

**GROUND RULES FOR THE  
MANAGEMENT OF THE  
  
FTSE RAFI  
(Research Affiliates Fundamental Index)  
INDEX SERIES**



**FTSE**

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## SECTION 1

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### 1.0 INTRODUCTION

- 1.1 This paper sets out the methodology for the management of the FTSE RAFI Index Series, which is calculated in association with Research Affiliates, LLC.
- 1.2 The FTSE RAFI Index Series weights index constituents using specific fundamental factors (see Section 5), rather than market capitalisation. Therefore at review constituent weights are not based on price valuations established by the market.
- 1.3 The following indices are calculated:

#### Global & Regional Indices:

- FTSE RAFI All-World 3000 Index
- FTSE RAFI BRIC Index
- FTSE RAFI Developed 1000 Index\*
- FTSE RAFI Developed Asia Pacific ex Japan Index\*
- FTSE RAFI Developed Asia Pacific ex Japan Mid Small Index\*
- FTSE RAFI Developed Europe Mid Small Index\*
- FTSE RAFI Developed ex US 1000 Index \*
- FTSE RAFI Developed ex US Mid Small 1500 Index\*
- FTSE RAFI Developed Mid Small 1500 Index\*
- FTSE RAFI Emerging Index\*
- FTSE RAFI Europe ex UK & Switzerland Index
- FTSE RAFI Europe ex UK Index
- FTSE RAFI Europe Index \*
- FTSE RAFI Eurozone Index \*
- FTSE RAFI Kaigai 1000 Index
- FTSE RAFI Nordic Index \*
- FTSE RAFI North America Index
- FTSE RAFI Real Estate US 100 Index
- FTSE RAFI Real Estate Global ex US Index

#### Country Indices:

- FTSE RAFI Developed ex US 1000 Country Indices
  - FTSE RAFI Australia Index
  - FTSE RAFI Austria Index
  - FTSE RAFI Belgium/Luxembourg Index
  - FTSE RAFI Canada Index \*
  - FTSE RAFI Denmark Index
  - FTSE RAFI Finland Index
  - FTSE RAFI France Index
  - FTSE RAFI Germany Index
  - FTSE RAFI Greece Index
  - FTSE RAFI Hong Kong/China Index
  - FTSE RAFI Ireland Index
  - FTSE RAFI Israel Index
  - FTSE RAFI Italy Index
  - FTSE RAFI Japan Index (also available in CAD) \*
  - FTSE RAFI Korea Index
  - FTSE RAFI Netherlands Index
  - FTSE RAFI New Zealand Index
  - FTSE RAFI Norway Index
  - FTSE RAFI Portugal Index
  - FTSE RAFI Singapore Index

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- FTSE RAFI Spain Index
- FTSE RAFI Sweden Index
- FTSE RAFI Switzerland Index
- FTSE RAFI UK Index
- FTSE RAFI Hong Kong/China 80 Net Index
- FTSE RAFI India 50 Index \*
- FTSE RAFI Italy 30 Index \*
- FTSE RAFI Japan 350 Index \*
- FTSE RAFI UK 100 Index \*
- FTSE RAFI UK 300 Index \*
- FTSE RAFI US 1000 Index \* (a currency hedged version is also available)
- FTSE RAFI US 2000 Index \*
- FTSE RAFI US 2500 Index
- FTSE RAFI US 3000 Index \*
- FTSE RAFI US Industry Indices \*
  - FTSE RAFI US 1000 Index - Basic Materials
  - FTSE RAFI US 1000 Index - Consumer Goods
  - FTSE RAFI US 1000 Index - Consumer Services
  - FTSE RAFI US 1000 Index - Financials
  - FTSE RAFI US 1000 Index - Health Care
  - FTSE RAFI US 1000 Index - Industrials
  - FTSE RAFI US 1000 Index - Oil & Gas
  - FTSE RAFI US 1000 Index - Utilities
  - FTSE RAFI US 1000 Index - Telecommunications & Technology
- FTSE RAFI US Mid Small 1500 Index \*
- FTSE RAFI US Small 500 Index
- FTSE/JSE RAFI 40 Index \*
- FTSE/JSE RAFI All Share Index \*
- FTSE/JSE RAFI All Share Capped Index \*

1.4 Price and Total Return values are calculated for all the FTSE RAFI Indices on an end of day basis. Price Index values are also calculated in real time for those Indices marked with an asterisk (\*) in Rule 1.3 above.

1.5 Unless specifically detailed in this document, all areas of the methodology regarding the management of the FTSE RAFI Index Series are related to the FTSE Global Equity Index Series Ground Rules. The FTSE RAFI Indices methodology should therefore be read in conjunction with the FTSE Global Equity Index Series Ground Rules. These rules are available on [www.ftse.com](http://www.ftse.com).

