

Product Profile | Equities

## Russell 2000<sup>®</sup> Index: The original benchmark for US small caps

August 2024



AUTHOR

Catherine Yoshimoto, Director, Product Management catherine.yoshimoto@lseg.com

### Overview

Recent news coverage of the US equity market has focused on the remarkable performance of a handful of mega-cap stocks. But could companies at the other end of the size spectrum be poised to make a comeback?

Specialist stock market indexes will play a vital role in helping us answer this question. In this paper we profile the original, dedicated benchmark for US small caps—the Russell 2000<sup>®</sup> Index.

Since its launch in 1984, the Russell 2000 has provided a consistent and comprehensive view of the performance of the small company segment.

In the following sections, we review the long-term investment case for small companies and cite empirical evidence for a return premium from this category of stock. We examine more recent trends in relative large-cap/small-cap performance, using the well-known Russell 1000 and 2000 indexes to represent these two categories of US stocks.

We show how the Russell 2000 fits seamlessly into the broader Russell US index family and how it takes an objective, transparent and predictable approach to classifying small companies.

The Russell 2000 has long been the default measure of small-cap performance for US equity market analysts and commentators. Read on to obtain a full picture of how it is designed, built, supervised and maintained.

### Contents

Large caps generate headlines	4
but small caps have won the long-distance race	4
Cyclicality in small-cap returns	5
A complete view of the US equity market	7
How the Russell 2000 is built	7
Ongoing maintenance ensures accurate representation	11
How American is the Russell 2000?	13
Broad and liquid: the Russell 2000 ecosystem	14
Why Russell for US small caps?	15

### Large caps generate headlines...

The 'magnificent seven' of US tech stocks—Alphabet, Amazon, Apple, Meta Platforms, Microsoft, NVIDIA and Tesla—have dominated the recent financial news headlines.

These companies' shares have performed so well in the last few years that, by the end of June 2024, the magnificent seven made up nearly 30% by weight of the capitalization-weighted Russell 1000 index (which includes around 1000 stocks).

However, periods of market dominance by select US large-cap stocks are not new. Between 1969 and 1972 another group of large companies—which contemporary journalists labelled the 'nifty fifty'— outperformed the broader stock market by double-digit percentages a year.

These companies, which included well-known businesses like Xerox, IBM, Polaroid and Coca-Cola, ended up trading on price-to-earnings (P/E) ratios two or three times the market average. This trend was erased in the 1973/74 bear market, when the nifty fifty severely underperformed.

In summary, large-cap stocks generate lots of news stories. But focusing on them alone could cause us to miss the bigger picture. And the historical record tells us that the broader cohort of small companies has tended to do better than large caps over time.

### ...but small caps have won the longdistance race

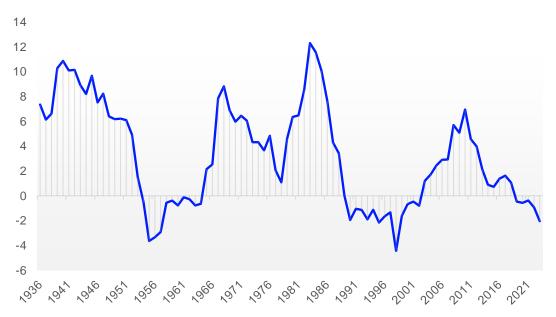
In a famous paper called "Common risk factors in the returns on stocks and bonds", published in 1992, Kenneth French and Eugene Fama provided empirical evidence for the existence of the 'size factor'—a persistent and positive return premium earned by small-cap US stocks over their large-cap equivalents.

Historic US stock market performance data collected by French<sup>1</sup> show that small US companies outperformed their larger counterparts by 2.85 percent a year, on average, between 1927 and 2023.

According to French's data, the rolling ten-year performance of 'small minus big' (SMB—the return spread between small- and large-cap US stocks), also known as the size factor, has been positive for around two-thirds of the time since 1927 (see Figure 1).

