.7 Eligible U.S. Exchanges: CBOE, NYSE, NYSE American, NASDAQ, ARCA.

5.8 Minimum closing price

5.8.1 A stock must have a close price at or above \$1.00 (on its primary exchange) on the last trading day in May to be considered eligible for inclusion. In order to reduce unnecessary turnover, if an existing index member’s closing price is less than \$1.00 on the last trading day in May, it will be considered eligible if the average of the daily closing prices (from its primary exchange) during the month of May is equal to or greater than \$1.00. If an existing index member does not trade on the rank day in May, it must price at \$1.00 or above on another eligible U.S. exchange to remain eligible. A stock added during the quarterly IPOs process is considered a new index addition and therefore must have a close price on its primary exchange at or above \$1.00 on the last day of the IPO eligibility period in order to qualify for index inclusion.

5.9 Minimum total market capitalization

5.9.1 Companies with a total market capitalization less than \$30 million are not eligible for inclusion in Russell U.S. indexes.

5.10 Minimum available shares / float requirement

5.10.1 Companies with only a small portion of their shares available in the marketplace are not eligible for the Russell Indexes. Companies with less than an absolute 5% of shares available will be removed from eligibility. See Section 7: Adjustments to Members’ Shares Outstanding (Float), for details on calculations of available shares.

5.11 Company structure

5.11.1 Companies structured in the following ways are excluded from inclusion in Russell Indexes: royalty trusts, U.S. limited liability companies, closed-end investment companies (As a point of clarification: Companies that are required to report Acquired Fund Fees and Expenses (as defined by the SEC), including Business Development Companies, are not eligible for inclusion, blank-check companies, special-purpose acquisition companies (SPACs), and limited partnerships. Exchange Traded Funds (ETFs) and mutual funds are also excluded.

5.12 **UBTI screening**

- 5.12.1 Companies that produce unrelated business taxable income (UBTI) are restricted from ownership for tax-exempt investors. In recognition of this, FTSE Russell screens all REIT's and PTP's, removing any security from eligibility that generates or has historically generated UBTI and has not taken steps to block UBTI to equity holders. The research process is conducted as part of FTSE Russell's annual rebalance effort. Additional screening will not be assessed or changed outside of the reconstitution period. Information used to confirm UBTI impact includes the following publicly available sources: 10-K, SEC Form S-3, K-1, company annual report, dividend notices or company website.
- 5.12.2 For UBTI to be passed to a security holder, the UBTI must be produced by the company directly. UBTI incurred by a subsidiary will not be realized by the holder of the parent entity and would not require removal of the parent company from eligibility.
- 5.12.3 If a company restructures to block UBTI, they will remain eligible for index inclusion. Acceptable forms of restructure are as follows:
1. Formal creation of a shell entity or offshore vehicle ensuring that any dividend payment is void of UBTI.
 2. If within a public filing (SEC filing, dividend disclosure, press release) the company declares that any UBTI producing assets have been sold AND no future intent to purchase UBTI producing assets exists. This declaration of intent must clearly state that the company's past investment strategy has changed and the intent is to remove the exposure of UBTI to the end holder.

5.13 **Shares excluded**

- 5.13.1 The following share types are not eligible for inclusion: preferred and convertible preferred stock, redeemable shares, participating preferred stock, warrants, rights, depositary receipts, installment receipts and trust receipts.

5.14 **Deadline for inclusion**

- 5.14.1 Stocks must be listed on the rank day in May and FTSE Russell must have access to documentation on that date supporting the company's eligibility for index inclusion. This includes corporate description, verification of incorporation, number of shares outstanding and other information needed to determine eligibility. IPOs will be considered for index inclusion on a quarterly basis.

5.15 **Minimum Voting Rights**

- 5.15.1 Companies assigned a developed market nationality are required to have greater than 5% of the company's voting rights (aggregated across all of its equity securities, including, where identifiable, those that are not listed or trading) in the hands of unrestricted shareholders or they will be deemed ineligible for index inclusion. **Shares referenced as "non-voting" or provide legally minimum rights only will be viewed as having no voting power as it relates to the minimum voting rights review.** Emerging market securities are not subject to this requirement.
- 5.15.2 Existing constituents with a developed market nationality who do not currently meet the above requirement have a 5 year grandfathering period to comply. If subsequently they continue to fail the minimum voting rights requirement they will be removed from FTSE Russell indexes at the September 2022 review.
- 5.15.3 The percentage of a company's voting rights in public hands is calculated as:

The number of votes in the hands of shareholders that are unrestricted as determined
by the application of FTSE Russell free float definitions

The total number of votes conferred by the shares outstanding of all the company's
voting securities including those that have not been admitted to trading on a regulated venue

For example, Company A has 100m listed Class A shares each conferring one vote, free float is 65%. It also has 300m unlisted Class B shares each conferring 10 votes.

The test to assess whether the listed Class A line has the required greater than 5% of the company's voting rights is as follows:

$$\frac{65\text{m (i. e. 100m Class A voting rights * 65\% float)}}{3.1\text{bn (i. e. 100m Class A + 3bn Class B)}} = 2.097\% \text{ of the company's voting rights in public hands}$$

Section 6

Defining Membership by Size

Market capitalization

6.0 Defining Membership by Size

6.1.1 FTSE Russell calculates the total market capitalization of each security to determine whether it is large enough for inclusion in one or more of the Russell Indexes. Total market capitalization is determined by multiplying total outstanding shares by the market price as of the rank day in May for those securities being considered at annual reconstitution. IPO eligibility is determined each quarter.

6.2 Determining total shares outstanding

6.2.1 Common stock, non-restricted exchangeable shares and partnership units/membership interests (in certain cases- see below) are used to calculate a company's total market capitalization. Exchangeable Shares are shares which may be exchanged at any time, at the holder's option, on a one-for-one basis for common stock. Membership or partnership units/interests represent an economic interest in a limited liability company or limited partnership. FTSE Russell includes membership or partnership units/interests as part of total market capitalization when the company in question is merely a holding company of an underlying entity that issues membership or partnership units/interests and when these membership units are the company's sole asset. This is not to be confused with operating partnership units that are issued in conjunction with UPREITs. In these cases, total market capitalization will be calculated based on 100% of the value of all membership interests.

6.2.2 Any other form of shares – such as preferred or convertible preferred stock, redeemable shares, participating preferred stock, warrants, rights, installment receipts or trust receipts – are excluded from the calculation. If multiple share classes of common stock exist, they are combined to determine total shares outstanding. In cases where the common stock share classes act independently of each other (e.g., tracking stocks), each class is considered for inclusion separately.

6.2.3 Stapled units and other paired share structures are considered eligible for index inclusion, unless an underlying component of the stock is an ineligible security type (e.g. convertible debt).

6.3 Determining price

6.3.1 During annual reconstitution, the last price traded on the primary exchange on the rank day in May is used to determine market capitalization.

6.4 Corporate actions impacting reconstitution ranking

6.4.1 For merger and spin-off transactions that are effective between the rank day in May and the business day immediately before the index lock-down takes effect ahead of the annual reconstitution in June, the market capitalizations of the impacted securities are recalculated and membership is reevaluated as of the effective date of the corporate action. For corporate events that occur during the reconstitution lock-down period (which take effect from the open on the first day of the lock-down period onwards), market capitalizations and memberships will not be reevaluated. Non index members that have been considered ineligible as of rank day will not be reevaluated in the event of a subsequent corporate action that occurs between rank day and the reconstitution effective date.