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## SECTION 2

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### 2.0 STATUS OF INDICES

2.1 Price Indices are calculated on a real-time basis may exist in the following states:

a) Firm

The Indices are being calculated during Official Market Hours (see Appendix A). No message will be displayed against the Index values calculated by FTSE.

b) Closed

The Indices have ceased all calculations for the day. The message 'CLOSE' will be displayed against the Index values calculated by FTSE.

c) Held

During Official Market Hours, Indices have exceeded pre-set operating parameters and the calculations have been suspended pending resolution of the problem. The message 'HELD' will be displayed against the last Index values calculated by FTSE.

d) Indicative

If there is a system problem or a situation in the market that is judged to affect the quality of the constituent prices at any time when the Indices are being calculated, the Indices will be declared indicative (e.g. normally where a 'fast market' exists in the equity market). The message 'IND' will be displayed against the Index values calculated by FTSE.

e) Part

If the Indices are being calculated during normal Official Index Period hours, but there are less than 75% of the constituents by capitalisation available with firm prices, then the index will be displayed with the message 'PART' to indicate that only a proportion of the securities prices are included. With the exception of the message 'PART', the index will continue to be calculated and displayed as if it were firm.

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

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## SECTION 3

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### 3.0 INDEX MANAGEMENT

3.1 FTSE is responsible for the calculation of the FTSE RAFI Index Series. FTSE will maintain records of the weightings of all constituents and will make changes to the constituents and their weightings in accordance with this methodology. FTSE will implement constituent changes resulting from the annual review, or as otherwise required by this methodology.

#### 3.2 Re-calculations

3.2.1 The FTSE RAFI Index Series is recalculated whenever errors or distortions occur that are deemed to be significant. Users of the FTSE RAFI Index Series are notified through appropriate media.

#### 3.3 Status of these Ground Rules

3.3.1 These Ground Rules are a guide to the policies and procedures applying at the date of publication to the operation and maintenance of the FTSE RAFI Index Series. They have been prepared and approved by the FTSE. However, these policies and procedures, and their precise application, are subject to variation and periodic review.

3.3.2 The purpose of publishing this guide is to provide information about the general basis on which decisions relating to the calculation and publication of the FTSE RAFI Index Series are currently made.

3.3.3 In light of the intended purpose of this guide, and the likely variation and periodic review of the policies and procedures it contains, no liability whether as a result of negligence or otherwise is accepted by FTSE or Research Affiliates (or any person concerned with the preparation or publication of this guide) for any losses, damages, claims and expenses suffered by any person as a result of:

- a) any reliance on this guide, and/or
- b) any errors or inaccuracies in this guide, and/or
- c) any non-application or misapplication of the policies or procedures described in this guide, and/or
- d) any errors or inaccuracies in the compilation or any constituent data.

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### 4.0 ELIGIBLE SECURITIES

#### 4.1 Global & Regional Indices

##### 4.1.1 FTSE RAFI All-World 3000 Index

The FTSE RAFI All-World 3000 Index will consist of the 3000 companies with the largest RAFI fundamental values, selected from the constituents of the FTSE Global Equity Index subject to the following country eligibility rule (Rule 4.1.1a).

##### 4.1.1a FTSE RAFI All-World 3000 Index - Country Eligibility Rule

A country classified by FTSE as Developed and Emerging is eligible.

For the emerging countries, eligibility is dependent on the country being a constituent of the FTSE RAFI Emerging Index (see Rule 4.1.10a).

Only securities from the eligible countries will be eligible for any FTSE RAFI Index.

##### 4.1.2 FTSE RAFI BRIC Index

The FTSE RAFI BRIC Index will consist of the top 50 companies with the largest RAFI fundamental values, selected from the BRIC constituents (Brazil, Russia, India and China) of the FTSE Global All Cap Index Series. For China, the only eligible companies will be H Shares of the FTSE China All Cap Index and Red Chip Shares of the FTSE Hong Kong All Cap Index.

##### 4.1.3 FTSE RAFI Developed 1000 Index

The FTSE RAFI Developed 1000 Index will consist of the 1000 companies with the largest RAFI fundamental values, selected from the constituents of the FTSE Developed All Cap Index.

##### 4.1.4 FTSE RAFI Developed Asia Pacific ex Japan Index

The FTSE RAFI Developed Asia Pacific ex Japan Index will consist of the constituents of the following countries from the FTSE RAFI Developed ex US 1000 Index: Australia, Hong Kong SAR, New Zealand, Singapore and South Korea.

##### 4.1.5 FTSE RAFI Developed Asia Pacific ex Japan Mid Small Index

The FTSE RAFI Developed Asia Pacific ex Japan Mid Small Index will be based on the following countries from the FTSE RAFI Developed ex US Mid Small 1500 Index: Australia, Hong Kong SAR, New Zealand, Singapore and South Korea.

