

**Construction and Methodology**



# **Russell U.S. Equity Indexes**

v3.9



## Contents

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|            |   |           |
|------------|---|-----------|
| <b>1.0</b> | <b>Introduction</b> .....   | <b>5</b>  |
| 1.2        | FTSE Russell.....   | 5         |
| 1.3        | Available indexes.....  | 6         |
| <b>2.0</b> | <b>Management Responsibilities</b> .....                            | <b>8</b>  |
| 2.1        | FTSE International Limited (FTSE) .....                             | 8         |
| 2.2        | Amendments to the Construction and Methodology.....                 | 8         |
| 3.1        | Queries, Complaints and Appeals .....                               | 9         |
| 3.2        | Index Policy for Trading Halts and Market Closures .....            | 9         |
| 3.3        | Index Policy in the Event Clients are Unable to Trade a Market..... | 9         |
| 3.4        | Recalculation Policy and Guidelines.....                            | 10        |
| 3.5        | Policy for Benchmark Methodology Changes .....                      | 10        |
| <b>4.0</b> | <b>Basic Methodology</b> .....                                      | <b>11</b> |
| 4.2        | Annual reconstitution.....  | 11        |
| 4.3        | Quarterly initial public offerings .....                            | 11        |
| <b>5.0</b> | <b>Defining Eligible Securities</b> .....                           | <b>13</b> |
| 5.2        | Determining U.S. Companies .....                                    | 13        |
| 5.3        | Home-country indicators (HCIs) .....                                | 13        |
| 5.4        | Share Descriptions .....  | 14        |
| 5.5        | Steps to determining U.S. country assignment: .....                 | 14        |
| 5.6        | Trading requirements.....   | 15        |
| 5.7        | Exchange and Segment requirements .....                             | 15        |
| 5.8        | Minimum closing price.....  | 15        |
| 5.9        | Minimum total market capitalization.....                            | 15        |
| 5.10       | Minimum available shares / float requirement .....                  | 15        |
| 5.11       | Company structure.....  | 15        |
| 5.12       | UBTI screening .....  | 16        |



- 5.13 Shares excluded ..... 16
- 5.14 Deadline for inclusion ..... 16
- 5.15 Minimum Voting Rights ..... 16
- 6.0 Defining Membership by Size ..... 18**
- 6.2 Determining total shares outstanding..... 18
- 6.3 Determining price ..... 18
- 6.4 Corporate actions impacting reconstitution ranking..... 19
- 6.5 Reconstitution..... 19
- 6.6 Corporate Actions ..... 19
- 6.7 IPOs..... 20
- 6.8 Initial public offerings (IPOs)..... 20
- 6.9 Russell U.S. Indexes IPO calendar: ..... 21
- 6.10 Determining index membership..... 21
- 6.11 Steps in calculating percentile ranges of the new index: ..... 22
- 7.0 Float ..... 24**
- 8.0 Determining Style ..... 25**
- 8.2 Russell Growth and Value Indexes..... 25
- 8.3 Russell Defensive and Dynamic Indexes ..... 26
- 8.4 Quality Score (comprises 50% of the overall stability probability) .. 27
- 8.5 Volatility Score (comprises 50% of the overall stability probability) 27
- 8.6 Description of non-linear probability algorithm ..... 28
- 8.7 5% rule ..... 28
- 8.8 Banding rule..... 28
- 8.9 Market capitalization of growth/value and defensive/dynamic indexes 29
- 8.10 Missing values, negative values, or low coverage..... 29
- 9.0 Timing and Treatment of Corporate Actions ..... 30**
- 9.2 “No replacement” rule ..... 31
- 9.3 Changes to shares outstanding and free float ..... 31



|  |           |
|--|-----------|
| <b>10.0 Russell Equal Weight Indexes .....</b>                   | <b>33</b> |
| 10.2 Available indexes.....                                      | 33        |
| 10.3 Quarterly index re-weighting and annual reconstitution..... | 34        |
| 10.4 Corporate action-driven changes .....                       | 34        |
| <b>Appendix A: Index Tickers and Base Values .....</b>           | <b>36</b> |
| <b>Appendix B: Country Assignment Methodology Details .....</b>  | <b>39</b> |
| <b>Appendix C: Sample Client Notification .....</b>              | <b>43</b> |
| <b>Appendix D: Predictive Index Data .....</b>                   | <b>45</b> |
| <b>Appendix F: Performance Algorithms .....</b>                  | <b>46</b> |



## Section 1

# Introduction

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### 1.0 Introduction

1.1.1 FTSE Russell provides float-adjusted, market capitalization–weighted indexes for a precise picture of the market. Today, \$8.6 trillion in assets are benchmarked to the Russell indexes.<sup>1</sup> In 2007, Russell 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 FTSE Russell

1.2.1 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 and The Yield Book Inc.

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

1.2.3 Index users who choose to follow this index series or to buy products that claim to follow this index series should assess the merits of the index’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 this Methodology, and/or
- any errors or inaccuracies in this Methodology, and/or
- any non-application or misapplication of the policies or procedures described in this Methodology, and/or
- any errors or inaccuracies in the compilation of the index or any constituent data.

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<sup>1</sup> U.S. Equity Indexes: Institutional Benchmark Survey, December 2016.

