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# **FTSE MPF Index Series**

v3.8

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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 maintenance of the FTSE MPF Index Series. Copies of these Ground Rules are available from FTSE Russell (see Appendix D) and [www.ftserussell.com](http://www.ftserussell.com).
- 1.2 The FTSE MPF Index Series is designed to create a family of Indices to be used as performance benchmarks for the Hong Kong Mandatory Provident Fund (MPF).
- 1.3 The FTSE MPF Index Series does not take account of ESG factors in its index design.
- 1.4 The FTSE MPF Index Series is based on the FTSE All-World Index Series. The following indices are calculated on a hedged and unhedged basis. Full details are contained Section 8 and Appendix A:
- FTSE MPF Hong Kong Index
  - FTSE MPF Domestic Hong Kong Index
  - FTSE MPF China Index
  - FTSE MPF China A Index
  - FTSE MPF Greater China Index
  - FTSE MPF Japan Index
  - FTSE MPF USA Index
  - FTSE MPF Asia Pacific ex Japan Index
  - FTSE MPF Asia Pacific ex Japan & Hong Kong Index
  - FTSE MPF Asia Pacific ex Japan ex Hong Kong ex China Index
  - FTSE MPF Asia Pacific ex Japan, Australia & New Zealand Index
  - FTSE MPF Asia Pacific ex Japan incl. HSBC Index
  - FTSE MPF Europe Index
  - FTSE MPF North America Index
  - FTSE MPF All-World Index
  - FTSE MPF All-World ex US Index
  - FTSE MPF Developed Index
  - FTSE MPF Emerging Index
- 1.5 The FTSE MPF Index Series is currency hedged back into Hong Kong dollars, as required to meet the regulations of the Mandatory Provident Fund. Full details of the currency hedging methodology are contained in Appendix C.
- 1.6 The FTSE MPF Index Series is calculated daily.

- 1.7 The base currency of the benchmark is Hong Kong dollars. Index values may also be published in other currencies.
- 1.8 Capital and Total Net Return indices are available. The Total Net Return indices are calculated based on actual tax rates applicable to MPF schemes. For details on the tax rates used for each country, please contact FTSE Russell.
- 1.9 **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 MTSNext Limited), Mergent, Inc., FTSE Fixed Income LLC, The Yield Book Inc and Beyond Ratings.
- 1.10 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.
- 1.11 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, and/or
  - any errors or inaccuracies in these Ground Rules, and/or
  - any non-application or misapplication of the policies or procedures described in these Ground Rules, and/or
  - any errors or inaccuracies in the compilation of the index series or any constituent data.



## Section 2

# Management Responsibilities

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## 2.0 Management Responsibilities

### 2.1 FTSE International Limited (FTSE)

2.1.1 FTSE is the benchmark administrator of the index series.<sup>1</sup>

2.1.2 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 the periodic 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.

### 2.2 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 meet the current and future requirements of investors and other index users. Any proposals for significant amendments to these Ground Rules will be subject to consultation with FTSE Russell advisory committees and other stakeholders if appropriate. The feedback from these consultations will be considered by the FTSE Russell Product Governance Board before approval is granted.

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<sup>1</sup> FTSE is not the benchmark administrator of the Index Series as the term administrator is defined in the [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 and Complaints

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

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

#### 3.2 Index Policy for Trading Halts and Market Closures

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

[Index Policy for Trading Halts and Market Closures.pdf](#)

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

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

[Index Policy in the Event Clients are Unable to Trade a Market.pdf](#)

#### 3.4 Policy for Benchmark Methodology Changes

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

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

#### 3.5 FTSE Russell Governance Framework

3.5.1 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

# Eligible Securities

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### 4.0 Eligible Securities

4.1 Each security must be a current constituent of the FTSE All-World Index. Some country or regional indices in the FTSE MPF Index Series will include the Hong Kong listed line of the same company included in the FTSE All-World Index. Please refer to Appendix A for details.