##### 4.1.6 FTSE RAFI Developed Europe Mid Small Index

The FTSE RAFI Developed Europe Mid Small Index will be based on the European countries in the FTSE RAFI Developed ex US Mid Small 1500 Index.

##### 4.1.7 FTSE RAFI Developed Mid Small 1500 Index

The FTSE RAFI Developed 1500 Mid Small Index will consist of the next 1500 companies with the largest RAFI fundamental values after the FTSE RAFI Developed 1000 Index. Both Indices are selected from the constituents of the FTSE Developed All Cap Index.

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### 4.1.8 FTSE RAFI Developed ex US 1000 Index

The FTSE RAFI Developed ex US 1000 Index will consist of the 1000 non US-listed companies with the largest RAFI fundamental values, selected from the constituents of the FTSE Developed All Cap ex US Index. From March 2008, the annual review will be based on the FTSE Developed All Cap ex US Index. Prior to March 2008, the universe is based on the FTSE Developed ex US Index. Country sub-indices are calculated in line with the FTSE RAFI Developed ex US 1000 Index.

### 4.1.9 FTSE RAFI Developed ex US Mid Small 1500 Index

The FTSE RAFI Developed ex US Mid Small 1500 Index will consist of the next 1500 companies with the largest RAFI fundamental values after the FTSE RAFI Developed ex US 1000 Index (see Rule 4.1.6 above).

### 4.1.10 FTSE RAFI Emerging Index

The FTSE RAFI Emerging Index will consist of the 350 companies with the largest RAFI fundamental values, selected from the constituents of the FTSE Emerging All Cap Index subject to the following country eligibility rule (Rule 4.1.10a).

#### 4.1.10a FTSE RAFI Emerging Index - Country Eligibility Rule

A country classified by FTSE as Emerging is eligible depending on the ratio of the sum of fundamental scores of the securities in the FTSE RAFI Emerging universe from that country to the sum of the fundamental scores of all the securities in the FTSE RAFI Emerging universe. The country is eligible for inclusion if this ratio exceeds 1.5%. Any eligible countries currently in the index will remain eligible if this ratio exceeds 0.5. Any country will not be eligible if it fails these criteria.

### 4.1.11 FTSE RAFI Europe ex UK Index

The FTSE RAFI Europe ex UK Index will consist of all the constituents from each European country in the FTSE RAFI Developed ex US 1000 Index, excluding the UK.

### 4.1.12 FTSE RAFI Europe ex UK & Switzerland Index

The FTSE RAFI Europe ex UK & Switzerland Index will consist of all the constituents from each European country in the FTSE RAFI Developed ex US 1000 Index, excluding the UK and Switzerland.

### 4.1.13 FTSE RAFI Europe Index

The FTSE RAFI Europe Index will consist of all the constituents from each European country in the FTSE RAFI Developed ex US 1000 Index.

### 4.1.14 FTSE RAFI Eurozone Index

The FTSE RAFI Eurozone Index will consist of all the constituents from each Euro denominated country in the FTSE RAFI Developed ex US 1000 Index.

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### 4.1.15 FTSE RAFI Kaigai 1000 Index

The FTSE RAFI Kaigai 1000 Index will consist of the 1000 non Japan-listed companies with the largest RAFI fundamental values, selected from the constituents of the FTSE Developed ex Japan All Cap Index. From March 2008, the annual review will be based on the FTSE Developed ex Japan All Cap Index. Prior to March 2008, the universe is based on the FTSE Developed ex Japan Index.

### 4.1.16 FTSE RAFI Nordic Index

The FTSE RAFI Nordic Index will consist of all the constituents from the Nordic Region in the FTSE RAFI Developed ex US 1000 Index. The Index will contain the following countries: Denmark, Finland, Norway and Sweden.

### 4.1.17 FTSE RAFI North America Index

The FTSE RAFI North America Index will consist of the FTSE RAFI US 1000 Index and the FTSE RAFI Canada Index constituents. The FTSE RAFI Canada Index will consist of all the Canadian companies from the FTSE RAFI Developed ex US 1000 Index.

### 4.1.18 FTSE RAFI Real Estate US 100 Index

The FTSE RAFI Real Estate US 100 Index will consist of the 100 US companies with the largest RAFI fundamental values, selected from the constituents of the FTSE USA All Cap Index that are classified by the Industry Classification Benchmark (ICB) as Real Estate (8600). Please note that the FTSE RAFI Real Estate US 100 Index has been designed applying a real estate orientated fundamental value calculation. Please refer to Rule 5.4 for further details.

### 4.1.19 FTSE RAFI Real Estate Global ex US Index

The FTSE RAFI Real Estate Global ex US Index will consist of the 150 companies with the largest RAFI fundamental values, selected from the constituents of the FTSE Global ex US All Cap Index that are classified by the Industry Classification Benchmark (ICB) as Real Estate (8600). Please note that the FTSE RAFI Real Estate Global ex US Index has been designed applying a real estate orientated fundamental value calculation. Please refer to Rule 5.4 for further details.