6.5 Multiple Share Classes and Pricing Vehicle

6.6 Reconstitution

6.6.1 If an eligible company trades under multiple share classes, FTSE Russell will review each share class independently for U.S. index inclusion. Share classes in addition to the primary share class (pricing vehicle) that meet the following minimum size, liquidity and float requirements will also be eligible:

- **Size:** Must have a total market cap larger than \$30M.
- **Liquidity:** ADDTV (Average Daily Dollar Trading Value) must exceed that of the global median, which is determined each reconstitution rank day by ranking all securities in investable countries by ADDTV. As of the reconstitution 2020 rank date, the global median ADDTV was USD 130,000.
- **Float:** Must have greater than 5% of shares available in the marketplace

6.6.2 For reconstitution ranking purposes, all share classes for a company, including unlisted shares will be aggregated and considered total shares outstanding. Total shares are multiplied by the primary exchange close price of the pricing vehicle and used to determine the company's total market capitalization for the purpose of ranking of companies and determination of index membership. Rank will be determined based on cumulative market capitalization. If no volume exists on the primary exchange on the rank day, the last trade price from an eligible secondary exchange will be used where volume exists (using the lowest last trade price above \$1 if multiple secondary markets exist). Rank will be determined based on cumulative market capitalization. As of reconstitution 2016, share classes not qualifying for eligibility independently will not be aggregated with the pricing vehicle within the available shares calculation.

6.6.3 For companies with multiple share classes, the pricing vehicle will be designated as the share class with the highest two-year trading volume as of the rank day in May. In the absence of two years' worth of data, all available data will be used for this determination. If the difference between trading volumes for each share class is less than 20%, the share class with the most available shares outstanding will be used as the pricing vehicle. At least 100 day trading volume is necessary to consider the class as a pricing vehicle for existing members. New members will be analyzed on all available data, even if that data is for less than 100 days. If applicable, shares held across different share classes will be represented on a mathematically equivalent basis (e.g. conversion ratios between share classes will be considered).

Due to replication issues related to Berkshire Hathaway Class A (BRK.A) share price, BRK.A shares will be aggregated with the primary share class rather than considered for membership separately.

6.6.4 Growth, value, defensive and dynamic probabilities will be based on that of the pricing vehicle and assigned consistently across all additional share classes.

6.7 Corporate Actions

6.7.1 If a company distributes shares of an additional share class to its existing shareholders through a mandatory corporate action, FTSE Russell will evaluate the additional share class for separate index membership. The new share class will be deemed eligible if the market capitalization of the distributed shares meets minimum size requirement (above the minimum market capitalization breakpoint defined as the smallest member of the Russell 3000E Index from previous rebalance, adjusted for performance to date.) Index membership of additional share classes that are added due to corporate actions will mirror that of the pricing vehicle, as will style and stability probabilities. If the distributed shares of an additional share class do not meet eligibility requirements, they will not be added to the index (the distributed shares may be added to the index temporarily until they are settled and listed to enable index replication).

6.8 IPOs

6.8.1 Between annual reconstitution periods, FTSE Russell will review for index inclusion any share class in addition to that of the pricing vehicle that is made available via IPO as per the quarterly IPO inclusion methodology described in Section 3. Additional share classes will be considered eligible if the following conditions are met:

- **Size:** Must have a total market cap larger than that of the smallest company in the Russell 3000E Index as of the previous reconstitution, adjusted for performance.
- **Liquidity:** ADDTV (Average Daily Dollar Trading Value) must exceed that of the global median, which is determined each reconstitution rank day by ranking all securities in investable countries by ADDTV. As of reconstitution 2018, the global median ADDTV was USD 205,000.
- **Float:** Must have greater than 5% of shares available in the marketplace.

6.8.2 Additional share classes introduced via IPO that do not meet eligibility requirements will not be added to the index and subsequently reviewed for index membership during the next annual reconstitution.

6.9 Initial public offerings (IPOs)

6.9.1 IPOs are added to Russell indexes on the basis of total market capitalization ranking within the market-adjusted capitalization breaks established during the most recent reconstitution. Country assignment determination is made using data provided in prospectuses or other filings. Market adjustments to the capitalization breaks are made using the returns of the broad market Russell 3000E Index. Eligible IPOs will be added to Russell's growth/value indexes using their industry's average style probability established at the latest reconstitution. All IPOs entering the index outside of annual reconstitution are assigned as 100% dynamic within the Russell Stability Indexes. IPOs entering the index during annual reconstitution are reviewed for Russell Stability Index assignment, and probabilities are calculated using the methodology described in Section 7.

6.10 Russell U.S. Indexes IPO calendar:

Quarterly additions	Guidelines	2020 Third-quarter additions	2020 Fourth-quarter additions	2021 First-quarter additions
Initial offering period	IPOs which initially trade between rank day +1 of the previous cycle and rank day of the current cycle.	IPOs which initially price/trade between May 11 and Aug 14	IPOs which initially price/trade between Aug 17 and Nov 13	IPOs which initially price/trade between Nov 16 and Feb 12
Rank date*	Five weeks prior to implementation	14-Aug	13-Nov	12-Feb
Announce date*	Three weeks prior to implementation	28-Aug	27-Nov	26-Feb
Effective date**	Third Friday of the month.	18-Sep	18-Dec	19-Mar

* If a date falls on a holiday or weekend the previous business day is used.

** After the close on the last business day.

Note: Once IPO additions have been announced, an IPO may be added to the index prior to the previously announced schedule, if a corporate action has deemed this to be appropriate and notice can be provided (e.g. an index member automatically receives shares via a stock distribution into a projected IPO add). In order to be added during a quarter outside of reconstitution, an IPO must meet all Russell U.S. Index eligibility requirements. Additionally, the IPO must meet the following criteria on the rank day for the quarterly additions: (1) it is priced and traded; and (2) it ranks larger in total market capitalization than the market-adjusted smallest company in the Russell 3000E Index as of the latest June reconstitution. See Appendix F for calculations.

6.11 Determining index membership

6.11.1 Once the market capitalization for each security is determined by use of total shares and price (as described above), each security is placed in the appropriate Russell market capitalization–based index. The largest 4,000 securities become members of the Russell 3000E Index. If eligible securities total less than 4,000, the Russell 3000E and Russell Microcap Index will include all eligible securities. The other index capitalization breaks remain unchanged. All remaining indexes are a subset of this index. A market capitalization breakpoint is determined by the break between the companies below.

Index	Companies included (based on descending total market capitalization)
Russell 3000E Index	Companies #1–4,000 or 100% of the eligible securities
Russell 3000 Index	Companies #1–3,000
Russell Top 50 Mega Cap Index	Companies #1-50
Russell Top 200 Index	Companies #1–200
Russell Top 500 Index	Companies # 1-500
Russell 1000 Index	Companies #1–1,000
Russell Midcap Index	Companies #201–1,000
Russell 2000 Index	Companies #1,001–3,000
Russell 2500 Index	Companies #501–3,000
Russell Microcap Index	Companies #2,001–4,000

- 6.11.2 After the initial market capitalization breakpoints are determined by the ranges listed above, new members are assigned on the basis of the breakpoints, and existing members are reviewed to determine if they fall within a cumulative 5% market cap range around these new market capitalization breakpoints. If an existing member's market cap falls within this cumulative 5% of the market capitalization breakpoint, it will remain in its current index rather than be moved to a different market capitalization–based Russell index. Companies that fall on the edge of market capitalization breakpoints are often still within a manager's opportunity set, since they have not significantly grown or declined in market capitalization.
- 6.11.3 Exceptions: There will be no percentile banding at the bottom of the Russell 3000 Index (stock 3,000) or the Russell 3000E Index (stock 4,000) and no percentile banding for the Top 50 Mega Cap (banding is applied to the Top 200 (5%) and the Top 500 (5%)). . In addition, due to the small market cap percentage, the Russell Microcap Index will be banded at 1% around stock 2,000.
- 6.12 Steps in calculating percentile ranges of the new index:
1. Sort the Russell 3000E Index members in descending order by total market capitalization.
 2. Calculate the total market capitalization of the Russell 3000E Index by summing all members' total market capitalizations.
 3. Calculate percentiles for each company in the Russell 3000E Index by dividing the cumulative market cap associated with each member by the total market cap of the Russell 3000E.
 4. Calculate a range of five percentiles around the newly determined market cap breakpoints, by subtracting, and then adding, 2.5% from/to the calculated percentile of the market cap breakpoint.

