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## FTSE Thematic Index Series

v1.3

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## Section 1

# Introduction

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### 1.0 Introduction

- 1.1 This document sets out the Ground Rules for the construction and management of the FTSE Thematic Index Series. Copies of the Ground Rules are available from [www.ftserussell.com](http://www.ftserussell.com).
- 1.1.1 A thematic index is an index which seeks to provide exposure to a theme or concept that in general cannot be captured by traditional classification schemes. Examples of themes are Financial Technology or “Fintech”, Internet of Things, and Artificial Intelligence.
- 1.1.2 Company membership of a theme is determined via a Dynamic Classification Algorithm (see Section 5). The algorithm classifies companies using their Worldscope Company Descriptions (see Section 4) and determines via a set of keywords which companies are most closely associated with the theme of interest.
- 1.2 Indices are calculated at global, regional, and country levels.
- 1.3 Indices in the FTSE Thematic Index Series are calculated on an end of day basis in US Dollar, UK Pounds Sterling, Euro, Japanese Yen, Australian Dollar, Renminbi (CNY), Hong Kong Dollar, and Canadian Dollar.
- 1.4 Capital return, total return, and net total return indices are published at the end of each working day. The Total Return Indices are based on ex dividend adjustments. All dividends are applied as declared in the FTSE Total Return Index.
- 1.5 The net total return indices are calculated based on the maximum withholding tax rates applicable to dividends received by institutional investors who are not resident in the same country as the remitting company and who do not benefit from double taxation treaties.
- 1.6 Selected indices are calculated and disseminated on a real time basis.
- 1.7 **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 S.A.S.
- 1.8 FTSE Russell does not make any representation or warranty, express or implied, as to the accuracy, completeness or correctness of the FTSE Thematic Index Series.

- 1.9 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, 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 indicative index series or any constituent data.



## Section 2

# Management Responsibilities

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## 2.0 Management Responsibilities

### 2.1 FTSE International Limited (FTSE)<sup>1</sup>

2.1.1 FTSE 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 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 indices.

2.1.2 FTSE is responsible for monitoring the performance of the FTSE Thematic Index Series throughout the day and will determine whether the status of the Index should be Firm, Closed, Indicative or Held.

### 2.2 Amendments to these Ground Rules

2.2.1 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. The feedback from these consultations will be considered by the FTSE Russell Index Governance Board before approval is granted.

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



## Section 3

# FTSE Russell Index Policies

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### 3.0 FTSE Russell Index Policies

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

#### 3.1 Queries, Complaints and Appeals

A constituent or prospective constituent security (or professional advisor acting on behalf of the security), a national organisation or a group of no fewer than ten users of the Indices from different organisations acting in their professional capacity may appeal against decisions taken by FTSE Russell.

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

[Benchmark Determination Complaints Handling Policy.pdf](#)

FTSE Russell's Appeal Process can be accessed using the following link:

[Appeals Against Decisions.pdf](#)

#### 3.2 Policy for Benchmark Methodology Changes

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

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

#### 3.3 FTSE Russell Governance Framework

- 3.3.1 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 Benchmarks<sup>2</sup>, the European benchmark regulation<sup>3</sup> and the UK benchmark regulation<sup>4</sup>. The FTSE Russell Governance Framework can be accessed using the following link:

[FTSE Russell Governance Framework.pdf](#)

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<sup>2</sup> IOSCO Principles for Financial Benchmarks Final Report, FR07/13 July 2013

<sup>3</sup> 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

<sup>4</sup> The Benchmarks (Amendment and Transitional Provision) (EU Exit) Regulations 2019



## Section 4

# Data Requirements

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### 4.0 Data Inputs

#### 4.1 Company Descriptions

4.1.1 Worldscope company descriptions (“Business Description - Extended”) are used in the Dynamic Classification Algorithm (Section 5). These descriptions provide details of the primary commercial activities that a company undertakes.

4.1.2 Company descriptions typically consist of short paragraphs that provide an overview of company’s business activities, sourced from information reported by the company. Company descriptions are updated as a company’s activities evolve over time.

#### 4.2 Data Cut-off Dates

4.2.1 The cut-off date for the inclusion of Worldscope data in the Dynamic Classification Algorithm is the close of business on the second Friday of May.