Periods of outperformance by large caps do occur, however. According to French, the ten-year rolling performance of SMB was negative between 1954-1964, 1990-2002 and, most recently, since 2019. However, small caps have tended to offer a return premium for the rest of the time.

<sup>&</sup>lt;sup>1</sup> Kenneth R. French - Data Library (dartmouth.edu)



### Figure 1: Rolling ten-year performance for US size factor (%)

Source: Kenneth R. French Data Library. Annual returns from 1927 to 2023. Past performance is not a reliable guide to future returns.

Researchers have offered different justifications for the existence of the small-cap premium.

Some say that small companies are typically younger, less well-researched and riskier, meriting higher returns for those willing to hold them. Others suggest that the small-cap premium is partly compensation for the higher liquidity risk of smaller companies' shares. The small cap return premium could also reflect smaller companies' higher prospective growth rates.

### Cyclicality in small-cap returns

Over the last four and a half decades, the evidence for the small-cap return premium has been more ambiguous. During this period, there have been four clear cycles in US large-cap and small-cap performance, but without a clear overall trend.

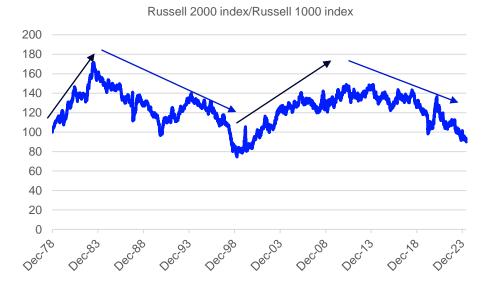
This can be seen in a chart showing the ratio of returns between the Russell 2000 index (FTSE Russell's flagship index of US small caps) and the Russell 1000 index (our US large-cap index)—see Figure 2.

(The Russell US indexes were launched in January 1984, with an index history extending back to the end of 1978. In 2024, FTSE Russell issued a special commemorative paper to mark the indexes' 40th anniversary<sup>2</sup>.)

US small caps outperformed large caps between 1978 and 1982 and between 1998 and 2010 (these periods are marked by black arrows in the chart). Small caps underperformed large caps between 1982 and 1998 and from 2010 to date (these periods are marked by blue arrows in the chart).

<sup>&</sup>lt;sup>2</sup> See How we built a better US equity benchmark - 40 years of the Russell US Indexes | LSEG

#### Product Profile | Equities



#### Figure 2: Relative performance—Russell 2000 vs Russell 1000

Source: FTSE Russell, ratio of the performance between the Russell 2000 and the Russell 1000 index. Daily index data from 29/12/1978-07/06/2024. 29/12/78=100. Past performance is not a reliable guide to future returns.

In Figure 3, we show the annualised returns and standard deviations of return of the Russell 1000 and Russell 2000 indexes over the same time period. We include the total return versions of each index for comparison.

Index	Return p.a.	Standard Deviation of daily returns (annualised)
Russell 1000 price index	9.26%	17.54%
Russell 1000 total return index	12.13%	17.54%
Russell 2000 price index	9.01%	20.01%
Russell 2000 total return index	10.87%	20.01%

Source: FTSE Russell, daily index data from 29/12/1978-07/06/2024. Past performance is not a reliable guide to future returns.

A few things stand out from Figure 3:

- The price index returns of the Russell 1000 (large-cap) and Russell 2000 (small-cap) indexes between December 1978 and June 2024 were broadly similar, with only a 25 basis point difference in annual returns
- The annualised total return of the Russell 1000 was 1.26% higher than the total return of the Russell 2000, reflecting higher dividend yields on large-cap stocks over the period (total return indexes assume the full reinvestment of constituents' dividend payments in the index)
- The annualised standard deviation of daily returns on the Russell 2000 was 2.47% higher than the standard deviation of the Russell 1000, supporting the theory that smaller stocks are somewhat riskier than large caps

# A complete view of the US equity market

The Russell US indexes offer a complete view of the US equity opportunity set, ranging from mega-cap to micro-cap stocks.