Example:

Assume the market capitalization of security 1,000 is \$2 billion (i.e., the breakpoint between the Russell 1000 and the Russell 2000). Current members of the Russell 1000 Index that are smaller than \$2 billion are slated to be moved to the Russell 2000, while current members of the Russell 2000 that are larger than \$2 billion are slated to be moved to the Russell 1000. However, since they are current members, they are further assessed for the magnitude of their differences from the market capitalization breakpoint.

Illustration:

1. Sort the new Russell 3000E Index members by descending market capitalization (see below).
2. Calculate the total market capitalization of the Russell 3000E Index. Assume for illustration purposes that the index = \$182,500 (\$M). (Note: Total market cap has been dramatically reduced for simpler illustration.)
3. Calculate percentiles for each company (see below).
4. Calculate a 5 percentile range around the \$2 billion market cap percentile (89.99 for this illustration):

1. $89.99 - 2.5 = 87.49$

2. $89.99 + 2.5 = 92.49$

Range = 87.49% – 92.49%

Rank	Company	Current R1 member	Current R2 member	Company Market cap (\$M)	Cumulative market cap	Cumulative percentile	New index membership
995	XYZ Company	Y	N	\$2,115	\$154,000	84.38%	R1
996	ABC Company	N	Y	\$2,105	\$156,105	85.54%	R1
997	Drugstore Inc.	Y	N	\$2,100	\$158,205	86.69%	R1
998	PYK Shipping	N	Y	\$2,011	\$160,216	87.79%	R2
999	Z Technology	N	Y	\$2,010	\$162,226	88.89%	R2
1,000	RE Trust	N	Y	\$2,000	\$164,226	89.99%	R2
1,001	Foods Inc.	Y	N	\$1,995	\$166,221	91.08%	R1
1,002	PETs & More	N	Y	\$1,950	\$168,171	92.15%	R2
1,003	RYT Inc.	Y	N	\$1,923	\$170,094	93.20%	R2

Therefore, the market capitalization of current Russell 2000 Index members PYK Shipping, Z Technology and RE Trust have not changed significantly enough to require a membership move into the Russell 1000, and current Russell 1000 Index member Foods Inc.'s market capitalization has not changed significantly enough to require a membership move out of the Russell 1000 (although it is smaller than \$2 billion). These companies remain in their current indexes.



Section 7

Float

Adjustments to member's shares outstanding

7.0 Float

7.1.1 After membership is determined, a security's shares are adjusted to include only those shares available to the public. This is often referred to as "free float." The purpose of this adjustment is to exclude from market calculations the capitalization that is not available for purchase and is not part of the investable opportunity set. Stocks in the Russell U.S. Indexes are weighted by their available (also called float-adjusted) market capitalization, which is calculated by multiplying the primary closing price by the available shares. Adjustments to shares are reviewed at reconstitution, during quarterly update cycles, and for corporate actions such as mergers.

Total shares and adjustments for available shares are based on information recorded in SEC corporate filings. FTSE Russell primarily uses 10-K, 20-F, 40-F, 10-Q, DEF-14 and 424 filings to determine the total share figure. 8-K filings may be used to confirm research disclosed in a primary filing. FTSE Russell uses a company's most recent beneficial ownership table to determine index free float. That table is normally found within DEF14, 10-K, 20-F, and 40-F filings. Any updates to the most recent beneficial ownership table will be considered if disclosed within a subsequent 424 filing. Please note that in the absence of a beneficial ownership table FTSE Russell will evaluate on a case by case basis and utilize additional publicly available information to determine a company's free float.

Full details of the free float adjustments applied to the Russell U.S. Indexes can be found within the following guidelines:

[Free Float Restrictions.pdf](#)

Section 8

Determining Style

8.0 Determining Style

8.1.1 FTSE Russell uses a “non-linear probability” method to assign stocks to the growth and value style valuation indexes and to assign stocks to the defensive and dynamic Russell Stability Indexes™.

8.2 Russell Growth and Value Indexes

8.2.1 FTSE Russell uses three variables in the determination of growth and value. For value, book-to-price (B/P) ratio is used, while for growth two variables—I/B/E/S forecast medium-term growth (2-year) and sales per share historical growth (5-year) are used.

8.2.2 The term “probability” is used to indicate the degree of certainty that a stock is value or growth, based on its relative book-to-price (B/P) ratio, I/B/E/S forecast medium-term growth (2 year), and sales per share historical growth (5 year). This method allows stocks to be represented as having both growth and value characteristics, while preserving the additive nature of the indexes.

8.2.3 The process for assigning growth and value weights is applied separately to the stocks in the Russell 1000 and Russell 2000 and to the smallest 1,000 stocks in the Russell Microcap Indexes. Research indicates that on average, valuations of small stocks differ from those of large stocks. Treating the Russell 1000, Russell 2000 and smallest Russell Microcap stocks separately prevents the possible distortion to relative valuations that may occur if the Russell 3000E is used as the base index.

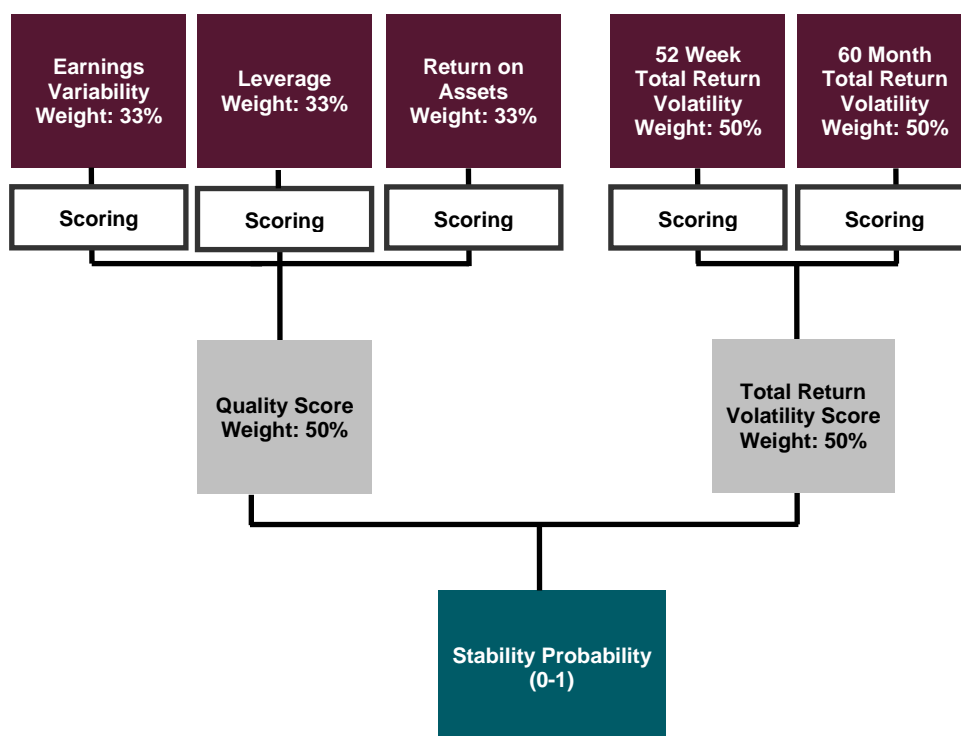
8.2.4 For each base index (the Russell 1000 and Russell 2000, and the smallest 1,000 in Russell Microcap), stocks are ranked by their book-to-price ratio (B/P), their I/B/E/S forecast medium-term growth (2 year) and sales per share historical growth (5 year). These rankings are converted to standardized units, where the value variable represents 50% of the score and the two growth variables represent the remaining 50%. They are then combined to produce a composite value score (CVS). Stocks are then ranked by their CVS, and a probability algorithm is applied to the CVS distribution to assign growth and value weights to each stock. In general, a stock with a lower CVS is considered growth, a stock with a higher CVS is considered value and a stock with a CVS in the middle range is considered to have both growth and value characteristics, and is weighted proportionately in the growth and value index. Stocks are always fully represented by the combination of their growth and value weights; e.g., a stock that is given a 20% weight in a Russell value index will have an 80% weight in the corresponding Russell

