

Indexing the world

In this paper we provide:

- A brief history of FTSE GEIS, from when it first began as the FT-Actuaries World Index in 1987 to what it is today — an internationally recognized series of global benchmarks.
- An illustration of the broad coverage and modular design of FTSE GEIS.
- An explanation of how FTSE's Country Classification process has evolved, including an introduction to its unique four-tiered approach to classifying markets.
- A step-by-step overview of the FTSE GEIS review process, including the region-relative approach to universe construction and size segmentation.
- An introduction to the FTSE Russell governance process.
- An example of how global equity markets have changed over time and how FTSE GEIS has evolved to reflect this change.

Since its inception over thirty years ago, the FTSE Global Equity Index Series (FTSE GEIS) has matured and evolved in step with equity markets globally. Today, FTSE GEIS provides broad, modular coverage of the entire global opportunity set by including large, mid, small and micro cap companies across both developed and emerging markets.

The history of FTSE GEIS

The predecessor to FTSE GEIS, the FT-Actuaries World Index, was conceived in 1986 through a collaboration between the Financial Times, the Institute and Faculty of Actuaries (specifically, its investment research arm), Goldman Sachs and broker Wood Mackenzie and Co. While each founding partner viewed the world of international investing through a different lens, all four firms recognized the need for a new breed of global equity indexes.

In 1987, Eric Short, a Financial Times journalist and actuary noted, “Local stock market indexes are not sufficient in themselves to provide the fund manager and adviser with all the tools needed to assist in their international investment, especially if certain stocks on the market are not freely available to overseas investors”.¹ The FT-Actuaries World Index, which at that time covered roughly 70% of the market capitalization of 23 countries² was their solution to this problem. From there, the following timeline emerged:

- In 1995, the London Stock Exchange and the Financial Times formed a joint venture (FTSE) which took over calculation of the index in 1997 and bought out the other partners in 1999.³
- In 2000, The Barings Emerging Market Index was incorporated, adding 20 countries and extending target market coverage from 70% to 90%, giving rise to the FTSE All-World Index. This timing of this enhancement was important because investing in emerging markets was gaining in popularity, as was accessing companies deeper down the market capitalization spectrum.
- In 2003, the series was renamed the FTSE Global Equity Index Series and extended to include small cap stocks, with index reviews grouped into seven regions: Asia Pacific ex- Japan, Developed Europe, Emerging Europe, Japan, Latin America, Middle East & Africa and North America.
- In 2014, the London Stock Exchange Group acquired the Frank Russell Company, including the Russell Indexes. The FTSE Russell brand was born as a result. FTSE Russell products, including FTSE GEIS, are used extensively by institutional and retail investors globally.
- In 2018, FTSE Russell enhanced FTSE GEIS by introducing the optional coverage of global microcap stocks from both Developed and Emerging markets. The addition of the FTSE Global Micro Cap Index, extended coverage of each of the seven FTSE GEIS regions to over 99%, enabling market participants to identify investment opportunities in the smallest segment of the global investable equity universe.

¹ Assessing World Stock Markets: The Design, Calculation and Production of the Financial Times–Actuaries World Indices”, Eric Short, FIA, presentation to the Faculty of Actuaries Students’ Society, November 1987.

² This was achieved by setting a target of at least 70% coverage of the aggregate value of all listed equities in each local market, and at least 10% (and up to 30%) by number of the available companies in each market.

