FTSE Invesco Dynamic Multifactor Index Series

v2.2



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Introduction

1. Introduction

- 1.1 This document sets out the Ground Rules for the construction and management of the FTSE Invesco Dynamic Multifactor Index Series (index series). Copies of the Ground Rules are available from www.lseg.com/en/ftse-russell/.
- 1.2 The FTSE Invesco Dynamic Multifactor Index Series is designed to reflect the performance of a dynamic combination of multifactor indices (component indices), reflecting the result of the Invesco regime model, which rotates between multifactor component indices according to the Invesco Signal.
- 1.3 The FTSE Invesco Dynamic Multifactor Index Series takes account of ESG factors in its design.
- 1.4 These Ground Rules should be read in conjunction with the FTSE Global Equity Index Series Ground Rules, the FTSE Global Factor Index Series Ground Rules, the Corporate Actions and Events Guide for Non Market Cap Weighted Indices and the Russell US Equity Indices Construction and Methodology, which are available at www.lseg.com/en/ftse-russell/. Unless stated in these Ground Rules, the component indices will follow the same process as the FTSE Global Factor Index Series.
- 1.5 Price and total return indices will be calculated on an end-of-day basis.
 - Total return indices include income based on ex-dividend adjustments. All dividends are applied as declared in FTSE total return indices.

1.6 FTSE Russell

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

- 1.7 FTSE Russell hereby notifies users of the index series that it is possible that circumstances, including external events beyond the control of FTSE Russell, may necessitate changes to, or the cessation of, the index series and therefore, any financial contracts or other financial instruments that reference the index series or investment funds which use the index series to measure their performance should be able to withstand, or otherwise address the possibility of changes to, or cessation of, the index series.
- Index users who choose to follow this index series or to buy products that claim to follow this index series should assess the merits of the index series rules-based methodology and take independent investment advice before investing their own or client funds. No liability whether as a result of negligence or otherwise is accepted by FTSE Russell (or any person concerned with the preparation or publication of these Ground Rules) for any losses, damages, claims and expenses suffered by any person as a result of:
 - any reliance on these Ground Rules;
 - any inaccuracies in these Ground Rules;
 - any non-application or misapplication of the policies or procedures described in these Ground Rules;
 and/or
 - any inaccuracies in the compilation of the index series or any constituent data.

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Management responsibilities

Management responsibilities

2.1 FTSE International Limited (FTSE)

- 2.1.1 FTSE is the benchmark administrator of the index series¹.
- 2.1.2 FTSE is responsible for the daily calculation, production and operation of the component indices and the FTSE Invesco Dynamic Multifactor 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 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;
 - receive the Invesco Signal on a monthly basis and implement any required component index change;
 and
 - disseminate the indices.

2.2 Invesco

- 2.2.1 Invesco is responsible for operation of the Invesco Macro Regime Model² and transmitting the Invesco Signal to FTSE Russell no later than noon US Eastern Time, on the first business day of each month. Business days accounts for non-trading days for US equity markets, i.e. if the first business day of a month is a non-trading day for US equity markets, then the next trading day is counted as the first business day.
- 2.2.2 Any delay in the transmission of the Invesco Signal to FTSE will delay FTSE's implementation of the Invesco Signal by a similar length of time.
- 2.2.3 FTSE has the right to query the output of the Invesco Macro Regime Model on the business day of receipt of the Invesco Signal. Invesco will endeavor to respond to any FTSE query before the close of the same business day.
- 2.2.4 If FTSE and Invesco are unable to resolve a query submitted by FTSE at the close of the first business day of the review month, no review of the index will occur that month and the previous month's Invesco Signal will be used.

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¹ The term administrator is used in this document in the same sense as it is defined in Regulation (EU) 2016/1011 of the European Parliament and of the Council of 8 June 2016 on indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds (the European Benchmark Regulation) and The Benchmarks (Amendment and Transitional Provision) (EU Exit) Regulations 2019 (the UK Benchmark Regulation).

Section 5 provides an overview of the Invesco Macro Regime Model and a reference to a research paper giving a detailed description.