## 4.2 Country Indices

### 4.2.1 FTSE RAFI Developed Countries Indices

The FTSE RAFI Developed Countries Indices will consist of the constituents from each country of the FTSE RAFI Developed ex US 1000 Index. There is also a currency hedged version of the FTSE RAFI Japan Index hedged into Canadian dollars. For further information on FTSE's currency hedging methodology, please contact FTSE directly (see Appendix B).

### 4.2.2 FTSE RAFI Italy 30 Index

The FTSE RAFI Italy 30 Index will consist of the 30 companies with the largest RAFI fundamental values, selected from the constituents of the FTSE Italy All Cap Index, part of the FTSE Global Equity Index Series. FTSE RAFI Italy 30 Index constituents will be capped on a quarterly basis at 20%. Capping will be effective after the close of business following the third Friday in March, June, September and December. Please refer to Rule 8.1 for further details on the capping procedure.

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### 4.2.3 FTSE RAFI UK 100 Index

The FTSE RAFI UK 100 Index will consist of the 100 companies with the largest RAFI fundamental values, selected from the constituents of the FTSE All-Share Index. FTSE RAFI UK 100 Index constituents will be capped on a quarterly basis at 10%. Capping will be effective after the close of business following the third Friday in March, June, September and December. Please refer to Rule 8.1 for further details on the capping procedure.

### 4.2.4 FTSE/JSE RAFI 40 Index

The FTSE/JSE RAFI 40 Index will consist of the 40 companies with the largest RAFI fundamental values, selected from the constituents of the FTSE/JSE Africa All-Share Index. The FTSE/JSE RAFI 40 Index will be capped at 10% on quarterly basis. For further details on the capping procedure, please refer to Rule 8.1.

### 4.2.5 FTSE/JSE RAFI All Share and FTSE/JSE RAFI All Share Capped Indices

The FTSE/JSE RAFI All Share Index and FTSE/JSE RAFI All Share Capped Index will consist of the constituents of the FTSE/JSE Africa All-Share Index, weighted by RAFI fundamental values. The FTSE/JSE RAFI All Share Capped Index will be capped at 10% on quarterly basis. For further details on the capping procedure, please refer to Rule 8.1.

### 4.2.6 FTSE RAFI US Indices

Prior to the review in March 2008, constituents of the following FTSE RAFI US Indices are selected from the FTSE USA All Cap Index, part of the FTSE Global Equity Index Series.

FTSE RAFI US 1000 Index  
 FTSE RAFI US Mid Small 1500 Index  
 FTSE RAFI US 2500 Index  
 FTSE RAFI US Industry Indices

The remaining FTSE RAFI US Indices are based on a combination of the FTSE USA All Cap Index and a broader universe of US stocks. From the March 2008 review, all constituents will be selected from a broader universe comprising of all common stocks from the New York Stock Exchange American Stock Exchange (NYSE AMEX) and NASDAQ National Market System. The universe will be screened for nationality, free float, liquidity and multiple line rules according to the FTSE Global Equity Index Series Ground Rules. Constituents for the FTSE RAFI Global and Regional Indices (see Rule 4.1) that contain US constituents will continue to source their universe from the FTSE Global Equity Index Series.

### 4.2.7 FTSE RAFI US 1000 Index

The FTSE RAFI US 1000 Index will consist of the 1000 US-listed companies with the largest RAFI fundamental values, selected from the constituent universe as detailed in Rule 4.2.6. There is also a currency hedged version of the FTSE RAFI US 1000 Index hedged into Canadian Dollars. For further information on FTSE's currency hedging methodology, please contact FTSE directly (see Appendix B).

### 4.2.8 FTSE RAFI US 2000 Index

The FTSE RAFI US 2000 Index will consist of the next 2000 US-listed companies with the largest RAFI fundamental values after the FTSE RAFI US 1000 Index, selected from the constituent universe as detailed in Rule 4.2.6.

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### 4.2.9 FTSE RAFI US 3000 Index

The FTSE RAFI US 3000 Index will consist of the 3000 US-listed companies with the largest RAFI fundamental values, selected from the constituent universe as detailed in Rule 4.2.6. It will therefore combine the constituents of the FTSE RAFI US 1000 Index and the FTSE RAFI US 2000 Index.

### 4.2.10 FTSE RAFI US Mid Small 1500 Index

The FTSE RAFI US Mid Small 1500 Index will consist of the next 1500 US-listed companies with the largest RAFI fundamental values after the FTSE RAFI US 1000 Index selected from the constituent universe as detailed in Rule 4.2.6.

### 4.2.11 FTSE RAFI US 2500 Index

The FTSE RAFI US 2500 Index will consist of the 2500 US-listed companies with the largest RAFI fundamental values, selected from the constituent universe as detailed in Rule 4.2.6. It will therefore combine the constituents of the FTSE RAFI US 1000 Index and the FTSE RAFI US Mid Small 1500 Index.