A non-constituent P Chip whose associated N Share is already a constituent of the FTSE All-World Index will be eligible for inclusion in the FTSE MPF Index Series at the next quarterly review after a minimum 3-month trading period, subject to satisfying all other FTSE All-World Index eligibility criteria. Please note the P Chip will be subject to the FTSE All-World minimum liquidity requirement and will be tested in line with FTSE All-World Semi-Annual Review.

4.2 The investability weighting of an individual constituent is the same as in the FTSE All-World Index, based on the appropriate investment screens and free float weighting of that Index (see Rule 6.4 for constituent capping).

4.2.1 The investability weighting of China A Shares (available under the Northbound China Stock Connect Scheme) follows the same inclusion treatment for China A Shares in the FTSE All-World Index. Currently, 25% of each China A Share's investability weight is included.

4.2.2 For the FTSE MPF China A Index, 25% of each China A Share's investability weight is applied currently and throughout index history.

4.3 Please refer to the FTSE Global Equity Index Series Ground Rules available from FTSE Russell for more information on the FTSE All-World Index.

4.4 In order to reflect the Mandatory Provident Fund Schemes Authority (MPFA) [Guidelines III.2 on Equities and Other Securities](#) and Schedule 1 to the Mandatory Provident Fund Schemes (General) Regulation, FTSE Russell will apply the following screens to determine the eligible securities to be included in the FTSE MPF Index Series.

4.5 Securities admitted to trading and listing on Stock Exchanges that are not approved by the Mandatory Provident Fund Schemes Authority (MPFA) will be excluded from the calculation of the FTSE MPF Index Series. Please see [MPFA Guideline III.4 for a list of Approved Exchanges](#). The list of Approved Exchanges as at November 2020 is reproduced in Appendix B. The list published by MPFA on its website is the definitive list of Approved Exchanges for the purpose of these Ground Rules.

4.6 Fully-paid up shares listed on an Approved Exchange will be eligible for inclusion.

- 4.7 All stapled securities, including paired shares, split shares, linked units or any other terms conventionally used in local markets, which represent an arrangement under which two or more securities are quoted jointly will not be eligible for index inclusion unless the securities themselves are permissible under Section 8(1) of Schedule 1 to the MPFS General Regulation.
- 4.8 Real Estate Investment Trusts (REITs) will be eligible for inclusion provided they are authorised by the Hong Kong Securities and Futures Commission (SFC) or listed on an approved exchange in the countries of Australia, the United Kingdom or the United States of America. In addition, such REITs must meet all the other eligibility requirements in this Section. Specifically, mortgage REITs and timber REITs as shown in below table will be excluded to align with the MPFA definition of REITs under [MPFA Guidelines III.2](#).

#### Ineligible New Industry Classification Benchmark (NICB) Subsectors

NICB Subsector Code	NICB Subsector Name
30203000	Mortgage REITs: Diversified
30203010	Mortgage REITs: Commercial
30203020	Mortgage REITs: Residential
35102060	Timber REITs

#### [ICB\\_Rules\\_new.pdf](#)

A List of SFC authorised REITs is available at:

<http://www.sfc.hk/productlistWeb/searchProduct/REIT.do?lang=EN>

- 4.9 Securities which are receipts or certificates entitling the holders to the economic benefits (which may or may not include voting rights) of ownership of the underlying shares of a single company will be eligible if i) the receipts or certificates are fully paid up and do not require further or future payment, and ii) the underlying shares of the company are fully-paid up, and iii) both the receipts/certificates and the underlying shares of the company are listed on Approved Exchanges.
- 4.10 Fully-paid up depository receipts (certificaten van aandelen) listed on Euronext Amsterdam and non-voting equity securities (NES) issued by Roche Holdings Limited listed on SIX Swiss Exchange are eligible as these are approved securities under the MPFA Guidelines.
- 4.11 American Depository Receipts (ADRs) and Global Depository Receipts (GDRs) which are listed on an Approved Exchange will be eligible for inclusion if the respective underlying shares are fully-paid up and are themselves listed on an Approved Exchange.
- 4.12 CHESS Depository Interest (CDIs) listed on the Australian Securities Exchange will be eligible for inclusion if the respective underlying shares are fully-paid up and are listed on a foreign (i.e. outside Australia) Approved Exchange.
- 4.13 Non-Voting Depository Receipts (NVDRs) listed on the Stock Exchange of Thailand will be eligible for inclusion if the respective underlying shares (but not warrants or transferable subscription rights) are fully-paid up and are listed on the same stock exchange.
- 4.14 Unit trusts, mutual funds, and any collective closed-end or open-end investment schemes will not be eligible for inclusion as they are not fully permissible under the MPF regulation.