## Section 5

# Dynamic Classification Algorithm

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### 5.0 The Dynamic Classification Algorithm

#### 5.1 Text Processing Algorithms

5.1.1 The dynamic classification algorithm uses implementations of two well established algorithms:

- 1) FastText algorithm, which provides text classification by transforming text into continuous vectors that can be used in language related tasks.
- 2) Okapi BM25 search algorithm, which ranks the results of a search providing an estimate of the relevance of text documents to the given search query.

#### 5.2 Data Preparation

5.2.1 Input text data is processed to:

- A. Remove punctuation
- B. Convert to lowercase
- C. Create bi-grams from separate words e.g. United Kingdom to united\_kingdom, wind farm to wind\_farm.

5.2.2 The preparation of text is a preliminary stage of the Keyword Identification step (see Rule 5.3)

#### 5.3 Keyword Identification

5.3.1 Apply the FastText algorithm on all input data. The input data consists of the entire historical data set of Worldscope company descriptions. This step creates the learned word embeddings, where words and descriptions are represented as vectors.

5.3.2 Seed words that describe a target theme are used to discover a set of suggested keywords that can be used to further define the theme.

5.3.3 Suggested keywords are identified by querying the word embedding model determined in Rule 5.3.1. Words that are similar to, or used in the same context as, the initial seed words are suggested as potentially relevant keywords.

5.3.4 Suggested keywords are ranked using their cosine similarity (relevance to) the seed words. The cosine similarity is the dot product between the vectors which represent seed words and suggested keywords. The ranking provides an indication of potential keyword relevance and is not a selection criterion.



- 5.3.5 The suggested keywords may contain commonly used abbreviations, spelling differences, and associated words that could potentially be included in the keyword list.
- 5.3.6 The suggested keywords are selected if they suitably represent, and are relevant to, the Theme Description (Section 7). The full list of selected keywords is then used to discover which securities are related to the theme, and to determine theme membership.
- 5.3.7 Keywords are represented as vectors which provides a mechanism by which keywords and Worldscope company descriptions can be compared.
- 5.4 **Determine Theme Membership**
- 5.4.1 After the Keyword Identification step (Rule 5.3) theme membership is determined using company descriptions of constituents of each eligible universe.
- 5.4.2 Eligible universes for each index in the FTSE Thematic Index Series are outlined in Section 8.
- 5.4.3 The selected keywords determined in Rule 5.3 are used with the Okapi BM25 search algorithm.
- 5.4.4 The search algorithm ranks Worldscope company descriptions according to their relevance to the keywords. Companies that have descriptions without any exact keyword matches are **not** included.
- 5.4.5 Cosine similarities are used to measure the relevance of a company description to the target keyword list buy:
- (i) Determine the target keyword vector, **W**, which is the sum of all the individual keyword vectors (Rule 5.3.7).
  - (ii) Calculate the cosine similarity between the each Worldscope company description vector **D** and the target keywords vector, **W**, where the cosine similarity is the dot product between **W** and **D**,
- 5.4.6 The Z-score of the cosine similarity is termed the Thematic Score. Since all possible companies are scored, those less relevant to the theme are deemed to be those with a Thematic Score < 0 and are excluded.
- 5.5 **Classification Exclusions (ICB, NAICS, SIC)**
- 5.5.1 Where appropriate, existing classification schemes are used to exclude wholly unrelated classifications. Classification exclusions used for each index can be found in Section 8.
- 5.6 **Classification Inclusions (ICB, NAICS, SIC)**
- 5.6.1 Where a classification scheme is sufficiently granular, focused and representative of the theme in question, it is used to include all companies with that classification in the theme of interest. Classification inclusions used for each index can be found in Section 8.



## Section 6

# Thematic Challenge Process

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### 6.0 Thematic Challenge Process

- 6.1.1 The Thematic Challenge Process provides a mechanism by which a security's membership of a theme may be challenged.
- 6.1.2 As part of the annual review process, FTSE Russell may identify companies whose description does contain relevant keywords, but whose overall business description does not sufficiently describe activities which justify inclusion to the theme in question. These companies may be excluded from the index if their relevance to the theme is not sufficient.
- 6.1.3 If a user of this index series, a constituent or prospective constituent company (or professional advisor acting on behalf of the company) wishes to challenge a security's membership of a theme or a keyword used they should complete the theme data form which can be found at: Thematic\_Data\_Form.pdf. The reasons for challenging a security's membership of a theme or keyword used should be stated, having regard to these index ground rules, and attaching any documentary evidence in support of its claim. In considering the claim, FTSE Russell may only take account of publicly available information. The form and any supporting evidence should be sent to FTSE Russell Client Services at [info@ftserussell.com](mailto:info@ftserussell.com)
- 6.1.4 FTSE Russell will review the company's membership of a theme as well as the key word selection based on its own analysis. If a membership removal or keyword change is supported, the change will be announced through a FTSE Russell technical notice. FTSE Russell will implement the removal of the security or keyword change with a minimum of two days' notice. If a change is not supported by FTSE Russell, the complainant will be informed of this outcome via the FTSE Russell Client Services team with the rationale for the decision.