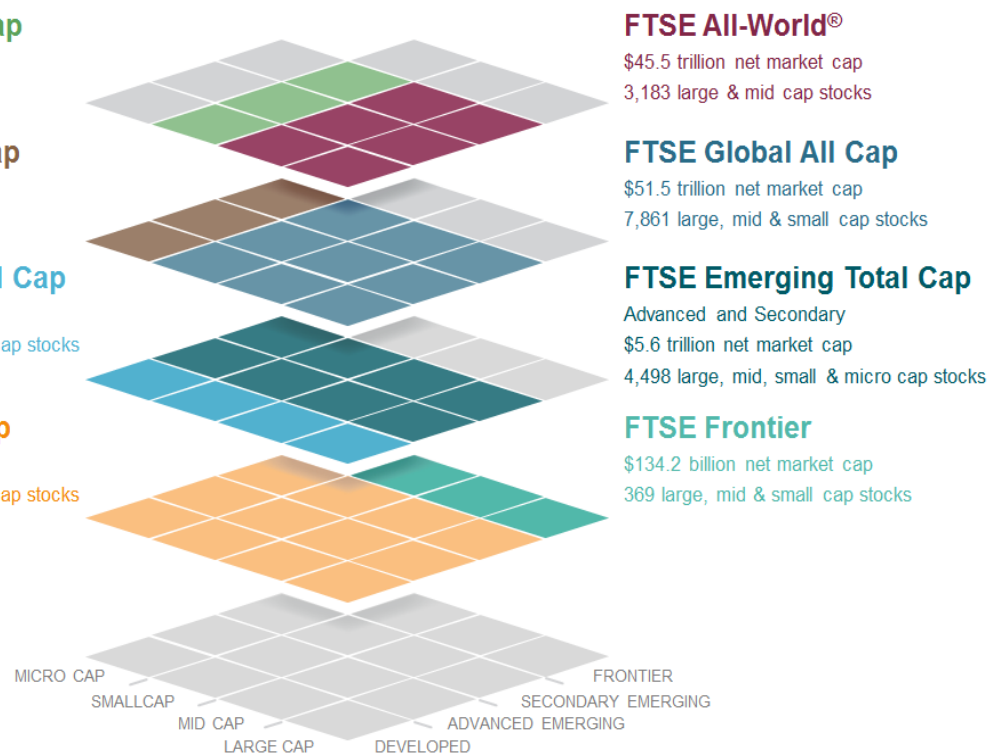
³ Wood MacKenzie sold its share to Standard and Poor’s in 1995.

FTSE GEIS today

As illustrated in Figure 1, as of March 2018, coverage of the FTSE Global All Cap Index (large, mid and small cap) includes over 7,800 stocks (\$51.5 trillion in net market cap) across 47 Developed and Emerging markets. The FTSE Global Micro Cap Index extends target coverage of the series from 98% to over 99% of each of the seven FTSE GEIS regions and adds nearly 8,000 stocks with a combined total of approximately \$1.2 trillion in net market cap. For investors looking for a complete global view, the FTSE Global Total Cap Index provides the broadest coverage available by combining the FTSE Global All Cap Index with the FTSE Global Micro Cap Index to cover large, mid, small and micro cap stocks across both Developed and Emerging markets.

The series is divisible into modular components as well, including the well-known FTSE All-World Index, which includes large and mid-cap stocks from all covered markets, the FTSE Global Small Cap Index, and the FTSE Global Small/Micro Index. A wide range of sub-indexes are available to further segment the global market into sectors, regions, and individual countries.

Figure 1: FTSE GEIS coverage and modularity



Source: FTSE Russell, data as of March 30, 2018. For more information please see the FTSE Global Equity Index Series Ground Rules.

The evolution of the FTSE Country Classification process

Countries eligible for the original FT-Actuaries World Index had "an established stock market with viable, reliable stock prices and company data" (Short, 1987). As one would expect, some countries initially fell short of this requirement. Finland, for example, was not included in the FT-Actuaries World Index until a year after its launch because of doubts about the reliability of the country's published company data.

When the distinction between developed and emerging markets was introduced in 2000 with the launch of the FTSE All-World Index, the guidelines were somewhat arbitrary and tended to focus first on the relative wealth of a country with an added layer of subjective judgment around its market's quality. FTSE set out to improve this process by conducting extensive consultations with over 100 institutional investors to propose a more efficient, transparent method of classifying countries. During the consultation process, FTSE tested the notion of a more structured, objective framework for determining a country's development status. The proposed process considered additional criteria and was designed to encourage countries to adopt global best practices in the pursuit of promotion between classification levels.