They are the leading US benchmarks for institutional investors, with approximately \$10.6tm benchmarked to the Russell indexes<sup>3</sup>.

The Russell US indexes follow a modular construction approach, covering market segments (large, mid and small cap) and investment styles (growth vs. value and defensive vs. dynamic).

In each case, the constituent indexes sum up to the Russell 3000 index, a broad index of the top 3,000 US stocks by market capitalization. The Russell 3000 covers around 98% of the US equity investable universe.

### Figure 4: Modular index construction

### 1,000 + 2,000 = 3,000

### It's really that simple

**The Russell 1000<sup>®</sup> Index**—The largest 1,000 stocks by market cap, the index comprehensively covers the large cap opportunity set.

**The Russell 2000<sup>®</sup> Index**—The next 2,000 largest stocks by market cap, the index comprehensively covers the small cap opportunity set.

**The Russell 3000<sup>®</sup> Index**—This broad cap index of the top 3,000 US stocks by market cap was designed to cover approximately 98% of the US equity investable universe.

Source: FTSE Russell. For illustrative purposes only.

### How the Russell 2000 is built

The starting universe for the Russell US indexes consists of companies classified as having US nationality and which trade on a major US stock exchange each year on 'rank day' (the last business day in April). There are certain categories of stock that are excluded from consideration (see Figure 5).

<sup>&</sup>lt;sup>3</sup> Data as of December 31, 2023 as reported on April 1, 2024 by eVestment for active institutional funds, Morningstar for active retail mutual funds, insurance products, and ETFs, and passive assets directly collected by FTSE Russell. AUM includes blended benchmarks and excludes futures and options. AUM data does not include active and passive assets not reported to a 3rd party source or FTSE Russell. For funds where the AUM was not reported as of December 31, 2023, the previous period AUM was used as an estimate. No assurances are given by FTSE Russell as to the accuracy of the data.

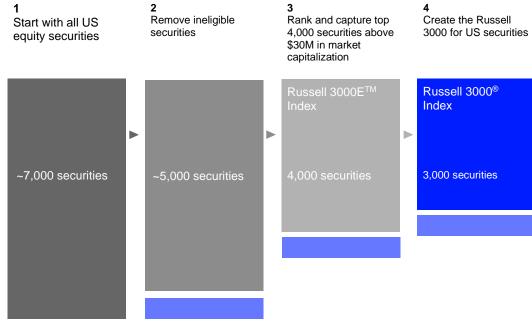
Inclusions	<ul> <li>Companies classified as US</li> <li>Must trade on major US exchange on rank day</li> </ul>
Exclusions	<ul> <li>Pink sheet, OTC and bulletin board stocks</li> </ul>
	<ul> <li>Closed-end mutual funds, limited partnerships, royalty trusts</li> </ul>
	<ul> <li>Blank check/SPAC companies, BDCs</li> </ul>
	<ul> <li>Foreign Stocks and American Depositary Receipts (ADRs)</li> </ul>
	<ul> <li>Companies under \$30Million in total market capitalization</li> </ul>
	<ul> <li>Companies historically passing UBTI to shareholders*</li> </ul>
	<ul> <li>Stocks trading below \$1.00 (average used of the past 30 days for existing members)</li> </ul>
	<ul> <li>Stocks with less than 5% float adjusted market cap</li> </ul>
	<ul> <li>Companies with less than 5% voting rights</li> </ul>
Maintenance	<ul> <li>Stocks removed between reconstitution dates are NOT replaced</li> <li>Spin-offs and Initial Public Offerings are the only additions between reconstitution dates</li> </ul>

### Figure 5: The Russell US index universe

Source: FTSE Russell. A complete set of rules can be found on our website.