### 6.2 The Thematic Challenge Process Timing:

- 6.2.1 The Thematic Challenge Process is a part of the periodic annual review of the FTSE Thematic Index Series.
  - A. However, the challenge mechanism may be instigated at any time in the event there is doubt regarding a company's membership of a given theme is appropriate.
  - B. Keyword challenges will be restricted to the periodic annual review per timing indicated in the following paragraphs.
- 6.2.2 Three weeks prior to the third Friday of the review month, the thematic memberships determined in Section 5.4 and list of keywords for each theme determined in Rule 5.3 are announced.

- 6.2.3 A period of one week from the thematic review announcement date is provided to allow challenges to the selected companies and chosen keywords to be lodged.
- 6.2.4 Any challenges received are reviewed internally by FTSE Russell and any changes announced by the Wednesday prior to the second Friday of the review month.

## Section 7

# Theme Definitions

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### 7.0 Theme Definitions

- 7.1 Themes in the FTSE Thematic Index Series are defined using a descriptive paragraph, the Theme Description. A set of keywords relevant to each theme are created using the suggested list determined via the Dynamic Classification Algorithm detailed in Section 5.
- 7.2 Keywords are used to select companies related to a theme as it is described in the descriptive paragraph. The following table provides information on each theme and the companies it aims to capture.
- 7.3 Although themes are not static, the keywords will remain unchanged unless the evolution of the theme warrants an update or its description and selected keywords also change. Consequently, as themes evolve descriptions and keywords will be updated subject to approval by FTSE Russell.
- 7.4 The approval of new keywords and theme descriptions occurs as part of the annual review process of the FTSE Thematic Index Series.
- 7.5 The following table outlines the theme definitions.

Theme	Description
<b>Artificial Intelligence</b>	<p>The Artificial Intelligence theme aims to include companies that provide products and services to facilitate use of artificial intelligence (AI), or are expected to benefit from the utilization of AI.</p> <p>The theme includes but is not limited to companies focused on the following:</p> <ul style="list-style-type: none"> <li>* Artificial intelligence</li> <li>* Machine learning</li> <li>* Data science</li> </ul>

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Theme	Description
<b>Battery Tech</b>	<p>The Battery Tech theme aims to include companies that design, develop, and provide essential and advanced battery technology. This theme also includes companies focus on energy storage technology or battery charging solution.</p> <p>The theme includes but is not limited to companies focused on the following:</p> <ul style="list-style-type: none"> <li>* Lithium battery</li> <li>* Fuel cell</li> <li>* Charging system</li> <li>* Battery system</li> <li>* Energy storage</li> </ul>
<b>Cloud Computing &amp; Services</b>	<p>The Cloud Computing &amp; Services theme aims to include companies that provide hardware, software, data centers, or platforms for cloud computing. This theme also includes cloud-based businesses, companies who build their products upon cloud services, and providers of software-as-a-service products.</p> <p>The theme includes but is not limited to companies focused on the following:</p> <ul style="list-style-type: none"> <li>* Cloud platforms</li> <li>* Cloud applications</li> <li>* Software-as-a-service</li> <li>* Infrastructure-as-a-service</li> <li>* Data centers</li> </ul>
<b>Cybersecurity</b>	<p>The Cybersecurity theme aims to include companies that provide products and services (hardware and software) to enhance cybersecurity.</p> <p>The theme includes but is not limited to companies focused on the following:</p> <ul style="list-style-type: none"> <li>* Anti-virus software</li> <li>* Internet security</li> <li>* Network security</li> <li>* Cybercrime detection</li> <li>* Firewalls</li> </ul>
<b>Fintech &amp; Blockchain</b>	<p>The Fintech &amp; Blockchain theme aims to include companies that provide products and services in relation to technological innovation for the financial industry. It also includes companies that employ blockchain technology outside of financial applications. This theme includes Transaction Processing Services and excludes Banks.</p> <p>The theme includes but is not limited to companies focused on the following:</p> <ul style="list-style-type: none"> <li>* Financial technology</li> <li>* Blockchain technology</li> <li>* Crypto currencies</li> <li>* Digital payments</li> <li>* Digital finance / funding</li> </ul>
<b>Future Transportation</b>	<p>The Future Transportation theme aims to include companies that that design, develop, and provide products and services (including but not limited to auto parts and software) for autonomous driving vehicles and/or electric vehicles.</p> <p>The theme includes but is not limited to companies focused on the following:</p> <ul style="list-style-type: none"> <li>* Autonomous driving</li> <li>* ADAS (Advanced Driver Assistance Systems)</li> <li>* Electric vehicles</li> <li>* Hybrid vehicles</li> <li>* Driver assistance</li> </ul>

