Construction and methodology

FTSE
Russell

Russell Stability Index® Series
v2.2

Contents

Section 1

Introduction

1.0   Introduction

1.1   The Russell Stability Index Series

1.1.1   The Russell Stability Index Series is designed to be a comprehensive representation of the investable global defensive and dynamic equity markets.[1] Defensive and Dynamic indexes are created by splitting an existing applicable Russell index in half based on the combination of the stability indicators; the more stable half of the market is called "Defensive," and the less stable half is called "Dynamic."

1.2   **Overview**

1.2.1   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. The Russell Defensive and Dynamic indexes complement the existing Russell Style framework – size (small / large) and valuation (growth / value) – expanding the style box into the style cube with the addition of Stability, the Third Dimension of Style™.

1.2.2   The term "probability" is used to indicate the degree of certainty that a stock is defensive or dynamic, based on its relative debt/equity, return on assets (ROA), earnings variability, and total return volatility (52-week and 60-month). This method allows stocks to be represented as having both defensive and dynamic characteristics, while preserving the additive nature of the indexes.

1.2.3   Defensive and dynamic style indexes may be constructed for any equity universe. The Russell Stability indexes cover all countries and regions represented in the Russell Global index family, composed of the Russell 3000® Index, which captures 98% of the U.S. equity universe, and the largest 98% of the rest of the global equity universe. The process for assigning defensive and dynamic weights is applied separately to large cap and small cap stocks, consistent with the process of assigning growth and value style probabilities.

---

[1] Russell index methodologies are continually reviewed by product managers. Topics under consideration may result from direct inquiry, request for clarification or research; considerations are analyzed against 4 guiding principles of index methodology (Objective representation, replicable, transparent, passively managed cost). Evaluation procedures include historical analysis of potential impacts of methodology changes and how turnover, fundamental characteristics and measures factor, style or asset class is affected.

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

1.3   FTSE Russell

1.3.1   FTSE Russell is a trading name of FTSE International Limited, Frank Russell Company, FTSE Global Debt Capital Markets Limited (and its subsidiaries FTSE Global Debt Capital Markets Inc. and MTSNext Limited), Mergent, Inc., FTSE Fixed Income LLC and The Yield Book Inc.

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

1.3.3   Index users who choose to follow this index series or to buy products that claim to follow this index series should assess the merits of the index's rules-based methodology and take independent investment advice before investing their own or client funds. No liability whether as a result of negligence or otherwise is accepted by FTSE Russell for any losses, damages, claims and expenses suffered by any person as a result of:

- any reliance on these Ground Rules, and/or
- any errors or inaccuracies in these Ground Rules, and/or
- any non-application or misapplication of the policies or procedures described in these Ground Rules, and/or
- any errors or inaccuracies in the compilation of the index or any constituent data.

Section 2

Management Responsibilities

2.0   Management Responsibilities

2.4   FTSE International Limited

2.4.1   FTSE is the benchmark administrator.

2.4.2   FTSE Russell is responsible for the daily calculation, production and operation of the index series and will:

- maintain records of the index weightings of all constituents;

- make changes to the constituents and their weightings in accordance with the Ground Rules;

- carry out the periodic index reviews of the index series and apply the changes resulting from the reviews as required by the Ground Rules;

- publish changes to the constituent weightings resulting from their ongoing maintenance and the periodic reviews;

- disseminate the indexes.

2.5   Amendments to These Ground Rules

2.5.1   These Ground Rules shall be subject to regular review (at least once a year) by FTSE Russell to ensure that they continue to meet the current and future requirements of investors and other index users. Any proposals for significant amendments to these Ground Rules will be subject to consultation with FTSE Russell advisory committees and other stakeholders if appropriate. The feedback from these consultations will be considered by the FTSE Russell Product Governance Board before approval is granted.