### 1.3 Available indexes

- 1.3.1 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.
- 1.3.2 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).
- 1.3.3 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 |
|---------------------------------------|-----|-----|--|-----|-----|---|-----|-----|
| <b>Broad market U.S. indexes</b>      |     |     | <b>Large cap U.S. indexes</b>            |     |     | <b>Midcap U.S. indexes</b>              |     |     |
| Russell 3000E Index                   |     |     | Russell 1000® Index                      |     |     | Russell Midcap® Index                   |     |     |
| Russell 3000E Value Index             |     |     | Russell 1000® Value Index                |     |     | Russell Midcap® Value Index             |     |     |
| Russell 3000E Growth Index            |     |     | Russell 1000® Growth Index               |     |     | Russell Midcap® Growth Index            |     |     |
| Russell 3000® Index                   |     |     | Russell 1000® Defensive Index®           |     |     | Russell Midcap® Defensive Index®        |     |     |
| Russell 3000® Value Index             |     |     | Russell 1000® Dynamic Index®             |     |     | Russell Midcap® Dynamic Index®          |     |     |
| Russell 3000® Growth Index            |     |     | Russell 1000® Growth-Defensive Index®    |     |     | Russell Midcap® Growth-Defensive Index® |     |     |
| Russell 3000® Defensive Index®        |     |     | Russell 1000® Growth-Dynamic Index®      |     |     | Russell Midcap® Growth-Dynamic Index®   |     |     |
| Russell 3000® Dynamic Index®          |     |     | Russell 1000® Value-Defensive Index®     |     |     | Russell Midcap® Value-Defensive Index®  |     |     |
| Russell 3000® Growth-Defensive Index® |     |     | Russell 1000® Value-Dynamic Index®       |     |     | Russell Midcap® Value-Dynamic Index®    |     |     |
| Russell 3000® Growth-Dynamic Index®   |     |     | Russell Top 200® Index                   |     |     | Russell Midcap® Index                   |     |     |
| Russell 3000® Value-Defensive Index®  |     |     | Russell Top 200® Value Index             |     |     | Russell Midcap® Value Index             |     |     |
| Russell 3000® Value-Dynamic Index®    |     |     | Russell Top 200® Growth Index            |     |     | Russell Midcap® Growth Index            |     |     |
|                                       |     |     | Russell Top 200® Defensive Index®        |     |     | Russell Midcap® Defensive Index®        |     |     |
|                                       |     |     | Russell Top 200® Dynamic Index®          |     |     |   |     |     |
|                                       |     |     | Russell Top 200® Growth-Defensive Index® |     |     |   |     |     |
|                                       |     |     | Russell Top 200® Growth-Dynamic Index®   |     |     |   |     |     |
|                                       |     |     | Russell Top 200® Value-Defensive Index®  |     |     |   |     |     |
|                                       |     |     | Russell Top 200® Value-Dynamic Index®    |     |     |   |     |     |
|                                       |     |     | Russell Top 50® Mega Cap Index           |     |     |   |     |     |
|                                       |     |     | Russell 1000® Index                      |     |     |   |     |     |
|                                       |     |     | Russell 1000® Value Index                |     |     |   |     |     |
|                                       |     |     | Russell 1000® Growth Index               |     |     |   |     |     |

| Small-mid U.S. indexes                | Small cap U.S. indexes                       | Microcap U.S. indexes          |
|---------------------------------------|--|--------------------------------|
| Russell 2500™ Index                   | Russell 2000® Index                          | Russell Microcap® Index        |
| Russell 2500™ Value Index             | Russell 2000® Value Index                    | Russell Microcap® Value Index  |
| Russell 2500™ Growth Index            | Russell 2000® Growth Index                   | Russell Microcap® Growth Index |
| Russell 2500™ Defensive Index®        | Russell 2000® Defensive Index®               |                                |
| Russell 2500™ Dynamic Index®          | Russell 2000® Dynamic Index®                 |                                |
| Russell 2500™ Growth-Defensive Index® | Russell 2000® Growth-Dynamic Index®          |                                |
| Russell 2500™ Growth-Dynamic Index®   | Russell 2000® Value-Defensive Index®         |                                |
| Russell 2500™ Value-Defensive Index®  | Russell 2000® Value-Dynamic Index®           |                                |
| Russell 2500™ Value-Dynamic Index®    | Russell 2000® Growth-Defensive Index®        |                                |
|                                       | Russell Small Cap Completeness® Index        |                                |
|                                       | Russell Small Cap Completeness® Value Index  |                                |
|                                       | Russell Small Cap Completeness® Growth Index |                                |



## Section 2

# Management Responsibilities

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## 2.0 Management Responsibilities

### 2.1 FTSE International Limited (FTSE)

2.1.1 FTSE is the benchmark administrator of the index.<sup>2</sup>

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 Amendments to the Construction and Methodology

2.2.1 This Construction and Methodology 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. Any proposals for significant amendments to the Construction and 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.

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<sup>2</sup> 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).





## Section 3

# FTSE Russell Index Policies

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### 3.0 FTSE Russell Index Policies

These Ground Rules should be read in conjunction with the following policy documents which can be accessed using the links below:

#### 3.1 Queries, Complaints and Appeals

- 3.1.1 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](#)

#### 3.2 Index Policy for Trading Halts and Market Closures

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

[Index\\_Policy\\_for\\_Trading\\_Halts\\_and\\_Market\\_Closures.pdf](#)

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

- 3.3.1 Details of FTSE Russell's treatment can be accessed using the following link:

[Index\\_Policy\\_in\\_the\\_Event\\_Clients\\_are\\_Unable\\_to\\_Trade\\_a\\_Market.pdf](#)

### 3.4 **Recalculation Policy and Guidelines**

- 3.4.1 The Russell 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](mailto:info@ftserussell.com).