Theme	Description
<b>Health Tech</b>	<p>The Health Tech theme aims to include companies that provide innovative medical equipment or devices, as well as healthcare software or technology solutions. This theme also includes companies engaged in digital health platforms, such as online health consultation.</p> <p>The theme includes but is not limited to companies focused on the following:</p> <ul style="list-style-type: none"> <li>* Medical system</li> <li>* Medical software</li> <li>* Surgical technology/ solutions</li> <li>* Digital/ Online healthcare</li> <li>* Genetic testing</li> </ul>
<b>Internet of Things</b>	<p>The Internet of Things (IoT) theme aims to include companies that research, develop, or provide products or services catering to the IoT both in home and industrial settings.</p> <p>The theme includes but is not limited to companies focused on the following:</p> <ul style="list-style-type: none"> <li>* Intelligent home</li> <li>* Home automation</li> <li>* Wearable technology</li> <li>* Smart meters</li> <li>* Mesh networks</li> </ul>
<b>Robotics &amp; Automation</b>	<p>The Robotics &amp; Automation theme aims to include companies that provide robotic and automation hardware, equipment, or solutions. This theme also includes companies that provide software solutions for process or system automation.</p> <p>The theme includes but is not limited to companies focused on the following:</p> <ul style="list-style-type: none"> <li>* Industrial / factory automation</li> <li>* Robotics</li> <li>* Automation equipment</li> <li>* Automation technology / solutions</li> <li>* Automatic systems</li> </ul>
<b>Semiconductors</b>	<p>The Semiconductors theme aims to include companies that design, develop, and manufacture products and services for semiconductors. This theme excludes companies that provide products and services catering to clean room system or facilities.</p> <p>The theme includes but is not limited to companies focused on the following:</p> <ul style="list-style-type: none"> <li>* IC Design</li> <li>* IC Manufacturer</li> <li>* IC Assembly &amp; Test</li> </ul>
<b>Video Gaming</b>	<p>The Video Gaming theme aims to include companies that develop or provide hardware (including parts), software, or platforms for video games or e-sports. The theme excludes casino gaming activities.</p> <p>The theme includes but is not limited to companies focused on the following:</p> <ul style="list-style-type: none"> <li>* Game console / hardware</li> <li>* Game software</li> <li>* Online / mobile games</li> <li>* Game platform / streaming</li> <li>* E-sports</li> </ul>

Theme	Description
<b>Virtual Reality</b>	<p>The Virtual Reality (VR) theme aims to include companies that provide products and services in relation to virtual or augmented reality (AR) applications, or benefit from the usage of VR/AR.</p> <p>The theme includes but is not limited to companies focused on the following:</p> <ul style="list-style-type: none"><li>* Virtual reality hardware / software</li><li>* Augmented reality hardware / software</li><li>* Mixed reality hardware / software</li><li>* VR / AR content development</li><li>* VR / AR applications</li></ul>

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## Section 8

# Eligible Securities

### 8.0 Eligible Securities

8.1 The eligible universe of securities in the FTSE Thematic Index Series and a list of available indices are detailed in the table below.