On each annual rank day, we rank and capture the top 4,000 securities above \$30m in market capitalization to form the Russell 3000E index. (see Figure 6—if there are fewer than 4,000 eligible companies, the Russell 3000E index will contain fewer than 4,000 stocks—see Figure 7). The largest 3,000 stocks in the Russell 3000E index then become the Russell 3000 index.

### Figure 6: Creating the Russell 3000



Source: FTSE Russell

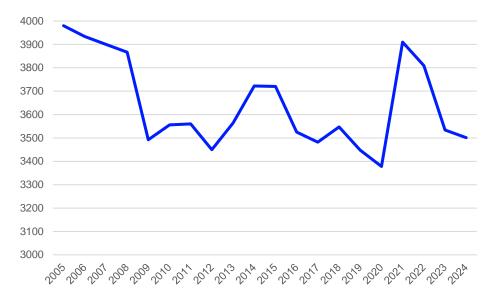


Figure 7: Number of stocks in the Russell 3000E

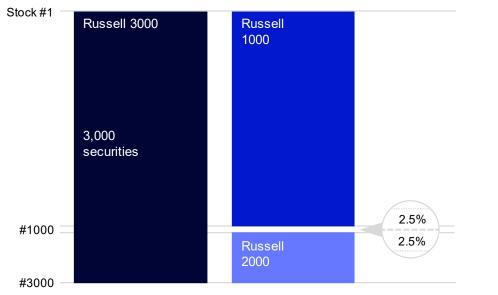
Source: FTSE Russell. Rank days from 2005-2024, inclusive.

Next, we segment the Russell 3000 index into the Russell 1000 index (representing large-cap US stocks) and the Russell 2000 index (representing small-cap US stocks—see Figure 8).

For existing index members, a 5% band (based on total market cap percentiles) is placed around the breakpoint between large- and small-cap companies, helping eliminate unnecessary index turnover.<sup>4</sup>

In other words, a Russell 1000 index member that has fallen down the capitalization rankings won't be relegated to the Russell 2000 until it has moved 2.5% below the breakpoint. And a Russell 2000 index member that has moved up the capitalization rankings won't be promoted to the Russell 1000 until it has moved 2.5% above the breakpoint.

<sup>&</sup>lt;sup>4</sup> See section 6.10 of the ground rules at <a href="https://www.lseg.com/content/dam/ftse-russell/en\_us/documents/ground-rules/russell-us-indexes-construction-and-methodology.pdf">https://www.lseg.com/content/dam/ftse-russell/en\_us/documents/ground-rules/russell-us-indexes-construction-and-methodology.pdf</a>



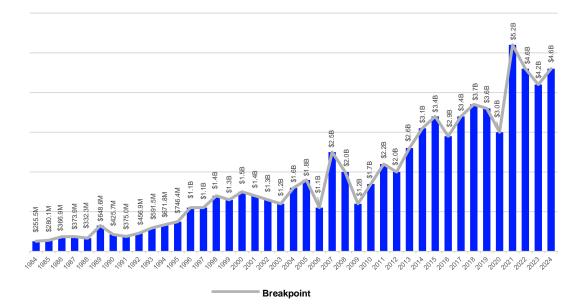
### Figure 8: Segmenting the Russell 3000 into the Russell 1000 and Russell 2000

Taken together, these construction rules ensure that the Russell 2000 index serves its purpose as a comprehensive, transparent and objective measure of the performance of US small-cap stocks.

Since the Russell US indexes' creation in 1984, the breakpoint between the Russell 1000 and Russell 2000 has varied dynamically to reflect the shifting valuations of US stocks (see Figure 9).

At \$5.2 billion, the 2021 breakpoint was over four times higher than in June 2009, in the immediate aftermath of the global financial crisis. It was over 20 times higher than in 1984, when the Russell Indexes were launched.

Source: FTSE Russell



### Figure 9: Historical breakpoint between large-cap (Russell 1000) and small-cap (Russell 2000) indexes

Source: FTSE Russell. As of "rank day" each year.