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

### 3.5 **Policy for Benchmark Methodology Changes**

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

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

## Section 4

# Basic Methodology

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### 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 (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 6. 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, 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).

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

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### 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 exchange 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, 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 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 March

## 5.5 Steps to determining U.S. country assignment:

|               |  |  |   |
|---------------|--|--|---|
| <b>STEP 1</b> | <b>Is the company incorporated in, traded in, and headquartered in one unique country?</b> | <b>YES – Classified in the unique country</b>      | <b>NO – Move to Step 2</b>                |
| <b>STEP 2</b> | 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                       |
| <b>STEP 3</b> | 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                       |
| <b>STEP 4</b> | 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

|               |  |                                |                       |
|---------------|--|--------------------------------|-----------------------|
| <b>STEP 1</b> | <b>Is the company incorporated in, traded in, and headquartered in one unique country?</b> | <b>NO – Move to Step 2</b>     |                       |
| <b>STEP 2</b> | Are the company’s reported assets primarily located in the one of the HCIs?                | NO – Canada<br>Move to Step 3  |                       |
| <b>STEP 3</b> | Are the company’s reported revenues primarily located in one of the HCIs?                  | NO – No Data<br>Move to Step 4 |                       |
| <b>STEP 4</b> | Is the company headquartered in a non-BDI country?   | YES – China                    | CLASSIFICATION: China |

## 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<br>1 | Is the company incorporated in, traded in, and headquartered in one unique country?  | YES – Ireland | Assigned to Ireland |
|-----------|--|---------------|---------------------|
| 5.6       | <b>Trading requirements</b>  |               |                     |
| 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       | <b>Exchange and Segment requirements</b>   |               |                     |
| 5.7.1     | In construction of its equity indexes, FTSE Russell reviews each exchange considering closing mechanism, regulatory requirements for each exchange segment, settlement, trading rules and recognition of the exchange by the governing regulatory body. Following review of US exchanges, the following markets are deemed eligible. There is no minimum number of securities required for the Russell U.S. indexes. <b>Eligible U.S. Exchanges:</b> CBOE, IEX, NYSE, NYSE American, NASDAQ, ARCA.   |               |                     |
| 5.8       | <b>Minimum closing price</b>   |               |                     |
| 5.8.1     | A stock must have a close price at or above \$1.00 (on its primary exchange) on rank 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 rank day in May, it will be considered eligible if the average of the daily closing prices (from its primary exchange) during the 30 days prior to the rank date 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       | <b>Minimum total market capitalization</b>   |               |                     |
| 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      | <b>Minimum available shares / float requirement</b>  |               |                     |
| 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 5: Adjustments to Members' Shares Outstanding (Float), for details on calculations of available shares.   |               |                     |
| 5.11      | <b>Company structure</b>   |               |                     |
| 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 Publicly Traded Partnerships (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. 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:

$$\frac{\text{The number of votes in the hands of shareholders that are unrestricted as determined by the application of FTSE Russell free float definitions}}{\text{The total number of votes conferred by the shares outstanding of all the company's voting securities including those that have not been admitted to trading on a regulated venue}}$$

**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:

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



## Section 6

# Defining Membership by size

## Market capitalization

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### 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.

#### 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 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 rank day in May and the Friday prior to 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 final week of reconstitution (during which reconstitution is finalized Friday after U.S. market close), 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 Reconstitution

6.5.1 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 that of the smallest company in the Russell 3000E™ Index.
- **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

6.5.2 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. 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.

6.5.3 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.

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

## 6.6 Corporate Actions

6.6.1 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).

## 6.7 **IPOs**

6.7.1 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 2. 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 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.

6.7.2 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.

## 6.8 **Initial public offerings (IPOs)**

6.8.1 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 8.

## 6.9 Russell U.S. Indexes IPO calendar:

| Quarterly additions     | Guidelines  | 2018 Third-quarter additions                                | 2018 Fourth-quarter additions                               | 2019 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 12 and Aug 17. | IPOs which initially price/trade between Aug 18 and Nov 16. | IPOs which initially price/trade between Nov 17 and Feb 08. |
| Rank date*              | Five weeks prior to implementation.   | 17-Aug  | 16-Nov  | 08-Feb  |
| Announce date*          | Three weeks prior to implementation.  | 31-Aug  | 30-Nov  | 22 Feb  |
| Effective date**        | Third Friday of the month.  | 21-Sep  | 21-Dec  | 15-Mar  |

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

\*\* After the close on the third Friday of the month.

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.

## 6.10 Determining index membership

6.10.1 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<br>(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  |

6.10.2 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.

6.10.3 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.

6.11 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

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### 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

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### 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.