Indices	Eligible Universe
Global thematic indices	FTSE Global All Cap Index
Russell thematic indices	Russell 3000 Index
UK thematic indices	FTSE All-Share ex Investment Trusts Index; FTSE AIM All-Share Index

Theme	Global thematic indices	Russell thematic indices	UK thematic indices
<b>Single theme</b>			
Artificial Intelligence	FTSE Global Artificial Intelligence Index	Russell Artificial Intelligence Index	N/A
Battery Tech	FTSE Global Battery Tech Index	N/A	N/A
Cloud Computing & Services	FTSE Global Cloud Computing & Services Index	Russell Cloud Computing & Services Index	N/A
Cybersecurity	FTSE Global Cybersecurity Index	Russell Cybersecurity Index	N/A
Fintech & Blockchain	FTSE Global Fintech & Blockchain Index	Russell Fintech & Blockchain Index	N/A
Future Transportation	FTSE Global Future Transportation Index	N/A	N/A
Health Tech	FTSE Global Health Tech Index	Russell Health Tech Index	N/A
Internet of Things	FTSE Global Internet of Things Index	Russell Internet of Things Index	N/A



Theme	Global thematic indices	Russell thematic indices	UK thematic indices
Robotics & Automation	FTSE Global Robotics & Automation Index	N/A	N/A
Semiconductors	FTSE Global Semiconductors Index	Russell Semiconductors Index	N/A
Video Gaming	FTSE Global Video Gaming Index	N/A	N/A

### Multi-theme

Artificial Intelligence; Cloud Computing & Services; Cybersecurity; Fintech & Blockchain; Future Transportation; Internet of Things; Robotics & Automation; Video Gaming; Virtual Reality	FTSE Global Technology SuperTheme Index	Russell Technology SuperTheme Index	FTSE UK Future Technology SuperTheme Index
Artificial Intelligence; Video Gaming; Virtual Reality	FTSE Global Metaverse Index	Russell Metaverse Index	N/A

## 8.2 Default Inclusions

8.2.1 Default inclusions are securities or classifications automatically included in a theme or an index as detailed in the table below.

## 8.3 Default Exclusions

8.3.1 All thematic Index Series will exclude ICB sectors

- 302030 Mortgage Real Estate Investment Trusts
- 302040 Closed End Investments
- 302050 Open End and Miscellaneous Investment Vehicles
- 351020 Real Estate Investment Trusts

8.3.2 Default exclusions are securities or classifications automatically excluded from a theme or an index as detailed in the table below.

Single theme indices will apply the Default Inclusions and Exclusions of its relevant theme:

Theme	Default Inclusion	Default Exclusion
Artificial Intelligence	N/A	N/A
Battery Tech	N/A	N/A
Cloud Computing & Services	N/A	N/A
Cybersecurity	N/A	N/A
Fintech & Blockchain	ICB Subsector 50205015 (Transaction Processing Services)	ICB Subsector 30101010 (Banks)
Future Transportation	N/A	N/A
Health Tech	ICB Subsector 20102010 (Medical Equipment)	N/A
Internet of Things	N/A	N/A

Theme	Default Inclusion	Default Exclusion
<b>Robotics &amp; Automation</b>	N/A	N/A
<b>Semiconductors</b>	ICB Subsector 10102010 (Semiconductors)	N/A
<b>Video Gaming</b>	N/A	ICB Subsector 40501020 (Casino and Gambling)
<b>Virtual Reality</b>	N/A	N/A

Multi-theme indices will apply the Default Inclusions and Exclusions of all underlying themes. In addition, the following multi-theme indices will apply further Default Inclusions and Exclusions:

Multi-Theme Index	Default Inclusion	Default Exclusion
<b>FTSE UK Future Technology SuperTheme Index</b>	Default inclusion of all underlying themes; ICB Industry 10 (Technology)	Non-UK domiciled companies



## Section 9

# Periodic Review of Constituents

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### 9.0 Periodic Review

9.1.1 The FTSE Thematic Index Series will be reviewed annually in June using price data as of the Wednesday before the first Friday of the review month, with constituents as of the Monday following the third Friday of the review month for indices based on the FTSE Global All Cap, FTSE All-Share ex Investment Trusts and FTSE AIM All-Share Indices; and in line with the Russell reconstitution for indices derived from the Russell 3000.

9.1.2 The review will be implemented (review implementation date) after the close of business on the third Friday of the review month for indices based on the FTSE Global All Cap Index, FTSE All-Share ex Investment Trusts and FTSE AIM All-Share Indices; and on the same date as the Russell annual reconstitution for indices derived from the Russell 3000.

### 9.2 Constituent Selection - Theme Membership

9.2.1 Constituents in a FTSE Thematic Index are determined by their membership of a theme. The theme membership is determined using the:

- i. Dynamic Classification Algorithm outlined in Section 5 and
- ii. Thematic Challenge Process described in Section 6.