growth index. Style index assignment for non-pricing vehicle share classes will be based on that of the pricing vehicle and assigned consistently across all additional share classes.

8.3 **Russell Defensive and Dynamic Indexes**

- 8.3.1 The Russell Stability Indexes add a Third Dimension of Style™ to the Russell Style Indexes⁷. Stability is measured in terms of volatility (price and earnings), leverage and return on assets. Stability Indexes are created in a similar fashion as the growth and value indexes in that they involve splitting an existing applicable Russell Index in half based on the combination of the stability indicators. The more stable half of the split is called “Defensive,” and the less stable half is called “Dynamic.”
- 8.3.2 The Russell Defensive Indexes® measure the performance of companies that have relatively stable business conditions which are less sensitive to economic cycles, credit cycles and market volatility based on their stability indicators. The Russell Dynamic Indexes® measure the performance of companies that have relatively less stable business conditions and are more sensitive to those market cycles.
- 8.3.3 For each base index (Russell 1000 and Russell 2000), there are five specific fundamentals used to determine the probability of being defensive or dynamic: Debt/Equity, Return on Assets (ROA), Earnings Variability, and Total Return Volatility (52 week & 60 month). Among other things, a company has risks related to balance sheet leverage, economic cycles and industry/product cycles, and weaknesses in its business model. Russell uses debt/equity ratios as a proxy for risks related to balance sheet leverage. Earnings variability is used as a proxy for risks related to economic cycles and industry/product cycles. Return on assets (ROA) is used as a proxy for risks related to the strength of a company’s business model. The final component used as an indicator of a company’s risk is the volatility of its stock’s returns. Total return volatility reflects aspects of a company’s stability or risk not captured by the other three inputs to a company’s stability probability. Stability index assignment for non-pricing vehicle share classes will be based on that of the pricing vehicle and assigned consistently across all additional share classes.
- 8.3.4 Using the Russell non-linear style algorithm, companies with high stability probabilities are included in the Russell Defensive Indexes. Companies with low stability probabilities are included in the Russell Dynamic Indexes.
- 8.3.5 FTSE Russell has assigned the label “Quality” to the score, resulting from an equal weight of the three accounting-based indicators (earnings variability, debt/equity ratios, and ROA). Together, these three indicators comprise 50% of the stability probability. The “Volatility” score makes up the other half of the stability probability, and is based on an equal weight of the past 52 weeks of the stock price’s weekly volatility and the past 60 months of the stock price’s monthly volatility. The Volatility and Quality variables are gathered annually (end of May).
- 8.3.6 A company may be included in both the defensive and dynamic indexes based on its stability probability. However, the number of shares for each index will be divided based on its stability probability. The total shares will be the same as the parent index.

⁷ To clarify, the June 2020 rebalance was applied using the legacy RGS style substitution. New ICB became the official sector scheme for the index from September 2020. New additions/IPO’s used the new ICB average for missing variables following the June 2020 review (September 2020 quarterly). The first rebalance that will implement fully using the new ICB scheme will be the June 2021 annual reconstitution.



8.4 Quality Score (comprises 50% of the overall stability probability)

8.4.1 There are three stability indicators which comprise the Quality Score-- Debt/Equity, Pre-Tax ROA, and Earnings Variability. Each indicator comprises one third of the Quality score.

8.4.2 **Debt/Equity:** The debt/equity ratio is based on the most recent quarterly SEC filing.

8.4.3 **Pre-Tax ROA:** The pre-tax ROA is based on the last year's pre-tax income divided by the average of the assets for the previous year ((current assets + same quarter one year prior)/2).

8.4.4 **Earnings Variability:** The earnings variability computation uses quarterly EPS for the previous 5 years. It is based on the standard error of the linear earnings-per-share (EPS) trend regression. The rationale for using the standard error is that if there is a trend in the EPS over time, then the trend itself should not contribute to EPS variability. The standard error is then divided by the median EPS (of the 20 observations). This scaling normalizes the information to make each company directly comparable to other companies regardless of the relative level of EPS.

8.4.5 Negative (or zero) EPS numbers are included in the standard error calculation, however, a negative or zero median EPS value will not be used to calculate EPS variability. Rather, EPS variability is excluded in the analysis and set to zero/dynamic. Assigning this value is equivalent to characterizing the company as having very high earnings variability.

8.4.6 If there are less than 20 observations for EPS (or standard error is equal to zero), it is considered NULL and standard error will not be calculated (see missing variables below);

8.5 Volatility Score (comprises 50% of the overall stability probability)

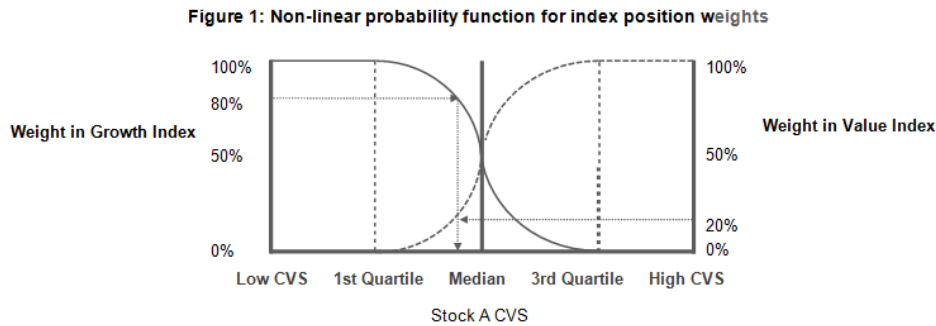
8.5.1 Total return volatility (standard deviation) is measured over two horizons, over the previous year and over the previous five years. Each indicator represents one half of the volatility score.

8.5.2 **52 week price volatility (1 year):** The one year-volatility is the standard deviation based on the 52 weekly returns that end on the last Friday on or before May 31.

8.5.3 **60 month price volatility (5 year):** Trailing five-year volatility is the standard deviation based on monthly returns. Thus, for a score based on May 31, 2010 data, the five-year volatility is based on the 60 monthly returns for the period that starts on May 31, 2005 and ends on May 31, 2010.

8.6 **Description of non-linear probability algorithm**

8.6.1 Stock A, in Figure 1, is a security with 20% of its available shares assigned to the value index and the remaining 80% assigned to the growth index. The growth and value (or defensive and dynamic) probabilities will always sum to 100%. Hence, the sum of a stock’s market capitalization in the growth and value index will always equal its market capitalization in the Russell 1000 Index, Russell 2000 Index, or Russell Microcap Index.