The FTSE Country Classification process as it exists today was developed following the conclusion of the consultation and continues to be monitored closely by the FTSE Russell Country Classification Advisory Committee and the FTSE Russell Policy Advisory Board. The guiding principles for this formal market classification process, along with the Quality of Markets Matrix against which markets are objectively judged and compared, are published on the FTSE Russell website. To further improve transparency, FTSE Russell also publishes a Watch List of countries likely to be reclassified, enabling index users to monitor possible upcoming changes.⁴

Two levels of Emerging markets

An attribute exclusive to the FTSE Country Classification process is its unique 4-tiered country classification structure, which classifies countries as Developed, Advanced Emerging, Secondary Emerging and Frontier (see figure 2). By providing two layers of classification at the Emerging markets level, users are able to identify which Emerging markets are closer to achieving Developed market status. While some FTSE GEIS users may choose to simply view the Emerging markets universe as one combined opportunity set, having the added option of dissecting where these markets fall along the Advanced Emerging / Secondary Emerging market spectrum allows for added flexibility in the development of portfolio strategies. For example, investors may choose to weight their emerging markets portfolio based on risk by focusing on countries with higher or lower country risk profiles.

⁴ For more information about the FTSE Country Classification process please visit: <http://www.ftse.com/products/indices/country-classification>

FTSE Frontier

Countries classified as Frontier markets are included in the FTSE Frontier Index Series⁵ (shown in Figures 1 and 2). Frontier markets are those that are still developing, and they tend to attract investors looking to benefit from diversification opportunities and growth potential. There is a tendency to associate Frontier markets with low income countries, but according to the World Bank, 9 of the 28 countries included in the FTSE Frontier Index Series are actually considered to be high-income economies (defined for the 2018 fiscal year as having a per capita Gross National Income of \$12,236 or more) and another 9 are considered upper-middle income economies.⁶ FTSE's Country Classification process is largely independent of GNI or economy size, and instead focuses on a country's political and market environment. Criteria considered include the depth and breadth of financial markets, legal and regulatory infrastructure, and general ease with which foreign investors can do business.

Figure 2: FTSE Russell's unique 4-tiered country classification structure



Source: FTSE Russell, data as of March 2018.

*Poland to be promoted to Developed market status September 2018.

**Kuwait to be promoted from Unclassified to Secondary Emerging market status September 2018.

*** Saudi Arabia to be promoted from Unclassified to Secondary Emerging market status March 2019.

For more information please visit: <http://www.ftse.com/products/indices/country-classification>

⁵ For more information about the FTSE Frontier Index Series, please visit <http://www.ftse.com/products/indices/frontier>

⁶ <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519>

The FTSE GEIS regional-relative approach

Another design principle central to FTSE GEIS is its regional-relative approach to defining the global investment universe and segmenting stocks into market capitalization bands. Through ongoing consultations with FTSE Russell index users, the view remains that this approach most closely reflects established practices across global portfolios. By employing a regional approach to global index design, the indexes included in the FTSE GEIS family align with the most common global investment management process.