Section 3

FTSE Russell Index Policies

3.0   FTSE Russell Index Policies

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

3.6   Queries and Complaints

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

Benchmark_Determination_Complaints_Handling_Policy.pdf

3.7   Index Policy for Trading Halts and Market Closures

3.7.1   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

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

3.8.1   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

3.9   Recalculation Policy and Guidelines

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

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

Recalculation_Policy_and_Guidelines_Equity_Indexes.pdf

3.10   Policy for Benchmark Methodology Changes

3.10.1   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

Construction and Methodology

4.0 Construction and Methodology
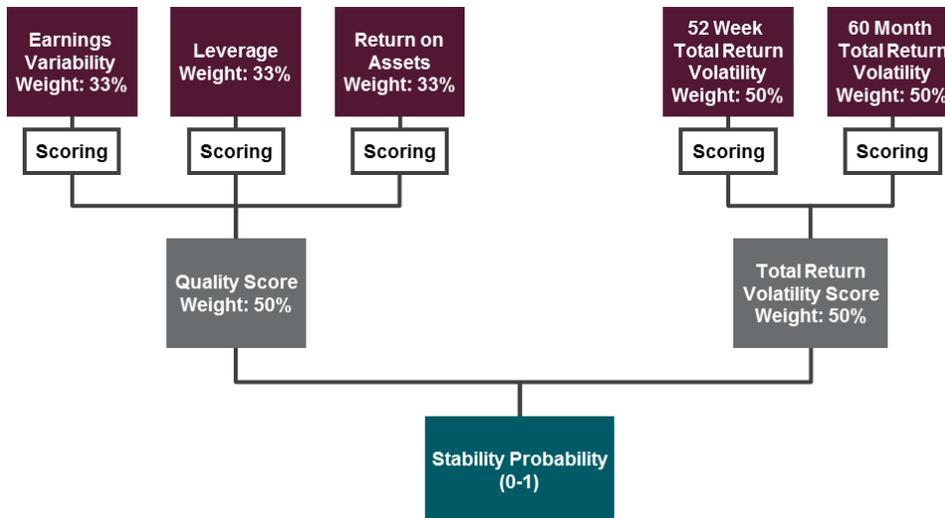
4.11 Stability indicators in general

4.11.1 For each base index (for U.S. companies -the Russell 1000® Index and Russell 2000® Index, and for Global ex-U.S. companies - the Russell Global ex-U.S. Large Cap and Russell Global ex-U.S. Small Cap indexes), there are five specific variables used to determine the probability of being defensive or dynamic: Debt/Equity, Return on Assets (ROA), Earnings Variability and Total Return Volatility (52-week and 60-month frequencies).

4.11.2 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. 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.

4.12 General construction considerations

4.12.1 Using the Russell non-linear style algorithm, companies with high stability probabilities are included in the Russell Defensive Indexes. Companies with low stability probabilities are included in the Russell Dynamic Indexes.

4.12.2 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 variables 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 stock's past year's weekly total return volatility and the past 5 years' monthly total return volatility.

4.12.3 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.

4.13 Detailed construction and methodology

4.13.1 The stability of a company, also referred to as the stability probability, is determined by combining the quality variables with total return volatility. The quality score (derived by combining the three quality variables) represents 50% of the stability score while volatility score (derived by total return volatility) represents the other 50%.

4.14 Quality score (comprises 50% of the overall stability probability)

4.14.1 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. Annual attribute data is used for global ex-U.S. companies to create global-relative defensive and dynamic indexes. Quarterly attribute data is used to create the U.S. defensive and dynamic indexes.

4.14.2 **Debt/equity:** The debt/equity ratio for global ex-U.S. companies is based on the most recent annual report. The debt/equity ratio for U.S. companies is based on the most recent quarterly SEC filing. Negative debt/equity numbers will not be used to calculate debt/equity. Rather, negative debt/equity is excluded in the analysis and the indicator for this company will be set to zero/dynamic.

4.14.3 **Pre-tax ROA:** The pre-tax ROA for global ex-U.S. companies is based on the annual year-end pre-tax income divided by the average of the latest year-end and previous year-end assets (latest year-end assets + previous year-end assets)/2).The pre-tax ROA for U.S. companies is based on the last 12 months' pre-tax income divided by the average of the assets for the previous year, or (current assets + same quarter one year prior)/2).