This design feature means that a stock can move seamlessly between the small-cap Russell 2000 and the large-cap Russell 1000 indexes without reliance on a fixed market capitalization target.

By contrast, some other US small-cap indexes rely on fixed market capitalization ranges to determine index eligibility. This approach fails to account for market movements and can generate significant turnover at index reviews.

## Ongoing maintenance ensures accurate representation

Markets evolve continuously as new stocks are listed and others disappear as a result of delistings, mergers and acquisitions.

To ensure that the Russell US indexes continue to represent the US equity opportunity set accurately, we update them daily for corporate actions, such as dividends, delistings, mergers and acquisitions, spin-offs and stock splits. We adjust the indexes quarterly for adjustments in share counts and initial public offerings (IPOs—see Figure 10).

And each June, we undertake a full reconstitution of the indexes by ranking stocks and resetting the index membership lists.

### Figure 10: Russell US index maintenance

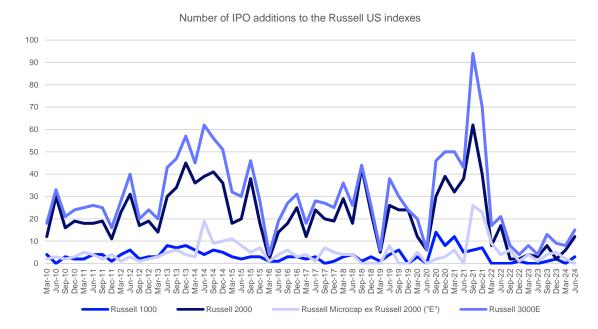
Russell US Indexes are regularly and proactively maintained to accurately reflect the true US opportunity set.





Source: FTSE Russell

Since 2010, the number of IPO additions to the Russell 2000 index has averaged around 20-30 a quarter (see Figure 11).



#### Figure 11: Russell US index IPO additions

Source: FTSE Russell. Number of IPO additions represent the reconstitution IPO additions as of rank day, April 30, 2024, effective after market close on June 28, 2024.

Over time, some of the best-known US stocks (such as Nvidia, Netflix and Amazon.com) first joined the Russell 2000 through the regular IPO addition or annual reconstitution process, before later moving up to the large-cap Russell 1000 index as a result of share price appreciation.

In many cases, stocks that joined the Russell US index series in this way enjoyed substantial share price appreciation before later being added to the S&P 500 index (see Figure 12).

#### FTSE Russell

Company	IPO month	Added to Russell 3000 (A)	Added to S&P 500 (B)	Time Period from A & B	% Cumulative Total Return of the Stok from A to B	Russell 2000 Return from A to B
Tiffany & Co.	May 1978	Dec 1978 (R2) – Feb 1979 (removed from R2) Dec 1987, Jun 1993 (R2); Nov 1988, Jun 1996 (R1)	June 2000	21 Years, 6 Months	1,661%	104.0%
Gap	May 1976	Dec 1978 (R2); Sep 1985 (R1)	Aug 1986	7 Years, 8 Months	3,800%	254.9%
Best Buy	April 1985	Sep 1985 (R2); Jun 1998 (R1)	June 1999	13 Years, 9 Months	13,987%	78.4%
Costco	Dec 1985	March 1986 (R2); Jun 1988 (R1)	Oct 1993	7 Years, 7 Months	1.7%	76.8%
Harley- Davidson	July 1986	Dec 1986 (R2); Jun 1990 (R1)	Jan 2000	13 Years, 1 Month	10,963%	94.8%
Adobe	Aug 1986	Dec 1986 (R2): Dec 1987 (R1)	May 1997	10 Years, 5 Months	1,389%	44.7%
Electronic Arts	March 1990	Jun 1990 (R2); Jun 2020 (R1)	July 2002	12 Years, 1 Month	2,774%	59.2%
Intuit	March 1993	Jun 1994 (R2); Jun 1995 (R1)	Dec 2000	6 Years, 6 Months	612%	92.0%
FactSet	June 1996	June 1997 (R2); Jun 2006 (R1)	Dec 2021	24 Years, 6 Months	10,961%	680.7%
Amazon.com	May 1997	Jun 1997 (R2); Jun 1998 (R1)	Nov 2005	8 Years, 4 Months	3,043%	89.8%
Nvidia	Jan 1999	Jun 1999 (R2); Jun 2000 (R1)	Nov 2001	2 Years, 5 Months	1,043%	3.9%
Netflix	May 2002	Jun 2002 (R2); Jun 2009 (R1)	Dec 2010	8 Years, 6 Months	2,412%	89.2%
Dominos	July 2004	Sept 2004 (R2); Jun 2013 (R1)	May 2020	15 Years, 8 Months	5,299%	200.8%
Super Micro Computer	March 2007	Jun 2007 (R2); Jun 2024 (R1)	March 2024	16 Years, 8 Months	9,990%	220.9%
Etsy	April 2015	Jun 2015 (R2); Jun 2019 (R1)	Sept 2020	5 Years, 3 Months	766%	29.4%