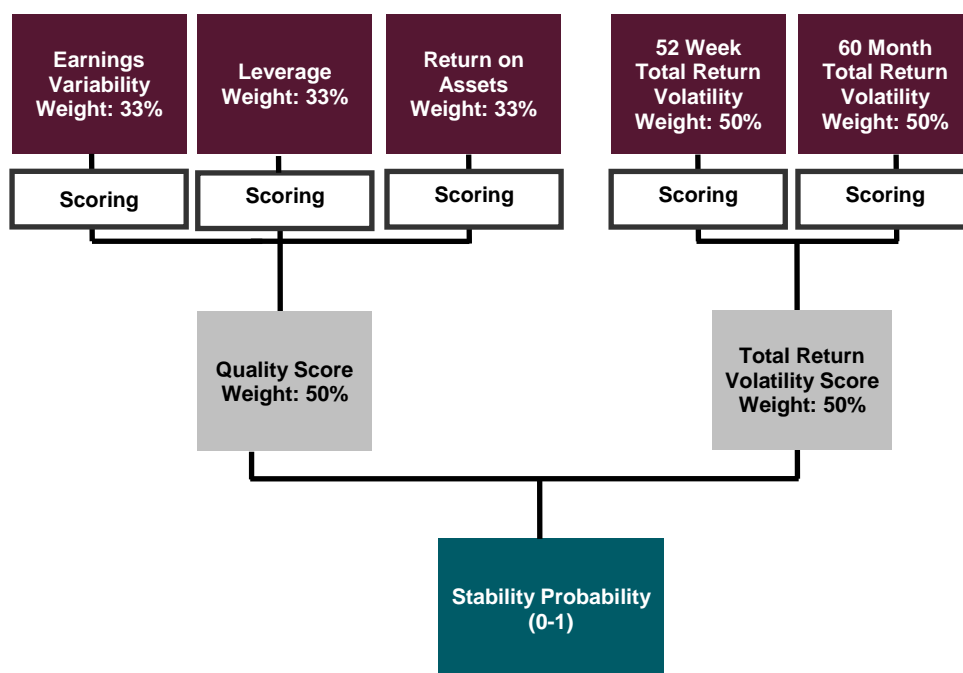
8.2.3 The process for assigning growth and value weights is applied separately to the stocks in the Russell 1000 and Russell 2000 and to the smallest 1,000 stocks in the Russell Microcap Index Research indicates that on average, valuations of small stocks differ from those of large stocks. Treating the 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 Indexes. 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. FTSE 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 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.



#### 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)

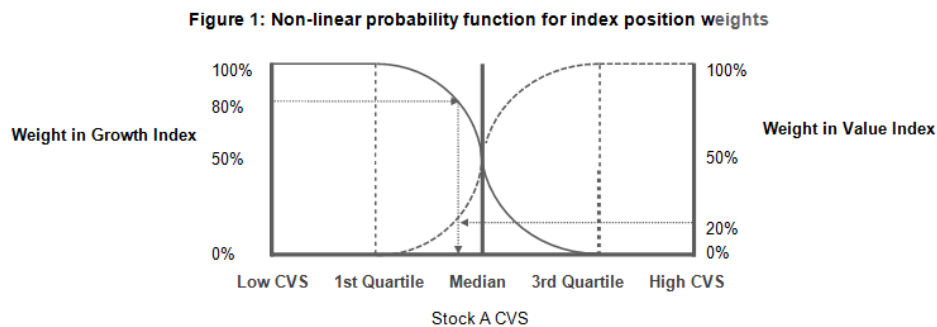
8.5.1 Total return volatility (standard deviation) is measured over two horizons, over the previous year and over the previous five years. Each indicator represents one half of the volatility score.

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  $\pm 0.10$  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

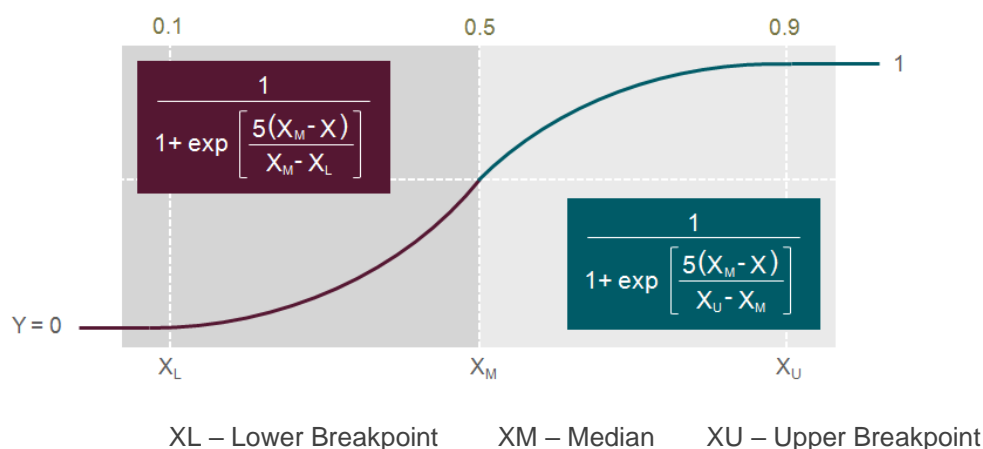
8.9.1 The market capitalization of the growth and value style indexes, as well as that of the defensive and dynamic stability indexes, may not each equal 50% of their base index. At first glance, this seems counterintuitive, since the methodology uses capitalization-weighted medians and quartiles, which 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 (5yr) (6 years of quarterly numbers are required), are allocated by using the mean value score of the base index (Russell 1000, Russell 2000, Russell Microcap) RGS (Russell Global Sectors) 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.

### Russell non-linear probability algorithm



## Section 9

# Corporate Action-Driven Changes

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### 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 and free float

- 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 29<sup>th</sup> or 30<sup>th</sup>, 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 percentage points 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 percentage point. 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 pricing date occurs more than two days after the pricing date, the update will be deferred until the next quarterly review

- 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 Corporate Actions and Events Guide.
- 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.





## Section 10

# Russell Equal Weight Indexes

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### 10.0 Russell Equal Weight Indexes

10.1.1 Russell research has shown that the process of equally weighting each sector within an underlying index, and then equally weighting each of the constituents within each sector, provides greater diversification benefits than only equally weighting the constituents of an underlying index.