2.3 Amendments to these Ground Rules

- 2.3.1 These Ground Rules shall be subject to regular review (at least once a year) by FTSE Russell to ensure that they continue to best reflect the aims of the index series. Any proposals for significant amendments to these Ground Rules will be subject to consultation with FTSE Russell advisory committees and other stakeholders if appropriate. The feedback from these consultations will be considered by the FTSE Russell Index Governance Board before approval is granted.
- As provided for in the Statement of Principles for FTSE Russell Equity Indices, where FTSE Russell determines that the Ground Rules are silent or do not specifically and unambiguously apply to the subject matter of any decision, any decision shall be based as far as practical on the Statement of Principles. After making any such determination, FTSE Russell shall advise the market of its decision at the earliest opportunity. Any such treatment will not be considered as an exception or change to the Ground Rules, or to set a precedent for future action, but FTSE Russell will consider whether the Ground Rules should subsequently be updated to provide greater clarity.

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FTSE Russell Index policies

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 Corporate Actions and Events Guide

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

Corporate Actions and Events Guide for Non Market Cap Weighted Indices.pdf

3.3 Statement of Principles for FTSE Russell Equity Indices (the Statement of Principles)

Indices need to keep abreast of changing markets and the Ground Rules cannot anticipate every eventuality. Where the Ground Rules do not fully cover a specific event or development, FTSE Russell will determine the appropriate treatment by reference to the Statement of Principles, which summarises the ethos underlying FTSE Russell's approach to index construction. The Statement of Principles is reviewed annually and any changes proposed by FTSE Russell are presented to the FTSE Russell Policy Advisory Board for discussion before approval by the FTSE Russell Index Governance Board.

The Statement of Principles can be accessed using the following link:

Statement of Principles.pdf

3.4 Index Policy for Trading Halts and Market Closures

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

FTSE_Russell_Index_Policy_for_Trading_Halts_and_Market_Closures.pdf

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

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

Index_Policy_in_the_Event_Clients_are_Unable_to_Trade_a_Market_or_a_Security.pdf

3.6 Recalculation Policy and Guidelines

3.6.1 Where an inaccuracy is identified, FTSE Russell will follow the steps set out in the FTSE Russell Index Recalculation Guidelines when determining whether an index or index series should be recalculated and/or associated data products reissued. Users of the FTSE Invesco Dynamic Multifactor Index Series will be 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.

Recalculation_Policy_and_Guidelines_Equity_Indices.pdf

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3.7 FTSE Russell Policy for Benchmark Methodology Changes

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

FTSE_Russell_Policy_for_Benchmark_Methodology_Changes.pdf

3.8 FTSE Russell Governance Framework

3.8.1 To oversee its indices, FTSE Russell employs a governance framework that encompasses product, service and technology governance. The framework incorporates the London Stock Exchange Group's three lines of defence risk management framework and is designed to meet the requirements of the IOSCO Principles for Financial Benchmarks³, the European benchmark regulation⁴ and the UK benchmark regulation⁵. The FTSE Russell Governance Framework can be accessed using the following link:

FTSE Russell Governance Framework.pdf

3.9 Real Time Status Definitions

3.9.1 For indices that are calculated in real time, please refer to the following guide for details of real time status definitions:

Real_Time_Status_Definitions.pdf

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

⁴ Regulation (EU) 2016/1011 of the European Parliament and of the Council of 8 June 2016 on indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds.

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

Index series

4. Index series

4.1 FTSE Invesco Dynamic Multifactor Index Series

The FTSE Invesco Dynamic Multifactor Index Series consists of the following indices and underlying universes:

Underlying universe	Dynamic multifactor index
Russell 1000 Index	Russell 1000 Invesco Dynamic Multifactor Index
Russell 2000 Index	Russell 2000 Invesco Dynamic Multifactor Index
FTSE Developed ex US Index	FTSE Developed ex US Invesco Dynamic Multifactor Index
Russell 1000 Index	Russell 1000 Invesco ex Fossil Fuels ex Weapons ex Tobacco ex Controversies ESG Dynamic Multifactor Index
FTSE Emerging	FTSE Emerging Invesco Dynamic Multifactor Index
Russell 1000 Index	Russell 1000 Invesco ex Weapons ex Vice Products Dynamic Multifactor Index
FTSE Developed ex Korea ex Japan Index	FTSE Developed ex Korea ex Japan Invesco Dynamic Multifactor Index

4.2 Component indices

The FTSE Invesco Dynamic Multifactor Indices rotate between four component indices according to the Invesco Signal. These component indices are pre-determined and follow the FTSE Global Factor Index Series Ground Rules and FTSE Smart Sustainability Index Series Ground Rules, which can be accessed using the following links:

FTSE Global Factor Index Series ground rules.pdf

FTSE_Smart_Sustainability_Index_ground_rules.pdf

Each component index consists of the following factor tilts:

4.2.1 Russell 1000 Component Indices

Invesco signal	Component index	Factor tilt strength	Review frequency
Recovery	Russell 1000 2Size/2Val 5% Capped Factor Index	Size=2, Value=2	Annual
Expansion	Russell 1000 2Mom/Size/Val/5% Capped Factor Index	Size=1, Value=1, Momentum=2	Semi-annual
Slowdown	Russell 1000 2Qual/2Vol 5% Capped Factor Index	Volatility=2, Quality=2	Annual
Contraction	Russell 1000 2Mom/2Qual/2Vol 5% Capped Factor Index	Volatility=2, Momentum=2, Quality=2	Semi-annual

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4.2.2 Russell 2000 Component Indices

Invesco signal	Component index	Factor tilt strength	Review frequency
Recovery	Russell 2000 2Size/2Val 3% Capped Factor Index	Size=2, Value=2	Annual
Expansion	Russell 2000 2Mom/Size/Val 3% Capped Factor Index	Size=1, Value=1, Momentum=2	Semi-annual
Slowdown	Russell 2000 2Qual/2Vol 3% Capped Factor Index	Volatility=2, Quality=2	Annual
Contraction	Russell 2000 2Mom/2Qual/2Vol 3% Capped Factor Index	Volatility=2, Momentum=2, Quality=2	Semi-annual

4.2.3 FTSE Developed ex US Component Indices

Invesco signal	Component index	Factor tilt strength	Review frequency
Recovery	FTSE Developed ex US 2Size/2Val 5% Capped Factor Index	Size=2, Value=2	Annual
Expansion	FTSE Developed ex US 2Mom/Size/Val 5% Capped Factor Index	Size=1, Value=1, Momentum=2	Semi-annual
Slowdown	FTSE Developed ex US 2Qual/2Vol 5% Capped Factor Index	Volatility=2, Quality=2	Annual
Contraction	FTSE Developed ex US 2Mom/2Qual/2Vol 5% Capped Factor Index	Volatility=2, Momentum=2, Quality=2	Semi-annual

4.2.4 Russell 1000 ex Fossil Fuels ex Weapons ex Tobacco ex Controversies ESG Component Indices

Invesco signal	Component index	Factor tilt strength	Review frequency
Recovery	Russell 1000 ex Fossil Fuels ex Weapons ex Tobacco ex Controversies ESG 2Size/2Val 5% Capped Factor Index	Size=2, Value=2	Annual
Expansion	Russell 1000 ex Fossil Fuels ex Weapons ex Tobacco ex Controversies ESG 2Mom/Size/Val/5% Capped Factor Index	Size=1, Value=1, Momentum=2	Semi-annual
Slowdown	Russell 1000 ex Fossil Fuels ex Weapons ex Tobacco ex Controversies ESG 2Qual/2Vol 5% Capped Factor Index	Volatility=2, Quality=2	Annual
Contraction	Russell 1000 ex Fossil Fuels ex Weapons ex Tobacco ex Controversies ESG 2Mom/2Qual/2Vol 5% Capped Factor Index	Volatility=2, Momentum=2, Quality=2	Semi-annual

4.2.5 FTSE Emerging Component Indices

Invesco signal	Component index	Factor tilt strength	Review frequency
Recovery	FTSE Emerging Size/2Val/0.5Qual/0.5Mom/0.5Vol 7.5% Capped Factor Index	Size=1, Value=2, Momentum=0.5, Quality=0.5, Volatility=0.5	Semi-annual
Expansion	FTSE Emerging 2Mom/0.5Size/Val/0.5Qual/0.5Vol 7.5% Capped Factor Index	Size=0.5, Value=1, Momentum=2, Quality=0.5, Volatility=0.5	Semi-annual
Slowdown	FTSE Emerging 1.5Qual/1.5Vol/0.5Val/0.5Mom/0.5Size 7.5% Capped Factor Index	Volatility=1.5, Quality=1.5, Size=0.5, Value=0.5, Momentum=0.5	Semi-annual
Contraction	FTSE Emerging Mom/2Qual/2Vol 7.5% Capped Factor Index	Volatility=2, Momentum=1, Quality=2	Semi-annual

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4.2.6 Russell 1000 Invesco ex Weapons ex Vice Products Dynamic Multifactor Index Component Indices