In Figure 1, the quartile breaks are calculated such that approximately 25% of the available market capitalization lies in each quartile. Stocks at the median are divided 50% in each style index. Stocks below the first quartile are 100% in the growth index. Stocks above the third quartile are 100% in the value index. Stocks falling between the first and third quartile breaks are in both indexes to varying degrees; depending on how far they are above or below the median and how close they are to the first or third quartile breaks.

8.7 **5% rule**

8.7.1 Roughly 70% of the available market capitalization is classified as all-growth or all-value (or all-defensive or all-dynamic). The remaining 30% of stocks have some portion of their market value in either the value or the growth index (or defensive and dynamic), depending on their relative distance from the median value score. The astute observer may note that since the percentage of capitalization between the first quartile and the third quartile is 50%, we would expect that 50% of the capitalization would be found in both indexes. What happened to the 20% (i.e., 50% to 30%)? The source for the disappearance of the 20% is our decision to institute a small position cutoff rule. If a stock’s weight is more than 95% in one style index, we increase its weight to 100% in that index. This rule eliminates many small weightings and makes passive management easier.

8.8 **Banding rule**

8.8.1 In an effort to mitigate unnecessary turnover, FTSE Russell implements a banding methodology at the composite value score (CVS) level of the growth and value style algorithm. If a company’s CVS change from the previous year is \leq to ± 0.10 AND if the company remains in the same core index (Russell 1000 or Russell 2000), then the CVS remains unchanged during the next reconstitution process. Keeping the CVS static for these companies does not mean the probability (growth/value) will remain unchanged in all cases due to the relation of a CVS score to the overall index. However, this banding methodology has proved to reduce turnover caused by smaller, less meaningful movements while

continuing to allow the larger, more meaningful changes to occur, signaling a true change in a company's relation to the market.

8.9 **Market capitalization of growth/value and defensive/dynamic indexes**

8.9.1 The market capitalization of the growth and value style indexes, as well as that of the defensive and dynamic stability indexes, may not each equal 50% of their base index. At first glance, this seems counterintuitive, since the methodology uses capitalization-weighted medians and quartiles, which in turn implies that 50% of the capitalization is above and 50% is below the median. However, asymmetry in the capitalization distributions within the second and third quartiles results in a skewed distribution of CVS. When CVS is normally distributed, 50% will be in each index.

8.10 **Missing values, negative values, or low coverage**

8.10.1 For valuation styles (growth and value), stocks with missing or negative values for B/P, or missing values for I/B/E/S growth (negative IBES medium-term growth is valid), or missing sales per share historical growth (5year) (6 years of quarterly numbers are required), are allocated by using the mean value score of the base index (Russell 1000, Russell 2000) RGS (Russell Global Sectors)⁸ (ICB) industry, subsector, or sector group into which the company falls. Each missing (or negative B/P) variable is substituted with the industry, subsector or sector group independently. An industry must have five members or the substitution reverts to the subsector, and so forth to the sector. This method was found to produce the fewest distortions, and it has the added advantage of being very simple. In addition, a weighted value score is calculated for securities with low analyst coverage for I/B/E/S medium-term growth. For securities with coverage by a single analyst, 2/3 of the industry, subsector, or sector group value score is weighted with 1/3 the security's independent value score. For those securities with coverage by 2 analysts, 2/3 of the independent security's value score is used and only 1/3 of the industry, subsector, or sector group is weighted. For those securities with at least three analysts contributing to the I/B/E/S medium-term growth, 100% of the independent security's value score is used.

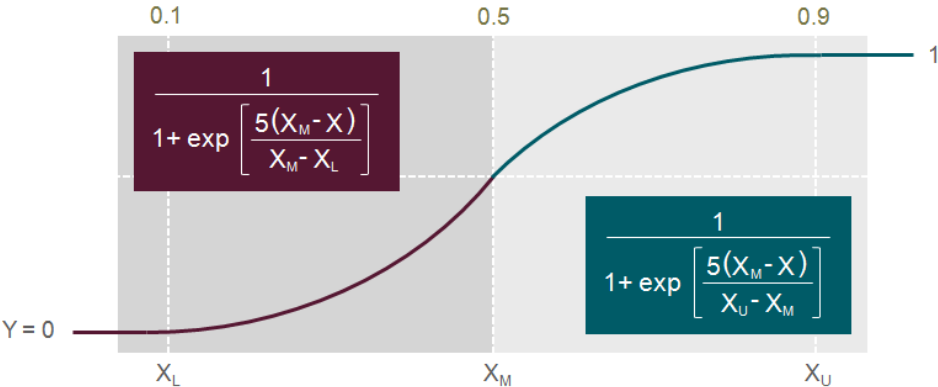
8.10.2 For stability indexes (defensive and dynamic), if the quality or volatility indicator is not available, the company receives a stability score for that indicator of 0.25. Since zero is the worst possible score and one is the best, this conservative assumption mandates that missing data will result in a lower than average stability probability.

8.11 **Book value adjustments**

8.11.1 As of reconstitution 2016, FTSE Russell will no longer make adjustments to book value for write-offs stemming from the Financial Accounting Standards Board (FASB)-issued Statement of Financial Accounting Standards numbers 106 and 109 (FAS 106 & 109).

⁸ To clarify, the June 2020 rebalance was applied using the legacy RGS style substitution. New ICB became the official sector scheme for the index from September 2020. New additions/IPO's used the new ICB average for missing variables following the June 2020 review (September 2020 quarterly). The first rebalance that will implement fully using the new ICB scheme will be the June 2021 annual reconstitution.

8.12 Russell non-linear probability algorithm



Section 9

Corporate Action-Driven Changes

9.0 Timing and Treatment of Corporate Actions

- 9.1.1 FTSE Russell applies corporate actions to its indexes on a daily basis, both to reflect the evolution of securities and to ensure that the indexes remain highly representative of the U.S. equity market. A company's index membership and its weight in the index can be impacted by these corporate actions. FTSE Russell uses a variety of reliable public sources to determine when an action is final, including a company's press releases and regulatory filings; local exchange notifications; and official updates from other data providers FTSE Russell deems trustworthy. Prior to the completion of a corporate action, FTSE Russell estimates the effective date on the basis of the same above sources. As new information becomes available, FTSE Russell may revise the anticipated effective date and the terms of the corporate action, before ultimately confirming its effective date.
- 9.1.2 Depending upon the time an action is determined to be final, FTSE Russell either (1) applies the action before the open on the ex-date or (2) applies the action providing appropriate notice, referred to as a "delayed action" (see specific action types for details on timing and procedure). The timing of when corporate actions are applied is critical for accurate market representation, and it impacts tracking for passive managers. FTSE Russell believes this methodology strikes the best balance between the two. The impact of the action and the effective date will be communicated to clients on a regular schedule, via the daily cumulative change files and the corporate action calendar. For a schedule and sample of notifications, see Appendix C.
- 9.1.3 For the purposes of index calculation, FTSE Russell generally applies the most recently available market prices to the index for corporate action adjustments. FTSE Russell will only use exchange provided estimates and price adjustments in the absence of market prices and if the exchange provided estimate is deemed to be appropriate.
- 9.1.4 If FTSE Russell has confirmed the completion of a corporate action, scheduled to become effective subsequent to a rebalance; the event may be implemented in conjunction with the rebalance to limit turnover, providing appropriate notice can be given. Example: Company ABC is scheduled to be added or continue as an existing member at rebalance. A tender offer is confirmed to be completed two days following the rebalance effective date. FTSE Russell will provide appropriate notice of this index change per our normal procedures and will remove company ABC at the rebalance effective date

9.2 “No replacement” rule

9.2.1 Securities that leave the index for any reason (e.g., mergers, acquisitions or other similar corporate activity) are not replaced. Thus, the number of securities in the indexes over the year will fluctuate according to corporate activity.