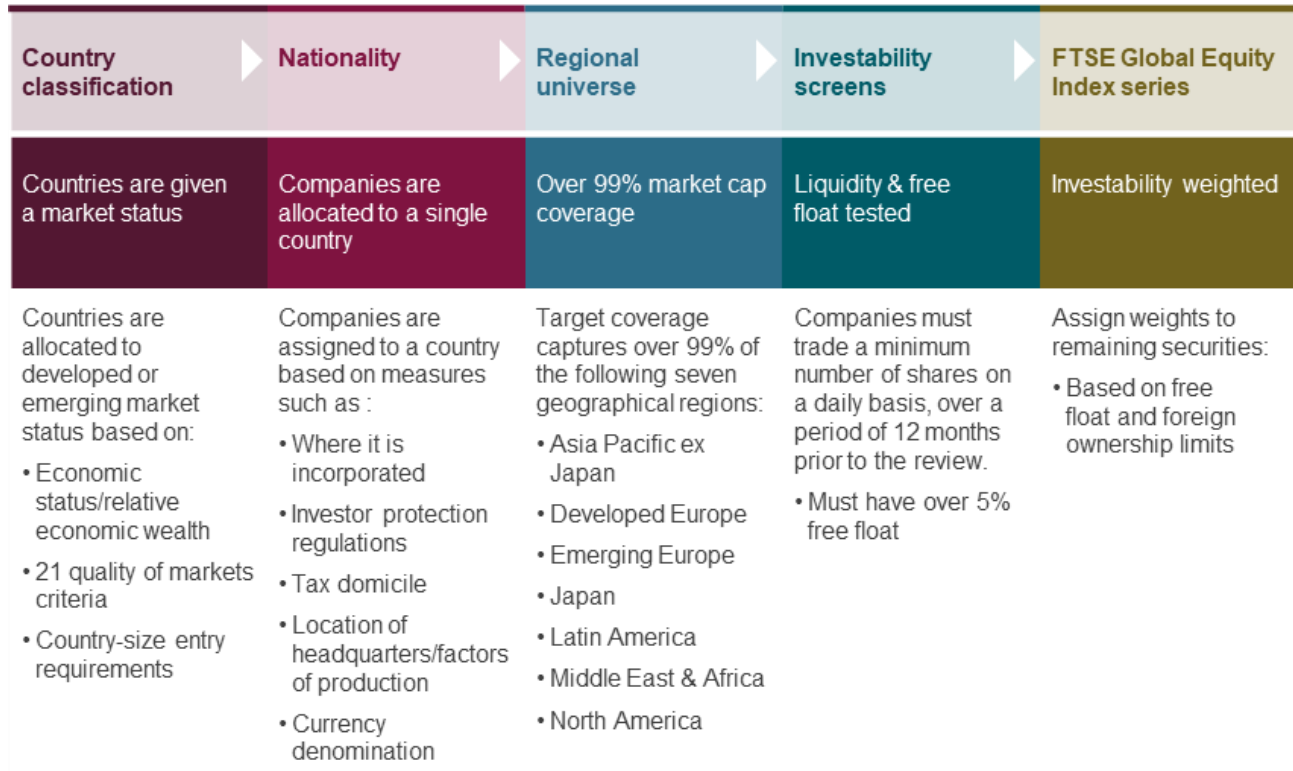
Reviewing each region independently rather than on a global scale also reduces the influence some of the world's largest markets could have on the index's representation of smaller countries. By capturing each of the seven regional universes separately, countries are grouped and reviewed with their peer markets, resulting in a comprehensive, balanced approach to universe capture and size segmentation.

The five steps below, also shown in Figure 3, summarize the semi-annual process conducted for reviewing the FTSE GEIS indexes and capturing the global investable universe.

- **Step 1:** Countries are classified as either Developed, Advanced Emerging, Secondary Emerging or Frontier.
- **Step 2:** Companies are assigned to a single country based on an assessment of a number of factors including country of incorporation, country of domicile for tax purposes, and location of headquarters⁷.
- **Step 3:** Companies are grouped according to their country assignment into seven regional universes. Within each universe, companies are ranked in descending order by total market cap and companies are allocated to large, mid, small or micro cap based on a combination of their regional rank, size and current index membership. Buffer zones are applied to ensure existing constituents are only moved between market capitalization tiers (e.g.; from small cap to mid cap) when material shifts in size occur, a common practice among index providers that helps to mitigate unnecessary turnover.
- **Step 4:** Investability screens are applied to eliminate stocks considered unavailable to institutional investors.
- **Step 5:** Index weights are determined based on market capitalization adjusted for available float and foreign ownership limits.