### Figure 12: Timing of Russell 1000, 2000 and S&P 500 index additions

Source: FTSE Russell, data as of March 28, 2024. Addition dates noted are to the Russell 1000 (R1) or to the Russell 2000 (R2). The inception date of the Russell 3000 Index, Russell 2000 Index and Russell 1000 Index is January 1, 1984. All performance presented prior to the index inception date is back-tested performance. Past performance is no guarantee of future returns. See the end for important disclosures.

### How American is the Russell 2000?

The Russell 2000 provides more concentrated exposure to the domestic US economy than its large-cap counterpart, the Russell 1000.

FTSE Russell recently calculated that the largest 1000 US companies generate nearly 40 percent of their revenues outside the country. The non-US revenue share for the 2000 companies in the Russell 2000 is only half that (just under 20 percent).

#### Figure 13: Non-US revenue for the Russell 1000 and 2000 indexes

	Russell 1000	Russell 2000
Non-US Revenue (%)	39.91	19.87

Source: FTSE Russell, as of June 28, 2024.

In other words, it's the Russell 2000 that better represents the domestic US economy and its powerhouse small company segment.

It also means that the aggregate performance of Russell 2000 companies is more sensitive to the US economy and to domestic macroeconomic indicators like inflation, employment and interest rates.

# Broad and liquid: the Russell 2000 ecosystem

The Russell 2000 index supports a vibrant ecosystem of small-cap investment products and derivatives, as well as occupying an important role in the securities finance market.

As at end-2023, just under \$1.7trn of the \$2.1trn invested in US small cap products used the Russell 2000 and its offshoots (such as Russell 2000 style and sector indexes) as their benchmarks (see Figure 14).

Currently, the largest ETF tracking the US small-cap sector is the iShares Russell 2000 ETF (IWM), with over \$65bn in assets under management at the end of March 2024. During 2023 this ETF saw average daily volume traded of \$5.76bn (see Figure 15). Over the same period, Russell 2000 index futures and options saw total notional value traded of \$351bn and \$82bn, respectively.

### Figure 14: US small-cap indexes, related funds and assets under management (AUM)

Index provider	Number of small-cap funds	Total small-cap AUM (\$bn)	% of AUM
CRSP	13	219	10.5%
MSCI	2	2	0.1%
FTSE Russell	1,484	1,684	81.1%
SPDJI	106	172	8.3%
SSGA	1	0.2	0.0%
Grand total	1,606	2,077	100%

Source: FTSE Russell. Data as of December 31, 2023, as reported on April 1, 2024 by eVestment for active institutional funds, Morningstar for active retail mutual funds, insurance products, and ETFs, and passive assets directly collected by FTSE Russell. AUM includes blended benchmarks and excludes futures and options. AUM data does not include active and passive assets not reported to a 3rd party source or FTSE Russell. For funds where the AUM was not reported as of December 31, 2023, the previous period AUM was used as an estimate. No assurances are given by FTSE Russell as to the accuracy of the data.