#### 10.2 Available indexes

10.2.1 The following indexes are available for the Russell Equal Weight Indexes:

**Russell 1000<sup>®</sup> Equal Weight Index**

Russell 2000<sup>®</sup> Equal Weight Index

Russell Midcap<sup>®</sup> Equal Weight Index

Russell Top 200<sup>®</sup> Equal Weight Index

Russell 1000<sup>®</sup> Equal Weight Consumer Discretionary Index

Russell 1000<sup>®</sup> Equal Weight Consumer Staples Index

Russell 1000<sup>®</sup> Equal Weight Energy Index

Russell 1000<sup>®</sup> Equal Weight Financial Services Index

Russell 1000<sup>®</sup> Equal Weight Health Care Index

Russell 1000<sup>®</sup> Equal Weight Materials & Processing Index

Russell 1000<sup>®</sup> Equal Weight Producer Durables Index

Russell 1000<sup>®</sup> Equal Weight Technology Index

Russell 1000<sup>®</sup> Equal Weight Utilities Index

10.2.2 Each quarter, each sector<sup>3</sup> in the underlying index is allocated an equal weight (i.e.,  $1/N$ , where  $N$  is the number of sectors in the Market Cap Index). Next, each constituent within each sector is assigned an equal weight within that sector (i.e.,  $1/N$ , where  $N$  is the number of constituents within the sector.)

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<sup>3</sup> The sector scheme used in the construction of the Russell Equal Weight Indexes is the Russell Global Sectors (RGS) classification system, which has nine sectors: Consumer Discretionary, Consumer Staples, Energy, Financial Services, Health Care, Materials & Processing, Producer Durables, Technology and Utilities

10.2.3 A capacity screen is then applied to the securities in the Russell Equal Weight Indexes. Capacity is defined as the total amount that can theoretically be invested in a company. For a security that has 100% of its shares freely available, the maximum capacity is defined as the total market capitalization of that security. To be eligible for membership, the share position of a potential constituent cannot exceed 5% of the float-adjusted shares of a company when a notional value of \$5 billion is assumed to be invested in the portfolio. (An example is provided in the appendix.)<sup>4</sup>

10.2.4 If the parent index includes multiple share classes for a given company, only the primary share class will be included in the index i.e., each company will have only one share class represented in the Russell Equal Weight Indexes.

### 10.3 Quarterly index re-weighting and annual reconstitution

10.3.1 The Russell Equal Weight Indexes are re-weighted at the close of the third Friday of the month in March, September, and December. June's re-weighting is completed at the same time as the annual reconstitution of the parent indexes.

### 10.4 Corporate action–driven changes

10.4.1 The Russell Equal Weight Indexes are proactively maintained and reflect daily changes in the global equity markets. 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 Indexes using the following link:

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

10.4.2 **Security classification changes:** If a security's sector classification changes following a corporate action event, (e.g., spin-off or reverse merger), it will be assigned to the appropriate sector subsequent to the implementation of the corporate action with appropriate notice. Consequently, the security will match its classification within the parent Russell U.S. Index. This also applies to regular, non-corporate action related sector re-classifications.

10.4.3 To understand the effects of the capacity screen, take a hypothetical nine-sector index with 30 constituent securities. The sector weight for each constituent is defined as  $1/N$ , where  $N$  is the number of sectors in the index – in other words, constituent weight is the sector weight divided by the number of constituents in the sector. In the example provided, the constituent weight of Company B is equal to 11.1% divided by 2.

A notional value of \$5 billion is assumed to be invested in the portfolio.

The price of each security is then taken at the quarterly re-weighting date and its notional share position is calculated by dividing the portfolio value by the price of the security.

If the ratio of the notional share amount to the float adjusted shares of the security is greater than 5%, the security is removed from the equal weight index.

In the example provided, the highlighted companies (Company D, Company E, Company U, Company AD) are removed from the hypothetical equal weight index.

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<sup>4</sup> After securities' weights are reset, they may change as often as daily as stock prices fluctuate.