### 4.2.12 FTSE RAFI US Industry Indices

The FTSE RAFI US Industry Indices will consist of the constituents of the FTSE RAFI US 1000 Index and will be broken down into the following ICB industries: Oil & Gas (0001), Basic Materials (1000), Industrials (2000), Consumer Goods (3000), Health Care (4000), Consumer Services (5000), Telecommunications & Technology (6000 and 9000), Utilities (7000), Financials (8000). The FTSE RAFI US Industry Indices will be capped on a quarterly basis if they do not meet the requirements as detailed in Section 8 of these rules. Capping will be effective after the close of business following the third Friday in March, June, September and December.

### 4.2.13 FTSE RAFI US Small 500 Index

The FTSE RAFI US Small 500 Index will consist of the 500 US-listed companies with the smallest RAFI fundamental values, selected from the constituent universe as detailed in Rule 4.2.6. It will be based on all those constituents from the FTSE RAFI US 3000 Index which are not included in the FTSE RAFI US 2500 Index.

### 4.2.14 Example of How the FTSE RAFI US Indices are Constructed

| Position when ranked by RAFI Fundamental Value | FTSE RAFI US 1000 Index | FTSE RAFI US Mid Small 1500 Index | FTSE RAFI US 2500 Index | FTSE RAFI US 2000 Index | FTSE RAFI US Small 500 Index | FTSE RAFI US 3000 Index |
|--|-------------------------|-----------------------------------|-------------------------|-------------------------|------------------------------|-------------------------|
| 1 to 500 <sup>th</sup>                         | •                       |                                   | •                       |                         |                              | •                       |
| 501 to 1000 <sup>th</sup>                      | •                       |                                   | •                       |                         |                              | •                       |
| 1001 to 1500 <sup>th</sup>                     |                         | •                                 | •                       | •                       |                              | •                       |
| 1501 to 2000 <sup>th</sup>                     |                         | •                                 | •                       | •                       |                              | •                       |
| 2001 to 2500 <sup>th</sup>                     |                         | •                                 | •                       | •                       |                              | •                       |
| 2501 to 3000 <sup>th</sup>                     |                         |                                   |                         | •                       | •                            | •                       |

Note: the example above shows that the FTSE RAFI 1000 Index is made up of the top 1000 companies when ranked by RAFI fundamental value. The companies in the FTSE RAFI 1000 Index are also members of the FTSE RAFI US 2500 Index and FTSE RAFI US 3000 Index. Similarly, the FTSE RAFI US Small 500 Index is made up of the companies in the 2501 to 3000th position when ranked by RAFI fundamental value. The companies in the FTSE RAFI US Small 500 Index are also members of the FTSE RAFI US 2000 Index and FTSE RAFI US 3000 Index.

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### 4.2.15 FTSE RAFI India 50 Index

The FTSE RAFI India 50 Index will consist of the 50 companies with the largest RAFI fundamental values from the constituents of the FTSE India All Cap Index, provided that the constituents pass the liquidity and free float screening as detailed below. The FTSE RAFI India 50 Index will be capped on a quarterly basis where constituents will be limited to a 10% weighting and industry weights are limited to 40%. Capping will be effective after the close of business following the third Friday in March, June, September and December. Please refer to Rule 8.3 for further details on the capping procedure.

- a) Free float: Only stocks with a free float of greater than or equal to 10% will be eligible if they are selected as a constituent of the index.
- b) Liquidity: Stocks will be tested on the number of days they are able to trade a pre-determined portfolio size if they are selected as a constituent of the index. First, the top 50 stocks with the largest RAFI fundamental value with free float factor greater than or equal to 10% will be selected. The days to trade will be calculated as follows:
  - The portfolio size was set at USD 20m as at 30 December 2005. It will be index-adjusted at each annual review, based on the index value on the last trading day of February each year. The index used for adjustment at review will be the FTSE RAFI India 50 Index (TRI).
  - Assuming each stock can only trade 20% of its '3 month average daily traded value' each day, each selected constituent should be able to trade within at least 1 day the index-adjusted portfolio size based on its capped index weighting.
  - The formula to calculate the 'days to trade' for a prospective constituent is as follows:

$$\frac{\text{Portfolio size (e.g. US\$20m)} * \text{constituent weighting}^1}{3 \text{ month average daily traded value} * 20\%}$$

<sup>1</sup> capped at 10/40%

Any prospective constituents which have a 'days to trade' of over 1 day will be removed and the next company with the largest RAFI fundamental value will be added. The constituent weightings will be calculated again based on the new constituent portfolio size and the days to trade will also be calculated based on the new index weighting. The test will continue until all constituents' days to trade are below or equal to 1.