4.14.4 **Earnings variability:** The earnings variability for global ex-U.S. companies is computed by dividing the standard deviation of the company's earnings-per-share (EPS) by the company's median earnings for the previous 5 years. This scaling normalizes the information to make each company directly comparable to other companies regardless of the relative level of EPS. If there are less than 5 annual EPS observations, earnings variability is considered NULL, and standard deviation will not be calculated (see "Missing Values" below).

Note: U.S. companies require 20 quarters of data in order to calculate earnings variability, which is based on the standard error of the linear EPS trend regression. If there are less than 20 EPS observations (or standard error is equal to zero), earnings variability is considered NULL and standard error will not be calculated (see "Missing Values" below). 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).

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

4.15 Volatility score (comprises 50% of the overall stability probability)

4.15.1 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.

4.15.2 **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. A stock must have 52 weeks of data points in order to populate, otherwise, the indicator will be set to NULL (see "Missing Values" below).

4.15.3 **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. A stock must have 60 months of data points in order to populate, otherwise, the indicator will be set to NULL (see "Missing Values" below).

4.16 Application in Russell non-linear style algorithm

4.16.1 The first stage of the Russell non-linear style algorithm yields a score between zero and one for each quality or volatility indicator. All measures are calculated so that higher values indicate greater stability, with the exception of ROA, i.e. relatively stable business conditions which are less sensitive to economic cycles, and market volatility based on their stability variables. Since high leverage, high earnings variability, and high volatility are indicative of less stable business conditions which are more sensitive to economic cycles, credit cycles and market volatility based on their stability variables. Indicators are combined to form a quality score and a volatility score of 0-1, with 1 being defensive.

4.16.2 The second stage of the Russell non-linear style algorithm calculates the stability probability with the average of the Quality and Volatility scores, as its input. Companies comprising approximately 35% of equity universe capitalization will have a stability probability of one and companies another 35% of capitalization will have a stability probability of zero. The remainder will be both defensive and dynamic.

4.17 Russell non-linear probability algorithm

$$Y = 0 \quad \Bigg| \quad \frac{1}{1 + \exp\left(\frac{5(X_M - X)}{X_M - X_L}\right)} \quad \Bigg| \quad 0.5 \quad \Bigg| \quad \frac{1}{1 + \exp\left(\frac{5(X_M - X)}{X_U - X_M}\right)} \quad \Bigg| \quad 1$$

$$X_L \qquad\qquad X_M \qquad\qquad X_U$$

XL – Lower breakpoint   XM – Median   XU – Upper breakpoint
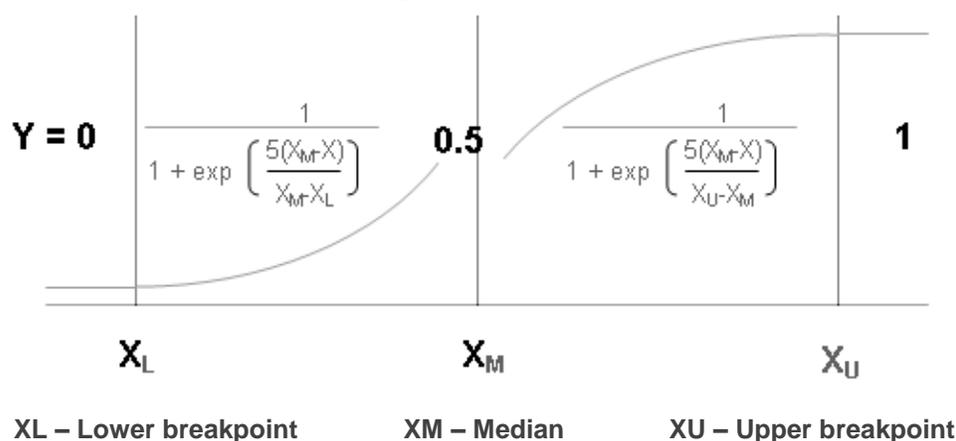
4.18 Missing values

4.18.1 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

4.19 Corporate action-driven changes

4.19.1 The members of the Russell Stability indexes are proactively maintained and reflect daily changes in the global equity market as a result of corporate actions.