| Company    | Sector                 | Weight For each sector | # of constituents In sector | Constituent weight | Portfolio Value* | Price | Shares held in portfolio | Float adjusted shares | % of float adjusted shares |
|------------|------------------------|------------------------|-----------------------------|--------------------|------------------|-------|--------------------------|-----------------------|----------------------------|
| +          | Consumer Discretionary | 11.1%                  | 2                           | 5.56%              | 277,777,778      | 23    | 12,077,295               | 120,772,946,860       | 0.0%                       |
| Company B  | Consumer Discretionary | 11.1%                  | 2                           | 5.56%              | 277,777,778      | 15    | 18,518,519               | 1,851,851,852         | 1.0%                       |
| Company C  | Consumer Staples       | 11.1%                  | 4                           | 2.78%              | 138,888,889      | 48    | 2,893,519                | 72,337,963            | 4.0%                       |
| Company D  | Consumer Staples       | 11.1%                  | 4                           | 2.78%              | 138,888,889      | 55    | 2,525,253                | 36,075,036            | 7.0%                       |
| Company E  | Consumer Staples       | 11.1%                  | 4                           | 2.78%              | 138,888,889      | 19    | 7,309,942                | 73,099,415            | 10.0%                      |
| Company F  | Consumer Staples       | 11.1%                  | 4                           | 2.78%              | 138,888,889      | 33    | 4,208,754                | 1,402,918,070         | 0.3%                       |
| Company G  | Energy                 | 11.1%                  | 3                           | 3.70%              | 185,185,185      | 67    | 2,763,958                | 460,659,665           | 0.6%                       |
| Company H  | Energy                 | 11.1%                  | 3                           | 3.70%              | 185,185,185      | 42    | 4,409,171                | 1,469,723,692         | 0.3%                       |
| Company I  | Energy                 | 11.1%                  | 3                           | 3.70%              | 185,185,185      | 89    | 2,080,732                | 456,300,969           | 0.5%                       |
| Company J  | Financial Services     | 11.1%                  | 5                           | 2.22%              | 111,111,111      | 12    | 9,259,259                | 1,381,978,994         | 0.7%                       |
| Company K  | Financial Services     | 11.1%                  | 5                           | 2.22%              | 111,111,111      | 27    | 4,115,226                | 4,623,849,817         | 0.1%                       |
| Company L  | Financial Services     | 11.1%                  | 5                           | 2.22%              | 111,111,111      | 1230  | 90,334                   | 1,290,489,095         | 0.0%                       |
| Company M  | Financial Services     | 11.1%                  | 5                           | 2.22%              | 111,111,111      | 8     | 13,888,889               | 462,962,963           | 3.0%                       |
| Company N  | Financial Services     | 11.1%                  | 5                           | 2.22%              | 111,111,111      | 215   | 516,796                  | 527,342,720           | 0.1%                       |
| Company O  | Health Care            | 11.1%                  | 4                           | 2.78%              | 138,888,889      | 43    | 3,229,974                | 4,969,191,016         | 0.1%                       |
| Company P  | Health Care            | 11.1%                  | 4                           | 2.78%              | 138,888,889      | 27    | 5,144,033                | 907,236,847           | 0.6%                       |
| Company Q  | Health Care            | 11.1%                  | 4                           | 2.78%              | 138,888,889      | 14    | 9,920,635                | 496,031,746           | 2.0%                       |
| Company R  | Health Care            | 11.1%                  | 4                           | 2.78%              | 138,888,889      | 73    | 1,902,588                | 350,384,442           | 0.5%                       |
| Company S  | Producer Durables      | 11.1%                  | 2                           | 5.56%              | 277,777,778      | 26    | 10,683,761               | 267,094,017           | 4.0%                       |
| Company T  | Producer Durables      | 11.1%                  | 2                           | 5.56%              | 277,777,778      | 45    | 6,172,840                | 68,587,105,624        | 0.0%                       |
| Company U  | Technology             | 11.1%                  | 6                           | 1.85%              | 92,592,593       | 120   | 771,605                  | 13,536,929            | 5.7%                       |
| Company V  | Technology             | 11.1%                  | 6                           | 1.85%              | 92,592,593       | 45    | 2,057,613                | 2,611,184,224         | 0.1%                       |
| Company W  | Technology             | 11.1%                  | 6                           | 1.85%              | 92,592,593       | 342   | 270,739                  | 791,633,260           | 0.0%                       |
| Company X  | Technology             | 11.1%                  | 6                           | 1.85%              | 92,592,593       | 38    | 2,436,647                | 5,378,912,083         | 0.0%                       |
| Company Y  | Technology             | 11.1%                  | 6                           | 1.85%              | 92,592,593       | 67    | 1,381,979                | 6,008,604,321         | 0.0%                       |
| Company Z  | Technology             | 11.1%                  | 6                           | 1.85%              | 92,592,593       | 15    | 6,172,840                | 791,389,680           | 0.8%                       |
| Company AA | Utilities              | 11.1%                  | 2                           | 5.56%              | 277,777,778      | 29    | 9,578,544                | 2,128,565,347         | 0.5%                       |
| Company AB | Utilities              | 11.1%                  | 2                           | 5.56%              | 277,777,778      | 8     | 34,722,222               | 6,123,848,716         | 0.6%                       |
| Company AC | Materials & Processing | 11.1%                  | 2                           | 5.56%              | 277,777,778      | 4     | 69,444,444               | 30,062,530,063        | 0.2%                       |
| Company AD | Materials & Processing | 11.1%                  | 2                           | 5.56%              | 277,777,778      | 58    | 4,789,272                | 53,214,134            | 9.0%                       |

\* This hypothetical example is for illustration only and is not intended to reflect an actual value.