### 4.2.16 FTSE RAFI Hong Kong/China 80 Net Index

The FTSE RAFI Hong Kong/China 80 Net Index will consist of the 80 companies with the largest RAFI fundamental values from the constituents of the FTSE Hong Kong All Cap Index, FTSE China All Cap Index (excluding B shares) and HSBC Holdings (Sedol: 6158163, Local code: 00005) listed in Hong Kong. The FTSE RAFI Hong Kong/China 80 Index will be capped on a quarterly basis where constituents will be limited to a 10% weighting. Capping will be effective after the close of business following the third Friday in March, June, September and December. The capping process is applied after the close of business on the second Friday in March, June, September and December. Please refer to Rule 8.3 for further details on the capping procedure.

Price and Total Net Return Index of the FTSE RAFI Hong Kong/China 80 Net Index are calculated. For details on the tax rates used in this index, please contact FTSE.

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### 4.2.17 **FTSE RAFI Japan 350 Index**

The FTSE RAFI Japan 350 Index will consist of the 350 companies with the largest RAFI fundamental values from the constituents of the FTSE Japan All Cap Index, provided that the constituents pass the liquidity and free float screening as detailed in these Ground Rules.

### 4.2.18 **FTSE RAFI UK 300 Index**

The FTSE RAFI UK 300 Index will consist of the 300 companies with the largest RAFI fundamental values from the constituents of the FTSE UK All-Share Index, provided that the constituents pass the liquidity and free float screening as detailed in these Ground Rules.

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## SECTION 5

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### 5.0 PERIODIC REVIEW OF CONSTITUENTS

- 5.1 The FTSE RAFI Index Series will be reviewed annually based on data as at the close of business on the last trading day of February, taking into account any additions and deletions planned in the underlying indices.
- 5.2 Changes arising from the annual review are announced 6 trading days prior to the implementation of the FTSE RAFI Index Series review. The review implemented will be after the close of the index calculation on the third Friday of March each year.
- 5.3 The review of the FTSE RAFI Index Series and the calculation of the fundamental weighting of a company are carried out using the following factors as found in a company's annual returns:
- a) Sales = company sales averaged over the prior five years
  - b) Cash Flow = company cash flow averaged over the prior five years
  - c) Book Value = company book value at the review date
  - d) Dividends = total dividend distributions averaged over the last five years
- 5.4 A real estate orientated fundamental value has been used for the FTSE RAFI Real Estate Indices. The review of the FTSE RAFI Real Estate Indices and the calculation of the fundamental weighting of a Real Estate company are carried out using the following factors as found in a company's annual returns:
- a) Revenues = company revenues averaged over the prior five years
  - b) Total Assets = company assets averaged over the prior five years
  - c) Adj. Funds from Operations = company AFO averaged over the prior five years
  - d) Dividends = dividend distributions averaged over the prior five years
- 5.5 If a company has data available but it amounts to fewer than five years, fundamental factors are calculated by averaging as many years of data as available.
- 5.6 The RAFI fundamental value is calculated for each company as a whole, rather than for individual securities issued by the company. Where a company is represented within the FTSE RAFI Index Series by two or more lines of stock, the company's RAFI fundamental value is allocated between these lines of stock in proportion to their investable market capitalisations as of the close of business on the last trading day of February.
- 5.7 Companies will be considered ineligible at the FTSE RAFI Index review if their fundamental data is not yet available and / or the fundamental data cannot be derived from pre-existing companies. For example, companies such as recent listings, recently merged companies or investment entities that do not report the necessary fundamental data.
- 5.8 **Review Process**
- 5.8.1 The annual FTSE RAFI Index Series review is based on FTSE's universe of companies. Four fundamental ratios are calculated for each stock to capture its relevance in the universe. Those fundamental ratios measure the representation of each stock in the universe, applying averages calculated backwards over five years as detailed in Rules 5.3 and 5.4 above.
- a) The representation of each stock in the universe as a percentage of the Sales figure as described in Rule 5.3.a is calculated.
  - b) The representation of each stock in the universe as a percentage of the Cash Flow figure as described in Rule 5.3.b is calculated.