Invesco signal	Component index	Factor tilt strength	Review frequency
Recovery	Russell 1000 ex Weapons ex Vice Products 2Size/2Val 5% Capped Factor Index	Size=2, Value=2	Annual
Expansion	Russell 1000 ex Weapons ex Vice Products 2Mom/Size/Val/ 5% Capped Factor Index	Size=1, Value=1, Momentum=2	Semi-annual
Slowdown	Russell 1000 ex Weapons ex Vice Products 2Qual/2Vol 5% Capped Factor Index	Volatility=2, Quality=2	Annual
Contraction	Russell 1000 ex Weapons ex Vice Products 2Mom/2Qual/2Vol 5% Capped Factor Index	Volatility=2, Momentum=2, Quality=2	Semi-annual

4.2.7 FTSE Developed ex Japan ex Korea Component Indices

Invesco signal	Component index	Factor tilt strength	Review frequency
Recovery	FTSE Developed ex Korea ex Japan 2Size/2Val 5% Capped Factor Index	Size=2, Value=2	Annual
Expansion	FTSE Developed ex Korea ex Japan 2Mom/Size/Val 5% Capped Factor Index	Size=1, Value=1, Momentum=2	Semi-annual
Slowdown	FTSE Developed ex Korea ex Japan 2Qual/2Vol 5% Capped Factor Index	Volatility=2, Quality=2	Annual
Contraction	FTSE Developed ex Korea ex Japan 2Mom/2Qual/2Vol 5% Capped Factor Index	Volatility=2, Momentum=2, Quality=2	Semi-annual

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Index construction

Index construction

- 5.1.1 Each FTSE Invesco Dynamic Multifactor index listed in rule 4.1 will consist of the relevant component index for the current regime as determined by the Invesco Macro Regime Model. The Invesco Macro Regime Model uses publicly available data, as described in rules 5.1.2 to 5.1.3.
- 5.1.2 At the end of each month, Invesco will identify the current regime and provide this information in the form of the Invesco Signal to FTSE Russell. FTSE Russell will ensure that each FTSE Invesco Dynamic Multifactor Index incorporates the appropriate component index for the current regime.
- 5.1.3 Invesco Signal

The Invesco Signal identifies one of four regimes based on leading indicators of economic growth and market sentiment. The four regimes are defined as follows:

- 1. Recovery: when growth is below trend and accelerating.
- 2. Expansion: when growth is above trend and accelerating.
- 3. Slowdown: when growth is above trend and decelerating.
- 4. Contraction: when growth is below trend and decelerating.
- 5.1.4 Invesco calculates the Invesco Signal using a set of publicly available economic and financial variables, deemed to be leading indicators of the business cycle from the following categories:
 - Manufacturing business surveys
 - Consumer sentiment surveys
 - Manufacturing activity and labor market conditions
 - Housing and construction
 - Monetary conditions
 - Market sentiment: measured through a set of country level total return indices for equity and fixed income
 markets across developed and emerging countries.

The algorithm specifying how the economic regimes are determined can be found in the paper below:

Polk, C., Haghbin, M. and de Longis, A., Journal F Investment Management, Volume 18, No.1, 2020 https://www.joim.com/time-series-variation-in-factor-premia-the-influence-of-the-business-cycle/

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Periodic review of indices

Periodic review of indices

- 6.1.1 The component index to be used in each of the FTSE Invesco Dynamic Multifactor Indices is determined monthly based on the Invesco Signal.
- 6.1.2 The review will be effective after the close of the fourth business day of the month and will account for any non-trading days for US equity markets, plus where the receipt of the Invesco Signal is delayed, in which case a corresponding delay will apply to the implementation of the Signal (see rules 2.2.1 and 2.2.2).
- 6.1.3 The Invesco Signal will be announced at the open of the first business day of the review month. Any index change as a result of the monthly signal will be published at the close of the first business day of the month (see rules 2.2.1 and 2.2.2).
- 6.1.4 For more detail on the construction and maintenance of the component indices, please refer to the FTSE Global Factor Index Series Ground Rules and FTSE Smart Sustainability Index Series Ground Rules, which can be accessed using the following links:

FTSE Global Factor Index Series ground rules.pdf

FTSE Smart Sustainability Index ground rules.pdf

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Changes to constituent companies

7. Changes to constituent companies

7.1 For further information on changes to the constituent companies of the component indices, please refer to the FTSE Global Factor Index Series Ground Rules and FTSE Smart Sustainability Index Series Ground Rules, which can be accessed using the following links:

FTSE Global Factor Index Series ground rules.pdf

FTSE_Smart_Sustainability_Index_ground_rules.pdf

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Corporate actions and events

8. Corporate actions and events

- 8.1 If a constituent in the underlying index has a stock split, stock consolidation, rights issue, bonus issue, a change in the number of shares in issue or a change in free float (with the exception of tender offers), the constituent's weighting in the FTSE Invesco Dynamic Multifactor Index will remain unchanged pre and post such an event.
- 8.2 Full details of changes to constituent companies due to corporate actions and events can be accessed in the Corporate Actions and Events Guide for Non Market Capitalisation Weighted Indices using the following link:

Corporate_Actions_and_Events_Guide_for_Non_Market_Cap_Weighted_Indices.pdf

A corporate action is an action on shareholders with a prescribed ex-date. The share price will be subject to an adjustment on the ex-date. The index will be adjusted in line with the ex-date.

These include the following:

- capital repayments;
- sights issues/entitlement offers;
- stock conversion;
- splits (sub-division)/reverse splits (consolidation); and
- scrip issues (capitalisation or bonus Issue).

A corporate event is a reaction to company news (event) that may impact the index depending on the index rules. For example, a company announces a strategic shareholder is offering to sell their shares (secondary share offer) – this could result in a free float weighting change in the index. Where an index adjustment is required, FTSE Russell will provide notice advising of the timing of the change.

8.3 Suspension of dealing

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

8.4 Takeovers, mergers and demergers

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

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Indices algorithm and calculation method

9. Indices algorithm and calculation method

9.1 Prices

9.1.1 The FTSE Invesco Dynamic Multifactor Index Series use actual closing mid-market or last trade prices, where available, for securities with local market quotations. Further details can be accessed using the following link:

Closing_Prices_Used_For_Index_Calculation.pdf

9.2 Calculation frequency

9.2.1 The FTSE Invesco Dynamic Multifactor Index Series will be calculated on an end-of-day basis and displayed to eight decimal points.

9.3 Index calculation

9.3.1 The FTSE Invesco Dynamic Multifactor Indices are calculated using the algorithm described below:

$$\sum_{i=1}^{N} \frac{\left(p_{i} \times e_{i} \times s_{i} \times f_{i} \times c_{i}\right)}{d}$$

Where:

- -i=1,2,...,N
- N is the number of securities in the index.
- p_i is the latest trade price of the component security (or the price at the close of the index on the previous day).
- e_i is the exchange rate required to convert the security's currency into the index's base currency.
- s_i is the number of shares in issue used by FTSE Russell for the security, as defined in these Ground Rules.
- f_i is the investability weighting factor to be applied to a security to allow amendments to its weighting, expressed as a number between 0 and 1, where 1 represents a 100% free float. This factor is published by FTSE Russell for each security in the underlying index.
- c_i is the weight adjustment factor to be applied to a security to correctly weight that security in the index.
 This factor maps the investable market capitalisation of each stock to a notional market capitalisation for inclusion in the index.
- d is the divisor, a figure that represents the total issued share capital of the index at the base date. The
 divisor can be adjusted to allow changes in the issued share capital of individual securities to be made
 without distorting the index.

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Appendix A

Index opening and closing hours

Index	Open	Close
Monday to Friday		
Russell 1000 Invesco Dynamic Multifactor Index	14:30	21:10
Russell 2000 Invesco Dynamic Multifactor Index	14:30	21:10

Notes:

- 1. Timings are UK hours.
- 2. Refinitiv real-time exchange rates are used in the real-time index calculations.
- 3. Exchange rates used in the end-of-day calculations are WM/Refinitiv Closing Spot Rates™, collected at 16:00 UK time.

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Appendix B

Status of index

The FTSE Invesco Dynamic Multifactor Index Series may be calculated in real time.

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

Real_Time_Status_Definitions.pdf

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

The FTSE Invesco Dynamic Multifactor Index Series is calculated on public holidays whenever at least one market is trading. The index series will not be calculated on 1 January.

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Appendix C

Further information

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

Glossary.pdf

Further information on the FTSE Invesco Dynamic Multifactor Index Series is available from FTSE Russell.

For contact details, please visit the FTSE Russell website or contact FTSE Russell client services at info@ftserussell.com.

Website: www.lseg.com/en/ftse-russell/

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