Full details of changes to constituent companies due to corporate actions can be accessed in the Corporate Actions and Events Guide using the following link:

[Corporate Actions and Events Guide.pdf](#)

9.3 Changes to shares outstanding

9.3.1 To maintain representativeness and maximize the available investment opportunity for index managers, the Russell U.S. Indexes will be reviewed quarterly for updates to shares outstanding and to free floats used within the index calculation. The changes will be implemented quarterly, on the third Friday of the month (after the close) in March, September, and December. The June reconstitution will continue to be implemented on the last Friday of June (unless the last Friday occurs on the 29th or 30th, when reconstitution will occur on the Friday prior).

9.3.2 In June the shares and free float updates will be implemented regardless of size (i.e. buffers will not be applied). The June updates will be implemented using data sourced primarily from company filings for all constituents, where appropriate.

9.3.3 In March, September, and December, shares outstanding and free float will be updated to reflect the following:

- Changes greater than 1% for cumulative shares in issue changes
- Changes greater than 3% for cumulative free float changes*

*A constituent with a free float of 15% or below will not be subject to the 3 percentage points threshold and will instead be updated if the change is greater than 1%. For example, Company B with a free float of 8% would trigger a change if its free float moved to above 9% or below 7%.

9.3.4 The March, September, and December updates will be triggered by vendor changes and confirmed appropriately with the cut-off for new information occurring on the Friday five weeks prior to implementation.

9.3.5 Outside of the quarterly update cycle, shares and free float will be updated with at least two days' notice if occasioned by primary or secondary offerings IF:

- There is a USD 1bn investable market cap change related to a primary/secondary offering measured by multiplying the change to index shares by the subscription price;

OR

- There is a resultant 5% change in index shares related to a primary or secondary offerings AND a USD 250m investable market cap change measured by multiplying the change to index shares by the subscription price.
- The pricing date will serve as the trigger for implementation within the FTSE Russell US indexes; i.e. once FTSE Russell is aware that an offering has priced (confirmed via an appropriate publicly disclosed announcement or filing), the update will be implemented with two days' notice from market close (contingent on the thresholds described above being triggered).

9.3.6 If discovery of the event occurs more than two days after the close of the subscription period, the changes will be deferred until the quarterly review cycle.

- 9.3.7 Free float and share changes resulting from corporate events will not be subject to the buffers as detailed above and will be implemented in line with the event.
- 9.3.8 For primary offerings: There will be no change to the free float with any potential updates being deferred to the next quarterly review. For example, in the event an existing restricted shareholder is diluted as a consequence of the primary offering, any change to free float will be made at the next quarterly update subject to a review of the shareholder structure at that time
- 9.3.9 For secondary offerings: If the shares being offered were previously restricted, entirely or partially, the free float will be adjusted accordingly; otherwise there will be no change to the free float with any potential updates being deferred to the next quarterly review. Where all the previously restricted shares are solely being offered to another restricted holder then there will be no change to free float.
- 9.3.10 Secondary offerings are defined as share offerings of existing shares made directly by the company; by the company on behalf of selling shareholders; or offerings by shareholders themselves if the appropriate filings have been submitted.
- 9.3.11 Share and free float changes resulting from activity such as private placements, exercise of warrants and expiry of lock-ups, will be deferred to the next quarterly review.

Appendix A: Index Tickers and Base Values

Russell index	CUSIP	Thomson Reuters RIC	Bloomberg symbol price return	Bloomberg Symbol total return	AMEX	ETF
Russell 1000 [®]		.RUI	RIY	RU10INTR		IWB
Russell 1000 [®] Mini		.RUI.M	RXU			
Russell 1000 [®] Value		.RLV	RLV	RU10VATR	RLV	IWD
Russell 1000 [®] Growth		.RLG	RLG	RU10GRTR	RLG	IWF
Russell 1000 [®] Defensive Index [®]		.RU1000DF	RU1000DF			
Russell 1000 [®] Dynamic Index [®]		.RU1000DY	RU1000DY			
Russell 2000 [®]	12483510	.RUT	RTY	RU20INTR		IWM
Russell 2000 [®] Mini		.RUT.M				
Russell 2000 [®] Value		.RUJ	RUJ	RU20VATR	RUJ	IWN
Russell 2000 [®] Growth		.RUO	RUO	RU20GRTR	RUO	IWO
Russell 2000 [®] Defensive Index [®]		.RU2000DF	RU2000DF			
Russell 2000 [®] Dynamic Index [®]		.RU2000DY	RU2000DY			
Russell 3000 [®]		.RUA	RAY	RU30INTR		IWV
Russell 3000 [®] Mini		.RUA.M				
Russell 3000 [®] Value		.RAV	RAV	RU30VATR	RAV	IWW
Russell 3000 [®] Growth		.RAG	RAG	RU30GRTR	RAG	IWZ
Russell 3000 [®] Defensive Index [®]		.RU3000DF	RU3000DF			
Russell 3000 [®] Dynamic Index [®]		.RU3000DY	RU3000DY			

The index value is the result of compounding daily (or monthly) return percentages, where the starting value of the index is equal to the base value and base date. Returns between any two dates can then be derived by dividing the ending period index value (IV1) by the beginning period (IV0) index value

$$(\text{Return} = [(IV1 / IV0) - 1] * 100).$$

Index	Calculated end of day by Russell		Calculated real time by Russell*	
	Base date/value	Inception	Base date/value	Inception
Russell 1000 [®]	12/31/78 = 100.00	12/31/78	12/31/86 = 130.00	12/31/86
Russell 1000 [®] Value	12/31/90 = 100.00	12/31/78	08/31/92 = 200.00	08/31/92
Russell 1000 [®] Growth	12/31/90 = 100.00	12/31/78	08/31/92 = 200.00	08/31/92
Russell 1000 [®] Defensive	12/31/10 = 1000.00	7/1/96	NA	NA

Index	Calculated end of day by Russell		Calculated real time by Russell*	
	Base date/value	Inception	Base date/value	Inception
Russell 1000 [®] Dynamic	12/31/10 = 1000.00	7/1/96	NA	NA
Russell 2000 [®]	12/31/78 = 100.00	12/31/78	12/31/86 = 135.00	12/31/86
Russell 2000 [®] Growth	05/31/93 = 1000.00	12/31/78	03/16/00 = 500.00	03/16/00
Russell 2000 [®] Value	05/31/93 = 1000.00	12/31/78	03/16/00 = 500.00	03/16/00
Russell 2000 [®] Defensive	12/31/10 = 1000.00	7/1/96	NA	NA
Russell 2000 [®] Dynamic	12/31/10 = 1000.00	7/1/96	NA	NA
Russell 3000 [®]	12/31/78 = 100.00	12/31/78	12/31/86 = 140.00	12/31/86
Russell 3000 [®] Growth	05/31/95 = 1000.00	12/31/78	03/16/00 = 700.00	03/16/00
Russell 3000 [®] Value	05/31/95 = 1000.00	12/31/78	03/16/00 = 700.00	03/16/00
Russell 3000 [®] Defensive	12/31/10 = 1000.00	7/1/96	NA	NA
Russell 3000 [®] Dynamic	12/31/10 = 1000.00	7/1/96	NA	NA
Russell 3000E [™] Index	6/24/05 = 1000.00	6/24/05	NA	12/31/86

*Prior to January 13, 2014, some Russell U.S. real time indexes were calculated by Thomson Reuters.