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- c) The representation of each stock in the universe as a percentage of the Book Value figure as described in Rule 5.3.c is calculated.
  - d) The representation of each stock in the universe as a percentage of the Dividends figure as described in Rule 5.3.d is calculated. If a stock has not paid dividends in the past five years, it will have a percentage representation of zero.
- 5.8.2 The RAFI fundamental value is defined as 10,000,000 times the average of the four percentage representation figures above. However, for a stock with a zero dividend percentage, its RAFI fundamental value is defined as 10,000,000 times the average of the three remaining percentage representation figures (sales, cash flow and book value).
- 5.8.3 All stocks are ranked in descending order by their RAFI fundamental value.
- 5.8.4 Companies are selected by their RAFI fundamental values, according to each specific index criteria. The full list of FTSE RAFI Indices can be found in Section 4.
- 5.8.5 To calculate the FTSE RAFI adjustment factor, FTSE divides the investable RAFI fundamental value of each constituent by its investable market capitalisation as at the close of business on the last trading day of February. This is the weighting factor used in the FTSE RAFI Index Series calculation. Please refer to Section 7 for more information regarding the FTSE RAFI Index Series calculation.
- 5.8.6 A company which has a percentage that is excluded from the underlying FTSE RAFI universe but has a percentage that is freely floating and is included in the FTSE RAFI universe will have its investability weighting equal to the whole company that is freely available for foreign investors.
- For example, consider a company which is 90% owned by the state through a domestic share class (which is excluded from the underlying FTSE RAFI universe) and a 10% share class which is freely floating and is available to foreign investors (which is included in the underlying FTSE RAFI universe at a 100% investability weight). The weight assigned to the company will therefore be 10%, which is freely available to foreign investors.
- 5.8.7 For the FTSE RAFI India 50 Index the FTSE RAFI adjustment factor is calculated based on the shares available to domestic investors (i.e. excluding foreign ownership restrictions).

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## SECTION 6

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### 6.0 CHANGES TO CONSTITUENT COMPANIES

#### 6.1 Additions

6.1.1 When a constituent is added to the underlying index universe, the constituent will be considered for inclusion at the next annual review of the FTSE RAFI Index Series.

#### 6.2 Deletions

6.2.1 If a constituent of the underlying universe is removed, the constituent will be removed concurrently from the relevant FTSE RAFI Index Series.

6.2.2 For the FTSE RAFI US Indices where prior to March 2008 there are more than one underlying index universe (see Rules 4.2.5 and 4.2.13), companies removed from one index universe will also be removed from their other associated FTSE RAFI US Indices. For example, a constituent being deleted from the FTSE RAFI US 1000 Index will also be removed from the FTSE RAFI US 2500 Index and FTSE RAFI US 3000 Index.

#### 6.3 Splits / Demergers

6.3.1 If a constituent splits and forms two or more companies and any of the new entities are retained in the underlying universe, those new entities will be retained in the FTSE RAFI Index Series with the same FTSE RAFI adjustment factor as their parent company until the next periodic review.

#### 6.4 Mergers / Takeovers

##### 6.4.1 Mergers / Takeovers between constituents

All mergers between existing constituents are treated as cash mergers. The constituent being acquired is deleted on the effective date of the acquisition. The acquiring company will remain a constituent of the relevant FTSE RAFI Indices and its FTSE RAFI factor will be recalculated to ensure cap-neutrality for any resulting shares in issue increase.

##### 6.4.2 Mergers / Takeovers between a constituent and a non-constituent

- a) If an existing constituent is acquired by a non-constituent for cash or stock, the existing constituent will be deleted and the acquiring non-constituent will not be considered for FTSE RAFI Index eligibility until the next annual review.
- b) If an existing constituent acquires a non-constituent for cash or stock, the existing constituent will remain in its relevant FTSE RAFI Indices at an unchanged weight.

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## SECTION 6

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### 6.5 Suspension of Dealing

- 6.5.1 If a constituent is suspended on its home exchange it may remain in the indices, at the price at which it is suspended, for up to 10 business days. During this time, on advice from FTSE, the Chairman and Deputy Chairman of the relevant Regional Committee (or their deputies) may agree to delete the constituent immediately either at its suspension price, or at zero.
- 6.5.2 Where a suspension of a constituent lasts beyond noon on the tenth business day (and the option to remove the constituent has not been exercised), the constituent will normally be deleted from the indices on the eleventh trading day at zero or the suspension price. Where suspension is for a reason not to the detriment of the constituent, it may be retained or removed at its suspension price with the approval of the Chairman and Deputy Chairman (or their deputies) of the relevant Regional Committee.

### 6.6 Relisting of Suspended Constituents

- 6.6.1 Securities which on relisting, are larger than the smallest constituent of the index, will be re-instated in the index at the price at which they were removed. The re-instatement will happen after the close of business on the first day after the stock is re-listed.
- 6.6.2 If a deleted constituent (that has been suspended at a price other than zero) is subsequently delisted and deemed to be of nil value, the stock will be included for one day's calculation in the index (from which it was removed) to enable the fall in the stock's value to be reflected in the index value.
- 6.6.3 In this situation, the stock will be re-included at the suspension price, and its price will be zero throughout that day's calculation, including the closing price.
- 6.6.4 If a company relists after a continuous period of suspension lasting more than a year, the relevant Regional Committee reserve the right to treat the company as a new issue for the purposes of index eligibility.