9.2.2 Existing constituents in a FTSE Thematic Index are retained in the index provided their description continues to identify their relevance to the theme and they remain eligible in the underlying index.

### 9.3 Multiple Lines

9.3.1 For companies with multiple listed lines, only the largest line, by free float market capitalization, as of the data cut-off date, is included in the relevant FTSE Thematic Index.

### 9.4 Constituent Weighting at the Annual Review

9.4.1 Constituents in a FTSE Thematic Index are liquidity weighted using the median traded value over the past 3 calendar months prior to data cut-off date.

9.4.2 Index constituent weights at the annual review are capped at 5%. Constituent weight's less than the minimum threshold of 5 basis points are removed from the index. Excess weights are redistributed pro-rata to the remaining constituents. This process iterates until no constituent breaches the weighting limit.

## 9.5 **Constituent Weighting in September, December, and March**

- 9.5.1 Index constituent weights are additionally capped on a quarterly basis in September, December, and March, based on their index weights, to limit the maximum constituent weight at 5%. Excess weights are redistributed pro-rata to the remaining constituents. This process iterates until no constituent breaches the weighting limit.
- 9.5.2 The calculation of the September, December and March constituent weighting factors (c) will be based on prices at close on the second Friday of the review month using shares in issue and investability weights as designated to take effect after close on the third Friday of the review month (i.e. effective from the open the following Monday).
- 9.5.3 The calculation will take into account any corporate actions/events that take effect after close on the second Friday of the review month up to and including the review effective date if they have been announced and confirmed by the second Friday of the review month.
- 9.5.4 Corporate actions / events announced after the second Friday of the review month that become effective up and including the review effective date will not result in any further adjustment.
- 9.5.5 For constituents of indices that do not trade on Friday the previous day's closing prices are used and the capping implemented after close on the third Friday of the review month (i.e. effective from the open the following Monday).
- 9.6 As part of the capping process if the number of constituents falls below 20, the index will be equally weighted using the calculation of  $1/n$  for each constituent weight, where n is the number of constituents in the FTSE Thematic Index.

## 9.7 **Index Decommissioning**

- 9.7.1 At the annual review of the FTSE Thematic Index Series, if the number of constituents in a FTSE Thematic Index falls below 20 for two consecutive reviews, that index will be decommissioned. A notice period of one year will be provided if an index has less than 20 constituents, to warn that the index may be decommissioned at the next annual review.



## Section 10

# Changes to Constituent Companies

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### 10.0 Changes to Constituent Companies

#### 10.1 Intra-review Additions

10.1.1 Additions to the underlying indices or changes ICB Classification will be considered for inclusion at the next annual review of the FTSE Thematic Index Series.

#### 10.2 Intra-review Deletions

A constituent will be deleted from a FTSE Thematic Index if removed from their underlying indices, have a change in ICB Classification which deems a company ineligible (see Rule 8.3), in the event of corporate actions and events covered in Section 10, or of securities which are subject to surveillance by stock exchanges. Such securities will be deleted from their respective FTSE Thematic Index in line with their removal from the underlying index or change in ICB classification.



## Section 11

# Corporate Actions and Events

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### 11.0 Corporate actions and events

- 11.1 If a constituent 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, the constituent's weighting in the FTSE Thematic Index Series index will remain unchanged pre and post such an event.
- 11.2 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](#)

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. These include the following:

- Capital Repayments
- Rights Issues/Entitlement Offers
- Stock Conversion
- Splits (sub-division) / Reverse splits (consolidation)
- 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.

### 11.3 Suspension of Dealing

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

### 11.4 Takeovers, Mergers and Demergers

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

## Section 12

# Indices Algorithm and Calculation Methodology

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### 12.0 Indices algorithm and calculation methodology

#### 12.1 Prices

12.1.1 The FTSE Thematic Index Series will use actual last trade prices, where available, for securities.

12.1.2 Refinitiv real-time exchange rates are used in the real-time index calculations.

#### 12.2 Index calculation

12.2.1 The FTSE Thematic Index Series calculation formula is as follows:

$$\sum_{i=1}^N \frac{(p_i \times e_i \times s_i \times f_i \times c_i)}{d}$$

Where,

- $i=1,2,\dots,N$
- $N$  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 Weighting 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.



## Appendix A: Further Information

Further information on the FTSE Thematic 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](mailto:info@ftserussell.com).

Website: [www.ftserussell.com](http://www.ftserussell.com)

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