## Section 5

# Index Qualification Criteria

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### **5.0 Index Qualification Criteria**

- 5.1 Companies are included in the appropriate FTSE MPF Indices based on the same criteria as the FTSE All-World Index, if they pass the eligibility screening in Section 4.
- 5.2 A full description of the FTSE MPF Indices is listed in Appendix A.



## Section 6

# Periodic Review of Constituents

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### 6.0 Periodic Review of Constituents

- 6.1 The FTSE MPF Index Series is usually reviewed semi-annually in March and September, on a region by region basis as part of the reviews of the FTSE All-World Index Series on the same dates, based on data after the close of business on the last business day of December and June.
- 6.2 Any constituent changes resulting from the semi-annual reviews are implemented after the close of business on the third Friday (i.e. effective Monday) of March and September.
- 6.3 IPOs from all regions (which failed to qualify as fast entrants) will be reviewed in June and December, besides being reviewed at semi-annual reviews. Any constituent changes resulting from the June and December reviews are implemented after the close of business on the third Friday (i.e. effective Monday) of June and December.
- 6.4 All FTSE MPF Indices are subject to a 9% capping so that no constituent accounts for more than 9% of the index on a monthly basis. This is in line with the SFC Code on Unit Trusts and Mutual Funds.
- 6.5 The constituents of the FTSE MPF Indices are capped monthly at 9% using prices adjusted for corporate actions as at the close of business on the second Friday of each month. The capping is implemented after the close of business on the third Friday of each month based on the constituents, shares in issue and free float on the next trading day following the third Friday of each month.



## Section 7

# Changes to Constituent Companies

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### 7.0 Changes to Constituent Companies

#### 7.1 Removal

7.1.1 If a constituent ceases to be a constituent of the FTSE All-World Index Series it will be removed from the FTSE MPF Index Series. The removal will be concurrent with its removal from the FTSE All-World Index. In addition, if a constituent becomes ineligible under the current or any new Hong Kong Mandatory Provident Fund regulations, it will be removed as soon as practical after giving users of the index sufficient notification of the changes before their implementation.

#### 7.2 Additions

7.2.1 If a constituent is added to the FTSE All-World Index Series it will be included in the FTSE MPF Index Series if it passes the eligibility screening in Section 4. The inclusion in the FTSE MPF Index Series will be concurrent with its inclusion in the FTSE All-World Index.

#### 7.3 New issues

7.3.1 All fast entries to the FTSE All-World Index Series will become members of the FTSE MPF Index Series if they pass the eligibility screening in Section 4. The constituent will be added to the FTSE MPF Index Series concurrent with its inclusion in the FTSE All-World Index.