⁷ For a complete list of factors assessed in determining nationality, please review the [FTSE Global Equity Index Series Ground Rules](#)

Figure 3: The FTSE GEIS review process

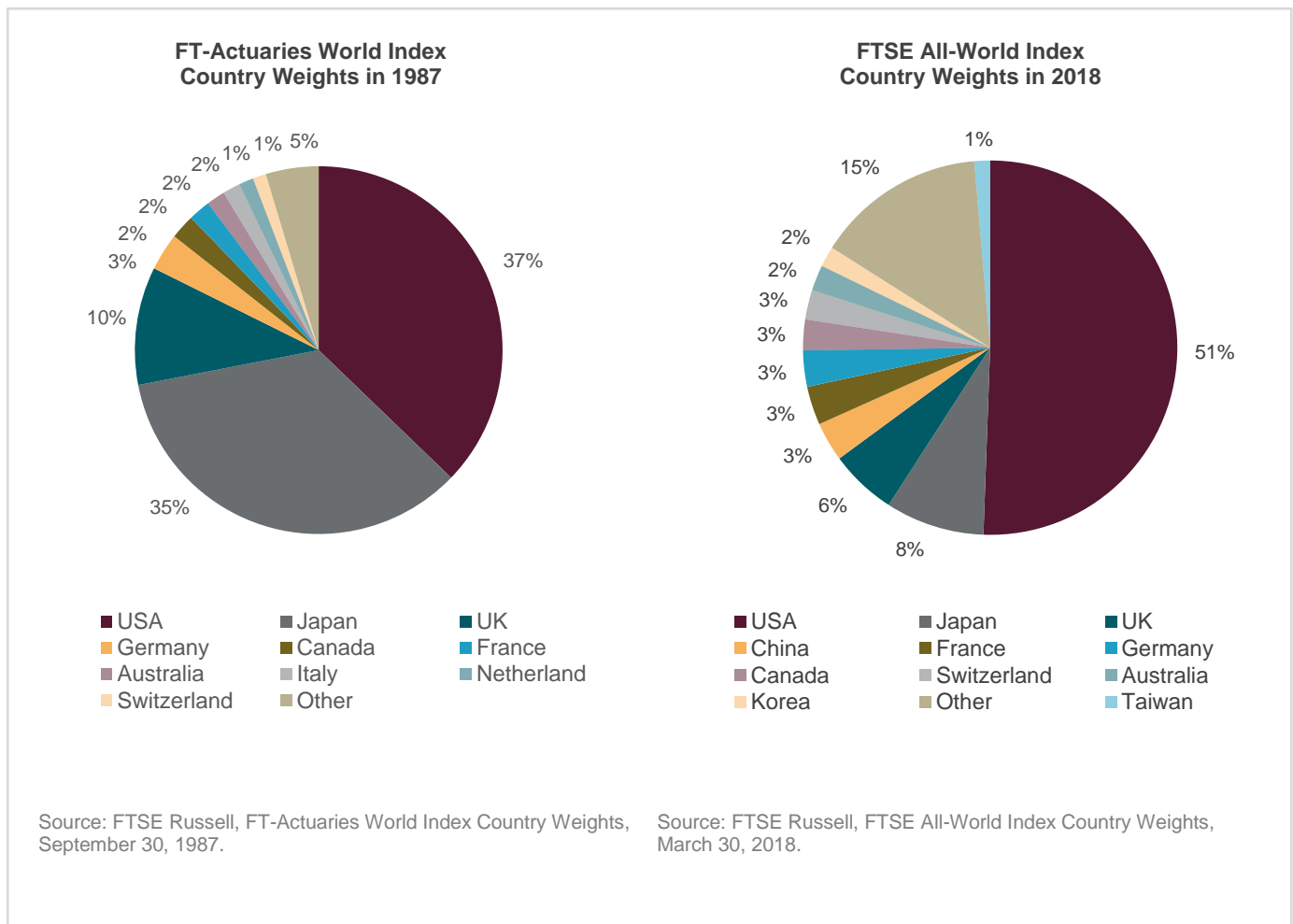


Source: FTSE Russell. For illustrative purposes only. For more information please see the FTSE Global Equity Index Series Ground Rules.

A changing global equity market

Global equity markets have grown and changed dramatically over the last thirty years, and because FTSE Russell is committed to providing accurate coverage of the global opportunity set via FTSE GEIS, users can rely on the indexes to accurately capture this evolution. Figure 4 compares the weights of the countries included in the FT-Actuaries World Index as of 1987 to the country weights of FTSE All-World Index as of 2018. In 1987, Japan represented roughly 35% of the FT-Actuaries World Index while the US represented 37%. Over thirty years later, Japan's representation has dipped to approximately 8%, while the weight of the US has grown to over 51% — an especially notable observation given that the number of countries included in the index has increased substantially over the same period (23 in 1987 to 47 in 2018).