## 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 <sup>®</sup>                                |          | .RUI                | RIY                           | RU10INTR                      |      | IWB         |
| Russell 1000 <sup>®</sup> Mini                           |          | .RUI.M              | RXU                           |                               |      |             |
| Russell 1000 <sup>®</sup> Value                          |          | .RLV                | RLV                           | RU10VATR                      | RLV  | IWD         |
| Russell 1000 <sup>®</sup> Growth                         |          | .RLG                | RLG                           | RU10GRTR                      | RLG  | IWF         |
| Russell 1000 <sup>®</sup> Defensive Index <sup>®</sup>   |          | .RU1000DF           | RU1000DF                      |                               |      |             |
| Russell 1000 <sup>®</sup> Dynamic Index <sup>®</sup>     |          | .RU1000DY           | RU1000DY                      |                               |      |             |
|  |          |                     |                               |                               |      |             |
| Russell 2000 <sup>®</sup>                                | 12483510 | .RUT                | RTY                           | RU20INTR                      |      | IWM         |
| Russell 2000 <sup>®</sup> Mini                           |          | .RUT.M              |                               |                               |      |             |
| Russell 2000 <sup>®</sup> Value                          |          | .RUJ                | RUJ                           | RU20VATR                      | RUJ  | IWN         |
| Russell 2000 <sup>®</sup> Growth                         |          | .RUO                | RUO                           | RU20GRTR                      | RUO  | IWO         |
| Russell 2000 <sup>®</sup> Defensive Index <sup>®</sup>   |          | .RU2000DF           | RU2000DF                      |                               |      |             |
| Russell 2000 <sup>®</sup> Dynamic Index <sup>®</sup>     |          | .RU2000DY           | RU2000DY                      |                               |      |             |
|  |          |                     |                               |                               |      |             |
| Russell 3000 <sup>®</sup>                                |          | .RUA                | RAY                           | RU30INTR                      |      | IWV         |
| Russell 3000 <sup>®</sup> Mini                           |          | .RUA.M              |                               |                               |      |             |
| Russell 3000 <sup>®</sup> Value                          |          | .RAV                | RAV                           | RU30VATR                      | RAV  | IWW         |
| Russell 3000 <sup>®</sup> Growth                         |          | .RAG                | RAG                           | RU30GRTR                      | RAG  | IWZ         |
| Russell 3000 <sup>®</sup> Defensive Index <sup>®</sup>   |          | .RU3000DF           | RU3000DF                      |                               |      |             |
| Russell 3000 <sup>®</sup> Dynamic Index <sup>®</sup>     |          | .RU3000DY           | RU3000DY                      |                               |      |             |
|  |          |                     |                               |                               |      |             |
| Russell 2500 <sup>™</sup>                                |          | .R25I               | R2500                         | RU25INTR                      |      | <b>SMMD</b> |
| Russell 2500 <sup>™</sup> Value                          |          | .R25IV              | R2500V                        | RU25VATR                      |      |             |
| Russell 2500 <sup>™</sup> Growth                         |          | .R25IG              | R2500G                        | RU25GRTR                      |      |             |
| Russell 2500 <sup>™</sup> Defensive Index <sup>®</sup>   |          | .RU2500DF           | RU2500DF                      |                               |      |             |
| Russell 2500 <sup>™</sup> Dynamic Index <sup>®</sup>     |          | .RU2500DY           | RU2500DY                      |                               |      |             |
|  |          |                     |                               |                               |      |             |
| Russell Midcap <sup>®</sup>                              |          | .RMCC               | RMC                           | RUMCINTR                      | RMC  | IWR         |
| Russell Midcap <sup>®</sup> Value                        |          | .RMCCV              | RMV                           | RUMCVATR                      | RMV  | IWS         |
| Russell Midcap <sup>®</sup> Growth                       |          | .RMCCG              | RDG                           | RUMCGRTR                      | RCG  | IWP         |
| Russell Midcap <sup>®</sup> Defensive Index <sup>®</sup> |          | .RUMCAPDF           | RUMCAPDF                      |                               |      |             |
| Russell Midcap <sup>®</sup> Dynamic Index <sup>®</sup>   |          | .RUMCAPDY           | RUMCAPDY                      |                               |      |             |

| Russell index                          | CUSIP | Thomson Reuters RIC | Bloomberg symbol price return | Bloomberg Symbol total return | AMEX | ETF |
|--|-------|---------------------|-------------------------------|-------------------------------|------|-----|
| Russell Top 200®                       |       | .RT200              | R200                          | RUTPINTR                      | RTL  | IWL |
| Russell Top 200® Value                 |       | .RT200V             | R200V                         | RUTPVATR                      | RVA  | IWX |
| Russell Top 200® Growth                |       | .RT200G             | R200G                         | RUTPGRTR                      | RTS  | IWY |
| Russell Top 200® Defensive Index®      |       | .RUT200DF           | RUT200DF                      |                               |      |     |
| Russell Top 200® Dynamic Index®        |       | .RUT200DY           | RUT200DY                      |                               |      |     |
|  |       |                     |                               |                               |      |     |
| Russell Small Cap Completeness®        |       | .RSCC               | RSCC                          | RSCCINTR                      |      |     |
| Russell Small Cap Completeness® Value  |       | .RSCCV              | RSCCV                         | RSCCVATR                      |      |     |
| Russell Small Cap Completeness® Growth |       | .RSCCG              | RSCCG                         | RSCCGRTR                      |      |     |
|  |       |                     |                               |                               |      |     |
| Russell Top 50® Mega Cap               |       | .RU50               | RTOP50                        | RUTP50TR                      |      |     |
|  |       |                     |                               |                               |      |     |
| Russell Microcap®                      |       | .RUMIC              | RMICRO                        | RUTPMCTR                      |      | IWC |
| Russell Microcap® Value                |       | .RUMICV             | RMICROV                       | RUMRVATR                      |      |     |
| Russell Microcap® Growth               |       | .RUMICG             | RMICROG                       | RUMRGRTR                      |      |     |

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 |           | Calculated real time * |           |
|----------------------------|-----------------------|-----------|------------------------|-----------|
|                            | 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        |
| Russell 1000® Dynamic      | 12/31/10 = 1000.00    | 7/1/96    | NA                     | NA        |
|                            |                       |           |                        |           |
| 7Russell 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 Midcap®            | 12/31/78 = 100.00     | 12/31/78  | 08/31/92 = 200.00      | 08/31/92  |
| Russell Midcap® Growth     | 12/31/85 = 100.00     | 12/31/85  | 03/16/00 = 500.00      | 03/16/00  |
| Russell Midcap® Value      | 12/31/85 = 100.00     | 12/31/85  | 03/16/00 = 500.00      | 03/16/00  |
| Russell Midcap® Defensive  | 12/31/10 = 1000.00    | 7/1/96    | NA                     | NA        |
| Russell Midcap® Dynamic    | 12/31/10 = 1000.00    | 7/1/96    | NA                     | NA        |
|                            |                       |           |                        |           |
| Russell Top 200®           | 12/31/78 = 100.00     | 12/31/78  | 03/16/00 = 400.00      | 03/16/00  |
| Russell Top 200® Growth    | 12/31/85 = 100.00     | 12/31/85  | 03/16/00 = 400.00      | 03/16/00  |
| Russell Top 200® Value     | 12/31/85 = 100.00     | 12/31/85  | 03/16/00 = 400.00      | 03/16/00  |
| Russell Top 200® Defensive | 12/31/10 = 1000.00    | 7/1/96    | NA                     | NA        |