## Section 8

# Currency Hedging

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### 8.0 Currency Hedging

- 8.1 To comply with the Hong Kong Mandatory Provident Fund regulations, the FTSE MPF Index Series is hedged back into Hong Kong dollars, if necessary.
- 8.2 The regulations stipulate that at least 30% of a fund's exposure must be to Hong Kong dollar risk assets. The index series will hedge non-Hong Kong dollar currency exposure in the indices in excess of 65% to ensure they stay well within the regulations.
- 8.3 The percentage of a fund's exposure to the Hong Kong dollar will be reviewed twice a year at the same time as the FTSE All-World Index review in March and September to determine if the index needs to be hedged in the coming six months. At each review if it is decided to hedge, a hedging factor (see Appendix C for definition) will also be calculated and then carried forward until the next review.
- 8.4 The following indices do not require currency hedging since their exposure to Hong Kong dollar assets will normally exceed 30%:
- FTSE MPF Hong Kong Index
  - FTSE MPF Domestic Hong Kong Index
  - FTSE MPF China Index
  - FTSE MPF Greater China Index
- 8.5 The following indices will have their non-Hong Kong dollar exposure in excess of 65% hedged back into Hong Kong dollars, if necessary.
- FTSE MPF China A Index
  - FTSE MPF Japan Index
  - FTSE MPF USA Index
  - FTSE MPF Asia Pacific ex Japan Index
  - FTSE MPF Asia Pacific ex Japan & Hong Kong Index
  - FTSE MPF Asia Pacific ex Japan ex Hong Kong ex China Index
  - FTSE MPF Asia Pacific ex Japan, Australia & New Zealand Index
  - FTSE MPF Asia Pacific ex Japan incl. HSBC Index
  - FTSE MPF Europe Index
  - FTSE MPF North America Index
  - FTSE MPF All-World Index
  - FTSE MPF All-World ex US Index
  - FTSE MPF Developed Index
  - FTSE MPF Emerging Index

- 8.6 The currency hedged indices are calculated daily using one-month forward currency rates. Due to the lack of liquidity in some Hong Kong dollar forward currency rates, all hedging is calculated as a two stage process. The respective foreign currency is first hedged into the United States dollar and then hedged from the US dollar to Hong Kong dollar.
- 8.7 For regional indices currency hedging is calculated at the underlying country/currency level.
- 8.8 Full details of the currency hedging methodology is described in Appendix C.



## Appendix A: Details of Indices Calculated

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- 1.0 The FTSE MPF Index Series is based on the FTSE All-World Index Series, subject to eligibility screening in Section 4. Some base indices of the FTSE MPF indices are identical to the FTSE All-World indices; others have been adapted to meet the specific needs of the Mandatory Provident Funds, as follows:
- 1.1 FTSE MPF Hong Kong Index includes constituents in FTSE MPF Domestic Hong Kong Index and Hong Kong listed China securities:
- HSBC (the Hong Kong listed line)
  - Hong Kong Companies
  - Red Chips
  - P Chips<sup>5</sup>
  - H Shares
- 1.2 FTSE MPF Domestic Hong Kong Index includes:
- HSBC (the Hong Kong listed line)
  - Hong Kong Companies
- 1.3 FTSE MPF China Index includes:
- Red Chips
  - P Chips<sup>7</sup>
  - H Shares
  - A Shares (from March 2021 review)
  - B Shares (from March 2021 review)
- 1.4 FTSE MPF China A Index includes:
- A Shares (available under the Northbound China Stock Connect Scheme)
- 1.5 FTSE MPF Greater China Index includes:
- HSBC (the Hong Kong listed line)
  - Hong Kong Companies
  - Red Chips
  - P Chips<sup>7</sup>
  - H Shares
  - A Shares (from March 2021 review)

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<sup>5</sup> A newly eligible P Chip whose associated N Share is already a constituent of the FTSE All-World Index will be eligible for inclusion in the FTSE MPF Index Series at the next quarterly review after a minimum 3-month trading period.

B Shares (from March 2021 review)  
Companies listed on the Taiwan Stock Exchange

- 1.6 FTSE MPF Asia Pacific ex Japan & Hong Kong Index includes constituents in FTSE MPF Asia Pacific ex Japan Index but excludes constituents in FTSE MPF Hong Kong Index.<sup>6</sup>
- 1.7 All constituents within the FTSE MPF Index Series must be listed on eligible exchanges approved by MPFA as listed in Appendix B.
- 1.8 All constituents within the FTSE MPF Index Series are subject to a 9% capping on a monthly basis so that no constituent accounts for more than 9% of the index.