	ETF average daily value traded (\$m)		value traded	Options total volume (contracts)	value traded
Russell 2000 index	5,758	76,936,911	351	17,845,058	82

#### Figure 15: Liquidity in Russell 2000 index ETFs, futures and options

Sources: Refinitiv, CME Group, CBOE, data for calendar year 2023. ETF average daily value traded is for the iShares Russell 2000 ETF (IWM).

The liquidity surrounding the Russell 2000 index means that traders and hedgers are active users of the ETFs and derivatives that reference the benchmark. ETFs tracking the Russell 2000 index are also among the most popular in the securities finance market. For example, in 2022 the iShares Russell 2000 ETF (IWM) generated the second-highest lending revenues of all US equity ETFs.

### Why Russell for US small caps?

Over the four decades since its launch in 1984, the Russell 2000 index has become the preferred US small-cap benchmark for many investors, market analysts and commentators.

Together with the other indexes within the Russell US index range, the Russell 2000 has succeeded because it is:

- Transparent— it is constructed using an open, published, rules-based methodology that's designed to be easy to understand for any market participant;
- Representative—it is modular in design and constructed to be objective and comprehensive, with full coverage of the underlying market segment;
- Pioneering—Russell US indexes were the first (in 1984) to adjust index constituent weights for freely floating shares and the Russell US style indexes, launched in 1987, were also the first of their kind;
- Accurate—Russell US indexes are rigorously maintained via daily corporate actions, quarterly share adjustments and IPO inclusions and annual total reconstitution;
- Accessible—Russell US index data products are available through more than 80 leading analytic platforms.

By staying true to these attributes, the Russell 2000 has consistently captured the investable opportunity set of innovative US smaller companies. In doing so, the Russell 2000 has helped index users to measure the small-cap premium and to gain early exposure to many future equity market winners.

#### **ABOUT FTSE RUSSELL**

FTSE Russell is a leading global provider of index and benchmark solutions, spanning diverse asset classes and investment objectives. As a trusted investment partner we help investors make better-informed investment decisions, manage risk, and seize opportunities.

Market participants look to us for our expertise in developing and managing global index solutions across asset classes. Asset owners, asset managers, ETF providers and investment banks choose FTSE Russell solutions to benchmark their investment performance and create investment funds, ETFs, structured products, and index-based derivatives. Our clients use our solutions for asset allocation, investment strategy analysis and risk management, and value us for our robust governance process and operational integrity.

For over 35 years we have been at the forefront of driving change for the investor, always innovating to shape the next generation of benchmarks and investment solutions that open up new opportunities for the global investment community.

#### **CONTACT US**

To learn more, visit lseg.com/ftse-russell; email info@ftserussell.com; or call your regional Client Service team office:

EMEA +44 (0) 20 7866 1810 North America +1 877 503 6437 Asia-Pacific Hong Kong +852 2164 3333 Tokyo +81 3 6441 1430 Sydney +61 (0) 2 7228 5659

#### **Disclaimer**

© [2024] London Stock Exchange Group plc and its applicable group undertakings ("LSEG"). LSEG includes (1) FTSE International Limited ("FTSE"), (2) Frank Russell Company ("Russell"), (3) FTSE Global Debt Capital Markets Inc. and FTSE Global Debt Capital Markets Limited (together, "FTSE Canada"), (4) FTSE Fixed Income Europe Limited ("FTSE FI Europe"), (5) FTSE Fixed Income LLC ("FTSE FI"), (6) FTSE (Beijing) Consulting Limited ("WOFE") (7) Refinitiv Benchmark Services (UK) Limited ("RBSL"), (8) Refinitiv Limited ("RL") and (9) Beyond Ratings S.A.S. ("BR"). All rights reserved.