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

Corporate Actions and Events Guide Market Cap Weighted Indices.pdf

4.19.3 Quarterly IPOs entering the Russell Stability Indexes will be defaulted to 100% Dynamic. At annual reconstitution, IPOs will be evaluated for inclusion in the Stability Indexes alongside other eligible new entrants to the indexes.

4.20 Growth and value stability indexes

4.20.1 FTSE Russell further extends the granularity of the style indexes by combining the Defensive and Dynamic Stability indexes with Growth and Value indexes.[2] These combined style indexes are calculated simply by multiplying each security's style probabilities (Growth/Value probability with Defensive/Dynamic probability). This creates Growth-Defensive, Value-Defensive, Growth-Dynamic, and Value-Dynamic indexes. The combined style indexes demonstrate the complementary nature of the third dimension of style and applicability of the Russell Stability indexes to growth and value managers in addition to market-oriented managers. The growth and value stability are available for the Russell US Indexes.

Example: Stock A

The stock of Company A has a 75% Defensive / 25% Dynamic probability (sums to 100%) and 60% Growth / 40% Value probability (also sums to 100%). The probability reflects the security's percentage of shares that belong to each index, i.e. if Company A has 1500 shares in the Russell 1000 Index, based on the probabilities, 1125 shares are in the Russell 1000 Defensive Index, 375 shares are in the Russell 1000 Dynamic Index, 900 shares are in the Russell 1000 Growth Index, and 600 shares are in the Russell 1000 Value Index.

---

[2] See the Russell U.S. Index Construction and Methodology document available at www.ftserussell.com.

4.21   Probability calculation

$$45^\% + 30^\% + 15^\% + 10^\% = 100^\%$$
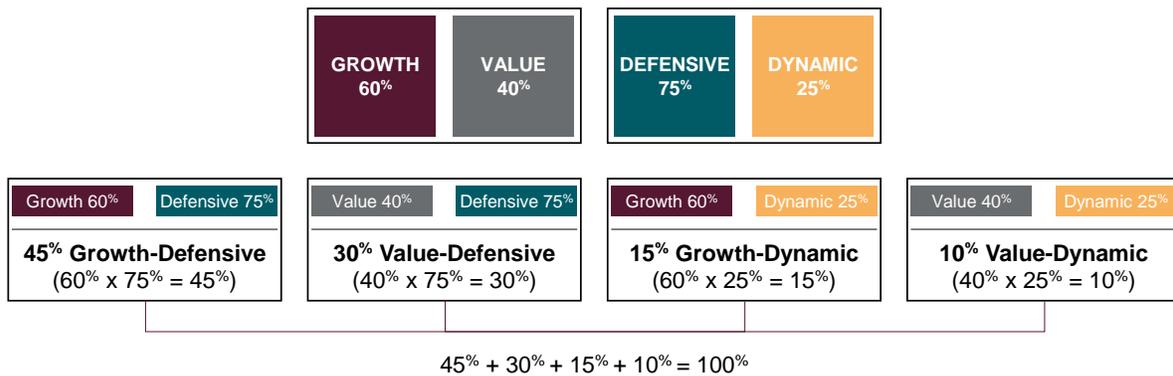
Hypothetical example for illustrative purposes only. Does not represent an actual stock.

4.21.1   Once combined, the security has a Growth-Defensive probability of 45% (675 shares), Value-Defensive probability of 30% (450 shares), Growth-Dynamic probability of 15% (225 shares), and Value-Dynamic probability of 10% (150 shares), which sum to 100% (45% + 30% + 15% + 10%) or 1500 shares (675 + 450 + 225 + 150). Note: While these percentages reflect the split of the security's shares among the four combined style indexes, the security's weight in each index, e.g. Russell 1000 Growth-Defensive Index, cannot be determined without the float-adjusted market cap of the remainder of the securities in the index.

Appendix A: Further Information

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

Glossary.pdf

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

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