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<sup>6</sup> For clarification purpose, FTSE MPF Asia Pacific ex Japan ex Hong Kong ex China Index is based on FTSE Asia Pacific ex Japan ex Hong Kong ex China Index under FTSE All-World Index Series.

## Appendix B: Exchanges Approved by MPFA<sup>7</sup>

### List of Approved Stock Exchanges<sup>8</sup>

Country	Stock Exchange
Australia	Australian Securities Exchange*
Austria	Vienna Stock Exchange*
Belgium	Euronext Brussels*
Brazil	B3 S.A. – Brasil, Bolsa, Balcao*
Canada	Toronto Stock Exchange*
Denmark	Nasdaq Copenhagen*
China <sup>10</sup>	Shanghai Stock Exchange* Shenzhen Stock Exchange*
Finland	Nasdaq Helsinki*
France	Euronext Paris*
Germany	Frankfurt Stock Exchange*
Greece	Athens Stock Exchange*
Hong Kong	Stock Exchange of Hong Kong*
India <sup>9</sup>	National Stock Exchange of India* BSE
Ireland	Euronext Dublin*
Indonesia <sup>10</sup>	Indonesia Stock Exchange*
Israel	Tel-Aviv Stock Exchange*
Italy	Borsa Italiana*
Japan	Tokyo Stock Exchange* Nagoya Stock Exchange
Luxembourg	Luxembourg Stock Exchange*
Malaysia	Bursa Malaysia*
Mexico	Mexican Stock Exchange*
Netherlands	Euronext Amsterdam*
New Zealand	NZX*
Norway	Oslo Børs*
Philippines <sup>10</sup>	Philippine Stock Exchange*

<sup>6</sup> As at November 2020.

<sup>7</sup> [http://www.mpfa.org.hk/eng/legislation\\_regulations/legulations\\_ordinance/guidelines/current\\_version/investment/files/Annex\\_A\\_to\\_III\\_4.pdf](http://www.mpfa.org.hk/eng/legislation_regulations/legulations_ordinance/guidelines/current_version/investment/files/Annex_A_to_III_4.pdf)



Country	Stock Exchange
Poland <sup>10</sup>	Warsaw Stock Exchange*
Portugal	Euronext Lisbon*
Singapore	Singapore Exchange Securities Trading*
South Africa	Johannesburg Stock Exchange*
South Korea	Korea Exchange*
Spain	Madrid Stock Exchange*
Sweden	Nasdaq Stockholm*
Switzerland	SIX Swiss Exchange*
Taiwan	Taiwan Stock Exchange*
Thailand	Stock Exchange of Thailand*
United Kingdom	London Stock Exchange*
	NYSE American*
	Cboe BZX Exchange*
United States of America	Nasdaq Stock Market*
	New York Stock Exchange*
	NYSE Arca
	Nasdaq PHLX

Source: MPFA website

\*Eligible exchange in the FTSE All-World Index, the underlying index of the FTSE MPF Index Series

<sup>8</sup> India added to the FTSE MPF Indices as an approved MPFA market in March 2010

<sup>10</sup> Philippines added to the FTSE MPF Indices as an approved MPFA market in September 2015.

<sup>10</sup> China, Indonesia and Poland will be added to the FTSE MPF Indices as an approved MPFA market in March 2021.

## Appendix C: Currency Hedging Methodology

The FTSE Russell currency hedging methodology, as explained in Rule 8.2, allows exposure to non-Hong Kong dollar risk assets in the Index to behave like an investment fund hedged in accordance with the Hong Kong Mandatory Provident Fund regulations.

The indices hedge each currency in two stages. The first stage calculates the impact of hedging for each country; the second stage applies this calculation to the hedged index.

The index series is calculated daily.