FTSE Russell<sup>®</sup> is a trading name of FTSE, Russell, FTSE Canada, FTSE FI, FTSE FI Europe, WOFE, RBSL, RL, and BR. "FTSE<sup>®</sup>, "Russell<sup>®</sup>, "FTSE Russell<sup>®</sup>, "FTSE4Good<sup>®</sup>, "ICB<sup>®</sup>, "Refinitiv", "Beyond Ratings<sup>®</sup>, "WMR™, "FR™" and all other trademarks and service marks used herein (whether registered or unregistered) are trademarks and/or service marks owned or licensed by the applicable member of LSEG or their respective licensors and are owned, or used under licence, by FTSE, Russell, FTSE Canada, FTSE FI, FTSE FI Europe, WOFE, RBSL, RL or BR. FTSE International Limited is authorised and regulated by the Financial Conduct Authority as a benchmark administrator. Refinitiv Benchmark Services (UK) Limited is authorised and regulated by the Financial Conduct Authority as a benchmark administrator.

All information is provided for information purposes only. All information and data contained in this publication is obtained by LSEG, from sources believed by it to be accurate and reliable. Because of the possibility of human and mechanical inaccuracy as well as other factors, however, such information and data is provided "as is" without warranty of any kind. No member of LSEG nor their respective directors, officers, employees, partners or licensors make any claim, prediction, warranty or representation whatsoever, expressly or impliedly, either as to the accuracy, timeliness, completeness, merchantability of any information or LSEG Products, or of results to be obtained from the use of LSEG products, including but not limited to indices, rates, data and analytics, or the finess or suitability of the LSEG products for any particular purpose to which they might be put. The user of the information assumes the entire risk of any use it may make or permit to be made of the information.

No responsibility or liability can be accepted by any member of LSEG nor their respective directors, officers, employees, partners or licensors for (a) any loss or damage in whole or in part caused by, resulting from, or relating to any inaccuracy (negligent or otherwise) or other circumstance involved in procuring, collecting, compiling, interpreting, analysing, editing, transcribing, transmitting, communicating or delivering any such information or data or from use of this document or links to this document or (b) any direct, indirect, special, consequential or incidental damages whatsoever, even if any member of LSEG is advised in advance of the possibility of such damages, resulting from the use of, or inability to use, such information.

No member of LSEG nor their respective directors, officers, employees, partners or licensors provide investment advice and nothing in this document should be taken as constituting financial or investment advice. No member of LSEG nor their respective directors, officers, employees, partners or licensors make any representation regarding the advisability of investing in any asset or whether such investment creates any legal or compliance risks for the investor. A decision to invest in any such asset should not be made in reliance on any information herein. Indices and rates cannot be invested in directly. Inclusion of an asset in an index or rate is not a recommendation to buy, sell or hold that asset nor confirmation that any particular investor may lawfully buy, sell or hold the asset or an index or rate containing the asset. The general information contained in this publication should not be acted upon without obtaining specific legal, tax, and investment advice from a licensed professional.

Past performance is no guarantee of future results. Charts and graphs are provided for illustrative purposes only. Index and/or rate returns shown may not represent the results of the actual trading of investable assets. Certain returns shown may reflect back-tested performance. All performance presented prior to the index or rate inception date is back-tested performance. Back-tested performance, but is hypothetical. The back-test calculations are based on the same methodology that was in effect when the index or rate methodology with the benefit of hindsight, and the historic calculations of an index or rate may change from month to month based on revisions to the underlying economic data used in the calculation of the index or rate.

This document may contain forward-looking assessments. These are based upon a number of assumptions concerning future conditions that ultimately may prove to be inaccurate. Such forward-looking assessments are subject to risks and uncertainties and may be affected by various factors that may cause actual results to differ materially. No member of LSEG nor their licensors assume any duty to and do not undertake to update forward-looking assessments.

No part of this information may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without prior written permission of the applicable member of LSEG. Use and distribution of LSEG data requires a licence from LSEG and/or its licensors.