Appendix B: Country Assignment Methodology Details

Home Country Indicators (HCIs)

- Country of incorporation
- Country of headquarters
- Country of most liquid exchange as defined by the two-year average daily dollar trading volume (ADDTV).

Headquarters: FTSE Russell defines headquarters as the address of principal executive offices. For those companies reporting in the U.S., FTSE Russell uses the SEC filings to determine the location of headquarters. For those companies reporting outside of U.S. reporting requirements, multiple vendor sources and independent FTSE Russell research are used. In a case where multiple headquarters are listed on the SEC filings and a Home Country Indicator (HCI) needs to be determined, FTSE Russell assigns the HCI for headquarters to the location with the highest average daily trading volume. If the HCI for headquarters cannot be determined (for example, if there is no trading in any headquarters location) the two remaining HCIs are used.

Asset/Revenue Data Sources and Requirements defined: Assets and revenues data are retrieved from the company's annual reports (10-Ks, 20Fs, 40Fs, or prospectuses in the case of IPOs) as of the rank day in May. Any filings published after that date are not used. FTSE Russell will use an average of two years of assets or revenues data to reduce potential turnover. However, if only one year of data is available (a company either starts or stops reporting by location) one year of data will be used. The two-year average will be calculated using the percentage by county/region in the previous year and the percentage by country/region in the current year.

Assets and Revenue Reporting

Assets and/or revenue found in the text or table of the geographical segment section of the filing is given preference over other information in the filing. Assets and/or revenue must be reported as numbers or percentages which allow us to confirm substantial tolerance is met or stating ALL assets/revenue come from a specific country will be used to designate primary country of risk. Footer notes within the geographical segment section which include numbers and/or percentages which evidence that the required tolerance is met will be accepted to confirm location of assets and/or revenues. In addition, "substantially all" or "majority of" assets and/or revenue will be considered as acceptable confirmatory statements.

FTSE Russell gives preference to long-lived/long-term assets over total assets if both are listed. However, either type will be used prior to reviewing revenue.

If intangible assets are reported separately as part of a total assets table, FTSE Russell removes intangibles from consideration. In other words, preference is given to tangible assets.

Total and net revenue are both considered. If both exist in table form, total takes precedent.

Country versus Regional Reporting

- If both country and regional are reported, regional reporting will be considered inconclusive.
- If a company changes their detailed level of reporting (country to regional or regional to country), FTSE Russell first utilizes the more detailed level of reporting, but also reviews the less detailed reporting to ensure accuracy and monitor current trends.
- The majority of assets/revenue is determined by the absolute difference between those percentages. For example, a 20% difference WOULD be achieved if assets were 44% in one country and 20% in another. A 20% difference WOULD NOT be recognized if one country was reported as 30% and another country was reported as 20% higher at 36%. The same principle applies when comparing regions or a combination of single country and region (i.e. assets/revenues for country must be an absolute 20% greater than single region).

Company reports by:	Requirements to be determined "Majority"*
Country: (used when more than one country is reported)	Total assets and/or revenues for HCI country is 20 percentage points greater than that of any other reported country
Region: (used when more than one region is reported)	Total assets and/or revenues for region containing only one HCI country is greater than 20 percentage points of any other reported region
Combination of single country & region(s):	Total assets/revenues for HCI country is greater than 20 percentage points of any reported region
Combination of single country or single region and rest of the world:	Total assets/revenue for (country or region) HCI is 40 or more percentage points of the total assets/revenues
No, or insufficient, data available:	Defaults to headquarters or most liquid exchange if BDI country

* Majority of assets/revenue is determined by the absolute difference between those percentages. For example, 20% difference would be achieved if assets were 44% in one country and 20% in another. 20% difference would NOT be recognized if country one was 30% and country two was 20% higher at 36%.

Benefit Driven Incorporation countries, No Domestic Exchange countries, and U.S. Territories

No domestic exchange (NDEs) countries	Benefit driven incorporation (BDIs) countries	
Falkland Islands	Anguilla	Curacao
Liechtenstein	Antigua and Barbuda	Guernsey
Monaco	Aruba	Gibraltar
Suriname	Bahamas	Isle of Man
	Barbados	Liberia
	Belize	Marshall Islands
	Bermuda	Panama
	Bonaire	Saba
	British Virgin Islands	Sint Eustatius
	Cayman Islands	Sint Maarten
	Channel Islands	Turks and Caicos Islands
	Cook Islands	Jersey

U.S. Territories

A U.S. HCI is assigned for any company incorporated or headquartered in a U.S. territory. This includes countries such as: Puerto Rico, Guam, and U.S. Virgin islands.

Example by country:

Home Country Indicators: Incorporated in U.S., Headquartered in China, Most liquid exchange U.S.

Country	Year 1 assets/ revenues (\$USD in millions)	Year 1 calculated percentage
US	6	30.00%
China	3	15.00%
Country 3	3	15.00%
Country 4	3	15.00%
Country 5	3	15.00%
Country 6	2	10.00%
Total	\$20M	100.00%

Results: Total assets/revenues from the U.S. is NOT 20 percentage points greater than that from any other individual country. Assuming assets and revenues are equal this example defaults to headquarters.

Example by region:

Home Country Indicators: Incorporated in U.S., Headquartered in UK, Most liquid exchange is U.S.

Region	Year 1 assets/ revenues (\$USD in millions)	Year 1 calculated percentage
North America	6	37.50%
Europe	2	12.50%
Asia	2	12.50%
Middle East	2	12.50%
Africa	2	12.50%
South America	2	12.50%
Total	\$16M	100.00%

Results: Total assets/revenues for North America is 20 percentage points greater than that from any other region. Also, the HCI countries are in different regions. Country assignment is U.S.

Example by Single Country and Rest of the World Combination:

Home Country Indicators: Incorporated in UK, Headquartered in U.S., Most liquid exchange is U.S.

Reporting	Year 1 assets/ revenues (\$USD in millions)	Year 1 calculated percentage
U.S.	10M	77.00%
All Other Countries	3M	23.00%
Total	\$13M	100.00%

Results: Total U.S. assets/revenues comprise more than 40% of the total assets/revenues. Country assignment is U.S.

China N Share designation

A US listed company is not eligible for inclusion within the Russell US Indexes if it has been classified by FTSE Russell as a China N share on the rank date of the index reconstitution. For a company to be considered to constitute a China N Share the following criteria will have been fulfilled:

The company is incorporated outside the PRC; and

The company is listed on the New York Stock Exchange, the NASDAQ exchange, or the NYSE American; and

Over 55 per cent of the revenue or assets of the company are derived from the PRC; and

The company is controlled by mainland Chinese entity, company or individual *.

* If the shareholder background cannot be determined with publicly available information, FTSE Russell will assess the N share status of a company with the help of other criteria including:

Whether the establishment and origin of the company are in Mainland China; and

Whether the company's headquarters is in Mainland China.

An existing N Share which fails one or more of the following criteria will cease to be classified as an N share:

The company is no longer incorporated outside the PRC; or

The company is no longer listed on the New York Stock Exchange, the NASDAQ exchange, or the NYSE American; or The percentages of revenue and assets derived from the PRC have both fallen below 45 per

cent; orThe company is acquired/a controlling stake is held by a non-Mainland Chinese state entity, company or individual.

Please note: only asset and revenue data from the most recent annual report is considered when evaluating whether a company should be classified an N share (i.e. there will be no two year averaging).