### Impact of Hedging

$$\text{Impact of Hedging} = \frac{\sum_{i=1}^n \left( Mcap_i C_{t+1} * HF * \left( \frac{S_{t+1}}{FIR} - \frac{S_{t+1}}{S_{t+2}} \right) \right)}{\sum_{i=1}^n Mcap_i C_{t+1}}$$

The impact of hedging weights each country by market capitalisation and calculates the hedged gain or loss at the current calculation date.

Where:-

$Mcap_i C_{t+1}$  = Country index market capitalisation at the close of the previous hedging period

$S_{t+1}$  = Spot exchange rate at the close of the previous hedging period

$S_{t+2}$  = Spot exchange rate at the close of the current calculation date

$FIR$  = Forward interpolated rate

$HF$  = Hedging factor. This is the proportion of the country index market capitalisation to be hedged as determined in the semi-annual review. It is defined as follows:

$$\text{Hedging Factor} = \frac{\max(0.35 - W_{HKD}, 0)}{1 - W_{HKD}}$$

Where:

$W_{HKD}$  = Aggregate Hong Kong dollar exposure of the index as of the semi-annual review. It is calculated using prices as of close of the day before the last business day of the review month and index constituents available after the close of business on the last business day of the review month.

## Hedged Capital Index

$$\text{Hedged Capital Index} = HI_{t+1} * \left( \frac{UI_{t+2}}{UI_{t+1}} + IH \right)$$

The capital hedged index is derived from the unhedged capital index performance (as outlined in the Guide to Calculation for the FTSE Global Equity Index Series) and the impact of hedging at the current calculation date.

Where:-

- $HI_{t+2}$  = Hedged Capital index at the close of the previous hedging period
- $UI_{t+1}$  = Unhedged Capital index at the close of the previous hedging period
- $UI_{t+2}$  = Unhedged Capital index at the close of the current calculation date
- $IH$  = Impact of hedging

## Hedged Total Net Return Index

$$\text{Hedged Total Net Return index} = HTRI_{t+1} * \left( \frac{UTRI_{t+2}}{UTRI_{t+1}} + IH \right)$$

The hedged Total Net Return index is derived from the unhedged Total Net Return index performance (as outlined in the Guide to Calculation for the FTSE Global Equity Index Series) and the impact of hedging at the current calculation date.

Where:-

- $HTRI_{t+1}$  = Hedged Total Net Return index at the close of the previous hedging period
- $UTRI_{t+1}$  = Unhedged Total Net Return index at the close of the previous hedging period
- $UTRI_{t+2}$  = Unhedged Total Net Return index at the close of the current calculation date
- $IH$  = Impact of hedging

## Forward Rates and Spot Rates

FTSE Russell will use one month WM Refinitiv 16:00 hours London Time mid price forward rates in its currency hedged indices calculation. All rates are the last working day of the relevant market month direct USD quotes. Spot rates that are used in the currency hedging calculation are WM/Refinitiv Closing Spot Rates, compiled by Refinitiv.

## Forward Interpolated Rates

$$\text{Forward Interpolated Rates} = F_{t+1} + \left( \frac{(S_{t+1} - F_{t+1})(N_{d-t})}{N_d} \right)$$

Forward interpolated rates enable FTSE Russell to value a forward contract on a particular inter month period. They do this by calculating the spot/forward discount/premium at the beginning of the contract period, and then discount this over the life of the contract.

- $N_{d-t}$  = Number of days left of forward contract
- $N_d$  = Number of days of forward contract
- $F_{t+1}$  = The forward contract (rate) bought at the close of the previous hedging period
- $S_{t+1}$  = Spot rate at the close of the previous hedging period

In the example below an index has been created that comprises of Canada, and the United States. The example is a capital index in Hong Kong Dollars where each country is 35 per cent hedged into Hong Kong Dollars. The index is based on a period of one calendar month.