| Index                                       | Calculated end of day |           | Calculated real time * |           |
|---|-----------------------|-----------|------------------------|-----------|
|   | Base date/value       | Inception | Base date/value        | Inception |
| Russell Top 200 <sup>®</sup> Dynamic        | 12/31/10 = 1000.00    | 7/1/96    | NA                     | NA        |
| Russell 2500 <sup>™</sup>                   | 12/31/90 = 100.00     | 12/31/78  | 11/30/03 = 200         | 11/30/03  |
| Russell 2500 <sup>™</sup> Growth            | 05/31/95 = 1000.00    | 12/31/85  | 11/30/03 = 200         | 11/30/03  |
| Russell 2500 <sup>™</sup> Value             | 05/31/95 = 1000.00    | 12/31/85  | 11/30/03 = 200         | 11/30/03  |
| Russell 2500 <sup>™</sup> Defensive         | 12/31/10 = 1000.00    | 7/1/07    | NA                     | NA        |
| Russell 2500 <sup>™</sup> Dynamic           | 12/31/10 = 1000.00    | 7/1/07    | NA                     | NA        |
| Russell Small Cap Completeness <sup>®</sup> | 3/31/99 = 1000.00     | 12/31/79  | 11/30/03 = 500         | 11/30/03  |
| Russell SCC Growth                          | 3/31/99 = 1000.00     | 12/31/79  | 11/30/03 = 500         | 11/30/03  |
| Russell SCC Value                           | 3/31/99 = 1000.00     | 12/31/79  | 11/30/03 = 500         | 11/30/03  |
| Russell Top 50 <sup>®</sup> Mega Cap        | 12/31/01 = 1000.00    | 3/21/05   | 915.03                 | 3/18/05   |
| Russell Microcap <sup>®</sup> Index         | 6/24/05 = 1000.00     | 6/30/00   | 9/25/05 = 300          | 9/25/05   |
| Russell Microcap <sup>®</sup> Growth        | 6/30/06 = 1000.00     | 6/30/00   | NA                     |           |
| Russell Microcap <sup>®</sup> Value         | 6/30/06 = 1000.00     | 6/30/00   | NA                     |           |
| Russell 3000E <sup>™</sup> 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

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### 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 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. However, "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"*   |
|--|---|
| <b>Country:</b><br>(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                      |
| <b>Region:</b><br>(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 |
| <b>Combination of single country &amp; region(s):</b>                        | Total assets/revenues for HCI country is greater than 20 percentage points of any reported region   |
| <b>Combination of single country or single region and rest of the world:</b> | Total assets/revenue for HCI is 40 or more percentage points of the rest of the world category  |
| <b>No, or insufficient, data available:</b>                                  | 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                                      | Faroe Islands            |
| Liechtenstein                         | Antigua and Barbuda                           | Gibraltar                |
| Monaco                                | Aruba   | Guernsey                 |
| Suriname                              | Bahamas                                       | Isle of Man              |
|                                       | Barbados                                      | Jersey                   |
|                                       | Belize  | Liberia                  |
|                                       | Bermuda                                       | Marshall Islands         |
|                                       | Bonaire                                       | Panama                   |
|                                       | British Virgin Islands                        | Saba                     |
|                                       | Cayman Islands                                | Sint Eustatius           |
|                                       | Channel Islands                               | Sint Maarten             |
|                                       | Cook Islands                                  | Turks and Caicos Islands |
|                                       | Curacao                                       |                          |



## 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<br>(\$USD in millions) | Year 1 calculated percentage |
|--------------|--|------------------------------|
| US           | 6  | 30.00%                       |
| <b>China</b> | <b>3</b>                                       | <b>15.00%</b>                |
| Country 3    | 3  | 15.00%                       |
| Country 4    | 3  | 15.00%                       |
| Country 5    | 3  | 15.00%                       |
| Country 6    | 2  | 10.00%                       |
| <b>Total</b> | <b>\$20M</b>                                   | <b>100.00%</b>               |

**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<br>(\$USD in millions) | Year 1 calculated percentage |
|----------------------|--|------------------------------|
| <b>North America</b> | <b>6</b>                                       | <b>37.50%</b>                |
| Europe               | 2  | 12.50%                       |
| Asia                 | 2  | 12.50%                       |
| Middle East          | 2  | 12.50%                       |
| Africa               | 2  | 12.50%                       |
| South America        | 2  | 12.50%                       |
| <b>Total</b>         | <b>\$16M</b>                                   | <b>100.00%</b>               |

**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<br>(\$USD in millions) | Year 1 calculated percentage |
|---------------------|--|------------------------------|
| <b>U.S.</b>         | <b>10M</b>                                     | <b>77.00%</b>                |
| All Other Countries | 3M   | 23.00%                       |
| <b>Total</b>        | <b>\$13M</b>                                   | <b>100.00%</b>               |

**Results:** Total U.S. assets/revenues comprise more than 40% of the total assets compared to the rest of the world. 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; or the 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

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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 expected 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<br>(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

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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

## **For more information about our indexes, please visit [ftserussell.com](http://ftserussell.com).**

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