Share Descriptions

For a description of Chinese share classes please see the “Guide to Chinese Share Classes” document which can be accessed using the following link:

[Guide to Chinese Share Classes.pdf](#)

The definitions these share classes are reviewed annually in March



Appendix C: Sample Client Notification

Timely communication regarding the impact of corporate events on the Russell U.S. indexes is vital for passive managers tracking the indexes. For this reason, FTSE Russell provides a calendar of predictive corporate action events and provides a daily schedule of e-mail notifications to Premier subscribers. The calendar provides a forecast of actions FTSE Russell expects to complete in the next two weeks and their anticipated effective dates. In addition, throughout the day, e-mail notifications are sent to clients regarding actions that are completing on the current and following market days. The status flag will indicate the likelihood that an action will be effective for the day. A final flag indicates that the action is confirmed as final. Notifications follow the schedule below. However, any information that becomes available between the scheduled times will be sent immediately. See Appendix D for a description regarding predictive index data.

Schedule of notifications*

Time of notification (Eastern Time)	Content of notification
10:00 a.m.	Actions effective after the close of the current day and the following day, both preliminary and final, are included.
2:00 p.m.	Final actions effective after the close of the current day and anticipated actions and final actions for the following day. Note: A notification is sent regardless of whether a change has occurred since the 10:00 a.m. notice.
6:30 p.m.	Actions anticipated to take effect after the close of the following day.

* Note, on days when the markets close early only one report is generated which will serve as final notice. The report will be delivered an hour and a half prior to market close.

Sample report

Russell indexes

Corporate Action Report



Russell 3000® Index												
Status	Effective	Ticker	Name	Action	Reason	New Share Amount	Share Change	GR Change	VA Change	DF Change	DY Change	
	02/02/16		NO FINAL OR PENDING ACTIONS									
P	02/03/16	GCP	GCP APPLIED TECHNOLOGIES	ADD	SPIN-OFF	72766	+72766	+72766			+72766	

Russell 1000® Index												
Status	Effective	Ticker	Name	Action	Reason	New Share Amount	Share Change	GR Change	VA Change	DF Change	DY Change	
	02/02/16		NO FINAL OR PENDING ACTIONS									
P	02/03/16	GCP	GCP APPLIED TECHNOLOGIES	ADD	SPIN-OFF	72766	+72766	+72766			+72766	

Russell 2000® Index												
Status	Effective	Ticker	Name	Action	Reason	New Share Amount	Share Change	GR Change	VA Change	DF Change	DY Change	
	02/02/16		NO FINAL OR PENDING ACTIONS									
	02/03/16		NO FINAL OR PENDING ACTIONS									

Russell Microcap® Index												
Status	Effective	Ticker	Name	Action	Reason	New Share Amount	Share Change	GR Change	VA Change	DF Change	DY Change	
P	02/02/16	HELIF	CHC GROUP LTD	DELETE	DELISTED	0	-1153	-689	-464			
	02/03/16		NO FINAL OR PENDING ACTIONS									

Other Indexes											
Status	Effective	Ticker	Name	Action	Reason	Top 50	Top 200	Midcap	R2500	DF Change	DY Change
P	02/03/16	GCP	GCP APPLIED TECHNOLOGIES	ADD		N	N	Y	Y		

F = Final
 F-D = Final action in a delayed status
 P = Pending
 * = Change from previous notification
 > = Color coded arrows indicate linked actions

Effective Date: Actions are applied AFTER the close on the date listed.

How to read e-mail notifications

Status: P = Preliminary; estimation based on available information
 F = Final; effective date has been confirmed

Effective date: The effective date refers to the date the action will occur after the close/before the open. A manager would want to put in a “market on close” order for the day of the effective date.

Action: Add = Addition of a name and shares to the applicable index
 Delete = Deletion of name and corresponding shares in applicable index
 Share Change = Increase or decrease in shares only. Name remains

Reasons: Acquisition / Merger
 Delisted
 Spin-off
 IPO



Appendix D: Predictive Index Data

Any security level detail contained within the report that has not yet reached its effective date for processing across the index represents the most recent and best available information. Events that have not yet reached their effective date are subject to change as regulatory agencies, parties involved in the action and market terms may be updated prior to final effective date and should be considered predictive data (“Predictive Index Data”). The information should be considered preliminary until the effective date has been reached. FTSE Russell reserves the right to update or change details of the action or update to effective date.

The Predictive Index Data is being provided for informational purposes only and may be used solely for evaluation purposes. FTSE Russell and its third party licensors do not warrant or make any representations regarding the use, or the results of use, of the Predictive Index Data, or any data included therein or any security (or combination thereof) comprising the Predictive Index Data. Recipient, and not FTSE Russell or its third party licensors, assumes the entire risk as to such use, results of use and the performance of the Predictive Index Data and any such data or securities and will be fully responsible for any uses, and consequences thereof, of the Predictive Index Data by you or anyone obtaining access thereto from or through you.

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Appendix F: Performance Algorithms

Calculation of a synthetic position or a “delayed action”

Stock / Stock plus Cash Actions between members. The closing price of the acquired company will be adjusted to capture the performance of the newly formed entity, according to the merger terms.

Adjusted closing price calculation:

$$= (\text{Acquiring company closing price per share} * \text{stock terms}) + \text{cash offer per share}$$

Stock only example: On trading day, Company A, a member of the Russell 1000, acquires Company B, a member of the Russell 2000, at the acquisition terms of 1:5 shares. Based on the time of final notification from the exchange, Russell classifies this as a “delayed action.” Therefore, for an entire trading day, Company B remains a member of the Russell 2000, although the action has been finalized and technically Company B no longer trades. At the close of that day, Company B’s price is adjusted to mimic the terms of the deal and capture the performance of Company A. After the close, Company B is removed from the Russell 2000, and Company A’s shares are increased in the correct proportion according to the merger terms.

Date	Company a (R1)	Company b (R2) - 1,200 shares
Closing Price (effective date)	\$10.00	\$2.00
Closing Price (effective date+1)	\$12.00	No longer trading
Adjusted Closing Price (effective date+1)	NA	\$2.40

Stock + cash example: In the same example as above, assume that the merger terms were stock plus cash, 1:5 plus \$2 per share.

Date	Company a (R1)	Company b (R2) - 1,200 shares
Closing Price (effective date)	\$10.00	\$4.00
Closing Price (effective date+1)	\$12.00	No longer trading
Adjusted Closing Price (effective date+1)	NA	\$4.40

Cash only actions or actions involving non-members. If a company is acquired for cash, the acquired company will remain in the index for an additional trading day at a stale price and will be removed at the cash price after the close of the following day.

Cash example: Company Z, a member of the Russell 2000 Index, is acquired for \$5.02 per share in cash. Based on the timing of final notification from the exchange, FTSE Russell considers this a “delayed action” and delays deletion for one trading day. Company Z remains in the index the following day at a stale price, and removed at the cash price, mimicking the cash received by investors. After the close, Company Z is removed from the index.

Date	Company Z (R2)
Closing Price (effective date)	\$5.00
Closing Price (effective date+1)	No longer trading
Adjusted Closing Price (effective date+1)	\$5.02

Market-adjusted breakpoints

Market-adjusted breakpoints are determined by applying the performance of the Russell 3000E Index to date to the latest reconstitution breakpoints.

Example: Russell 3000E Performance to date = 2.05%
 Latest reconstitution breakpoint between R1 and R2 = \$1.8 billion
 Market-adjusted breakpoint = \$1.8B * 1.0205 = \$1.804

Appendix H: 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 US Equity Indexes Construction and Methodology 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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