Figure 4: Country weights comparison

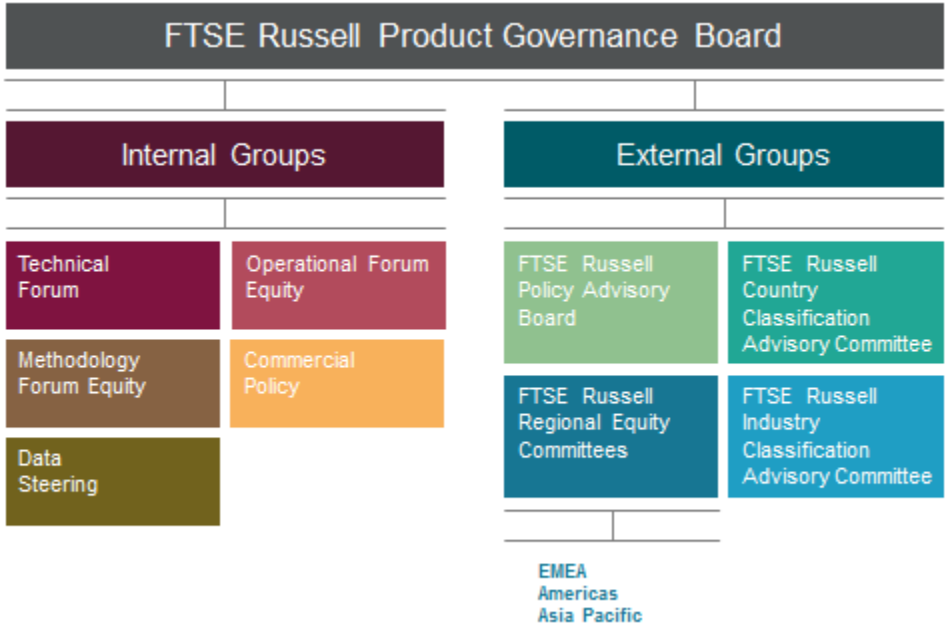


FTSE GEIS governance

Transparency, reliability and accuracy are key attributes of FTSE GEIS. From its launch over thirty years ago, the FT-Actuaries World Index (now FTSE GEIS) was supervised by a diverse group of investment managers and industry professionals. The first Policy Group, responsible for ensuring that the indexes remained independent, broad, accurate and objective, included representatives of the three founding firms as well as members from external international investment and advisory firms. Today, FTSE GEIS (and all FTSE Russell indexes) is governed by a well-defined framework that draws from strong internal expertise with support from external independent committees of leading market participants (Figure 5).⁸ The external committees are made up of investment market professionals from around the world, including pension plan trustees, investment managers, consultants, and other market participants that make use of FTSE Russell indexes. Members serve in a personal capacity, and they are chosen for their ability to provide strategic input.

This formal process proactively evaluates all of the construction and maintenance rules applied to the indexes, from country classification to corporate action reflection, to ensure they are responding and adapting to the evolving markets.

Figure 5: FTSE Russell’s Index Governance Groups



⁸ For additional details on the governance process and committees please visit: <http://www.ftse.com/products/indices/index-support-guides>

Conclusion

Since 1987, use of FTSE GEIS indexes has expanded enormously. Today, FTSE Russell indexes are used by institutional and retail investors around the world. Leading asset owners, asset managers, ETF providers and investment banks have chosen the indexes to benchmark their investment performance and to create investment funds, ETFs, structured products and index-based derivatives. As of December 31, 2017 over \$1.7T in assets under management are benchmarked to a FTSE GEIS index, with \$1.4T in assets tracking a FTSE GEIS index passively via index-linked investment products.⁹

FTSE Russell is committed to maintaining strong relationships with market participants, regulators and exchanges globally. As the global investment landscape has evolved over time, so has FTSE GEIS thanks to our global perspective and dedicated governance process. Today, FTSE GEIS provides investors of all types with accurate, comprehensive coverage of global equity markets using an approach to index construction that is objective, transparent and reliable.