<b>Unhedged Index Values (Hong Kong Dollars)</b>			
	<b>31-10-2003</b>	<b>14-11-2003</b>	<b>28-11-2003</b>
Unhedged Index	100.0000	99.9985	100.9567

<b>Country Index Market Capitalisation (HKDm)</b>	
	<b>31-10-2003</b>
Canada	3,350,967.3560
USA	78,576,567.7322

<b>Spot Rates</b>			
	<b>31-10-2003</b>	<b>14-11-2003</b>	<b>28-11-2003</b>
CAD/HKD	0.1697	0.1678	0.1674
USD/HKD	0.1288	0.1289	0.1288

<b>Forward Interpolated Rates</b>		
	<b>14-11-2003</b>	<b>28-11-2003</b>
CAD/HKD	0.1699	0.1701
USD/HKD	0.1288	0.1289

#### Impact of Hedging (inter month calculation)

The example below is based on calculating the impact of hedging for the 14 November.

$$\text{Impact of Hedging} = \frac{\sum_{i=1}^n \left( \text{Mcap}_i C_{t+1} * 0.35 * \left( \frac{S_{t+1}}{\text{FIR}} - \frac{S_{t+1}}{S_{t+2}} \right) \right)}{\sum_{i=1}^n \text{Mcap}_i C_{t+1}}$$

Where:-

$$\frac{\left( 3,350,967.3560 * 0.35 * \left( \frac{0.1697}{0.1699} - \frac{0.1697}{0.1678} \right) \right) + \left( 78,576,567.7322 * 0.35 * \left( \frac{0.1288}{0.1288} - \frac{0.1288}{0.1289} \right) \right)}{3,350,967.3560 + 78,576,567.7322}$$

$$= \frac{-14,660.6776 + 21,335.7632}{3,350,967.3560 + 78,576,567.7322} = 0.0001$$

#### Forward Interpolated Rates (inter month calculation)

$$\text{Forward Interpolated Rates} = F_{t+1} + \left( \frac{(S_{t+1} - F_{t+1})(N_{d-t})}{N_d} \right)$$

Where:-

$$N_{d-t} = 14$$

$$N_d = 28$$

$$F_{t+1} = \text{CAD/HKD } 0.1701$$

$$S_{t+1} = \text{CAD/HKD } 0.1697$$

$$\text{Forward Interpolated Rates} = 0.1701 + \left( \frac{(0.1697 - 0.1701)(14)}{28} \right) = 0.1699$$

### Hedged Index (inter month calculation)

$$\begin{aligned} \text{Hedged Index} &= HI_{t+1} * \left( \frac{UI_{t+2}}{UI_{t+1}} + IH \right) \\ &= 100.0000 * \left( \frac{99.9985}{100.0000} + 0.0001 \right) \\ &= 100.0085 \end{aligned}$$

### Impact of Hedging (end of month calculation)

The impact of hedging calculation below is based on the last working day of the calendar month.

$$\text{Impact of Hedging} = \frac{\sum_{i=1}^n \left( Mcap_i C_{t+1} * 0.35 * \left( \frac{S_{t+1}}{FIR} - \frac{S_{t+1}}{S_{t+2}} \right) \right)}{\sum_{i=1}^n Mcap_i C_{t+1}}$$

Where:-

$$\begin{aligned} &\frac{\left( 3,350,967.3560 * 0.35 * \left( \frac{0.1697}{0.1701} - \frac{0.1697}{0.1674} \right) \right) + \left( 78,576,567.7322 * 0.35 * \left( \frac{0.1288}{0.1289} - \frac{0.1288}{0.1288} \right) \right)}{3,350,967.3560 + 78,576,567.7322} \\ &= \frac{-18,872.2674 + (-21,335.7632)}{3,350,967.3560 + 78,576,567.7322} = -0.0005 \end{aligned}$$

### Hedged Index (end of month calculation)

$$\begin{aligned} \text{Hedged Index} &= HI_{t+1} * \left( \frac{UI_{t+2}}{UI_{t+1}} + IH \right) \\ &= 100.0000 * \left( \frac{100.9567}{100.0000} - 0.0005 \right) \\ &= 100.9067 \end{aligned}$$



## Appendix D: Further Information

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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 MPF Index Series Ground Rules 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).

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