⁹ Data as of December 31, 2017 as reported on April 2, 2018 by eVestment for institutional assets, Morningstar for retail mutual funds, insurance products, and ETFs, and additional passive assets directly collected by FTSE Russell. AUM data includes blended benchmarks and excludes futures and options. Passive assets directly collected by FTSE Russell have been removed from third party sources to prevent double counting. No assurances are given by FTSE Russell as to the accuracy of the data.

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

© 2018 London Stock Exchange Group plc and its applicable group undertakings (the "LSE Group"). The LSE Group includes (1) FTSE International Limited ("FTSE"), (2) Frank Russell Company ("Russell"), (3) FTSE TMX Global Debt Capital Markets Inc. and FTSE TMX Global Debt Capital Markets Limited (together, "FTSE TMX"), (4) MTSNext Limited ("MTSNext"), (5) Mergent, Inc. ("Mergent"), (6) FTSE Fixed Income LLC ("FTSE FI") and (7) The Yield Book Inc ("YB"). All rights reserved.

FTSE Russell® is a trading name of FTSE, Russell, FTSE TMX, MTS Next Limited, Mergent, FTSE FI and YB. "FTSE®", "Russell®", "FTSE Russell®", "MTS®", "FTSE TMX®", "FTSE4Good®", "ICB®", "Mergent®", "WorldBIG®", "USBIG®", "EuroBIG®", "AusBIG®", "The Yield Book®", 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 the LSE Group or their respective licensors and are owned, or used under licence, by FTSE, Russell, MTSNext, FTSE TMX, Mergent, FTSE FI or YB.

All information is provided for information purposes only. All information and data contained in this publication is obtained by the LSE Group, from sources believed by it to be accurate and reliable. Because of the possibility of human and mechanical error as well as other factors, however, such information and data is provided "as is" without warranty of any kind. No member of the LSE Group 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 of results to be obtained from the use of the FTSE Russell Products or the fitness or suitability of the FTSE Russell Products for any particular purpose to which they might be put. Any representation of historical data accessible through FTSE Russell Products is provided for information purposes only and is not a reliable indicator of future performance.

No responsibility or liability can be accepted by any member of the LSE Group 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 error (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 the LSE Group is advised in advance of the possibility of such damages, resulting from the use of, or inability to use, such information.

No member of the LSE Group nor their respective directors, officers, employees, partners or licensors provide investment advice and nothing contained in this document or accessible through FTSE Russell Products, including statistical data and industry reports, should be taken as constituting financial or investment advice or a financial promotion.

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 the LSE Group. Use and distribution of the LSE Group data requires a licence from FTSE, Russell, FTSE TMX, MTSNext, Mergent, FTSE FI, YB and/or their respective licensors.

About FTSE Russell

FTSE Russell is a leading global index provider creating and managing a wide range of indexes, data and analytic solutions to meet client needs across asset classes, style and strategies. Covering 98% of the investable market, FTSE Russell indexes offer a true picture of global markets, combined with the specialist knowledge gained from developing local benchmarks around the world.

FTSE Russell index expertise and products are used extensively by institutional and retail investors globally. For over 30 years, leading asset owners, asset managers, ETF providers and investment banks have chosen FTSE Russell indexes to benchmark their investment performance and create investment funds, ETFs, structured products and index-based derivatives. FTSE Russell indexes also provide clients with tools for asset allocation, investment strategy analysis and risk management.

A core set of universal principles guides FTSE Russell index design and management: a transparent rules-based methodology is informed by independent committees of leading market participants. FTSE Russell is focused on index innovation and customer partnership applying the highest industry standards and embracing the IOSCO Principles. FTSE Russell is wholly owned by London Stock Exchange Group.

For more information, visit ftserussell.com.

To learn more, visit ftserussell.com; 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 3581 2764

Sydney +61 (0) 2 8823 3521