## SECTION 6

### 6.7 Corporate Actions for Market Capitalisation Neutral

6.7.1 The FTSE RAFI adjustment factor of a constituent will be adjusted following a corporate action that affects its market capitalisation to ensure its weight remains the same in the index. The table below summarises corporate action treatment in relation to the FTSE RAFI adjustment factor (for market capitalisation neutral).

| <b>Corporate Event</b>   | <b>Market Cap Neutral</b> | <b>Description</b>   | <b>Action</b>  |
|--|---------------------------|--|--|
| <b><u>Treatment of all stock mergers between:</u></b>  |                           |  |  |
| <u>Index constituents</u>  | No                        | Company A acquires Company B for stock   | Company A will increase shares (neutralised event).<br>Company B will be deleted   |
| <u>Index constituent acquiring a non-constituent (if &gt;10% &amp; 2bn)</u>                  | Yes                       | Index constituent Company A acquires non constituent                                 | Company A will increase shares (neutralised event).                                |
| <u>Non-constituent acquiring an index constituent (cash or stock)</u>                        | Yes                       | Non-constituent B acquiring an index constituent Company A.                          | Company A will be deleted.<br>Company B not eligible until the next annual review. |
| <b><u>Treatment Spin-Offs:</u></b>   |                           |  |  |
| <u>Spun-off entity added to the index</u>  | Yes                       | Company A spins off Company B, with Company B added to the same indices as Company A | Weight of New Company A & B equals the weight of original Company A                |
| <u>Spun-off entity not added to the index (capital repayment)</u>                            | No                        | Company A spins off Company B, with Company B NOT added to any indices               | Treated as a capital repayment for Company A                                       |
| <b><u>Treatment of Capital Repayments</u></b>  |                           |  |  |
| <u>Standard special dividend</u>   | No                        | Capital repayment  | Price reduces, not applied as a market cap neutral event                           |
| <u>Result of bonus in different line of stock</u>  | No                        | Capital repayment  | Price reduces, not applied as a market cap neutral event                           |
| <b><u>Treatment of Rights Issues</u></b>   | Yes                       |  | Market Cap Neutral Event   |
| <b><u>Treatment of Splits, Bonus &amp; Scrip issues</u></b>                                  | Yes                       |  | Market Cap Neutral Event   |
| <b><u>Treatment of Investability Weight</u></b>  | Yes                       |  | Market Cap Neutral Event   |
| <b><u>Changes in Shares in Issue (quarterly 1% and intra-quarter &gt;10% or 2bn USD)</u></b> | Yes                       |  | Market Cap Neutral Event   |

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## SECTION 7

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### 7.0 FTSE RAFI INDEX SERIES CALCULATION

- 7.1 Constituents are weighted within the FTSE RAFI Index Series by their investable RAFI fundamental value rather than their market capitalisation.
- 7.2 The investable RAFI fundamental value for each constituent is applied to the Index calculation with the addition of the FTSE RAFI adjustment factor  $c_i$ .
- 7.3 FTSE RAFI Index Series calculation uses the same methodology as other FTSE's indices. However, the FTSE RAFI adjustment factor  $c_i$  increases or reduces the weight of a constituent based on its fundamentals. The FTSE RAFI adjustment factor  $c_i$  therefore neutralises the conventional investable market capitalisation (i.e. after the application of any investability weighting) of the constituent.
- 7.4 FTSE calculates the FTSE RAFI adjustment factor  $c_i$  for each stock at review, dividing its investable RAFI fundamental value by its investable market capitalisation in US Dollars (i.e. after the application of any investability weighting) as at the close of business on the last trading day of February. Where:

$$c_i = \text{RAFI fundamental value} * \text{investability weighting} / (\text{price} * \text{shares} * \text{investability weighting})$$

- 7.5 The FTSE RAFI adjustment factor  $c_i$  is applied to the investable market capitalisation (i.e. after the application of any investability weighting). This cancels out the market capitalisation effect and the RAFI fundamental value is captured. Where:

$$\text{price} * \text{shares} * \text{investability weighting} * \text{FTSE RAFI adjustment factor}$$

#### 7.6 Example for Company A with a RAFI Fundamental Value of 10,000

If Company A had a price of US\$ 2 and 5,000 shares in issue, its market capitalisation would be US\$ 10,000. If it was assumed that its investability weight was 50%, its investable market capitalisation (i.e. after the application of any investability weighting) would be US\$ 5,000.

The FTSE RAFI adjustment factor for Company A would be calculated applying the formula in Rule 7.4 and would equal to  $c_i = 10,000 * 50\% / \text{US\$ } 5,000 = 1.0$

Thus, applying the formula in Rule 7.5 the investable RAFI fundamental values is captured as  $2 * 5,000 * 50\% * 1.0 = 5,000$

- 7.7 The application of the FTSE RAFI adjustment factor to the conventional investable market capitalisation ensures that the price performance of each stock is taken into account when calculating the index and also that any corporate actions that may impact the price of a constituent such as rights or scrip issues are accounted for.

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## SECTION 7

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7.8 Hence the formula is as follows:

$$\frac{\sum_{i=1}^n ((p_i \cdot e) \cdot s_i \cdot f_i \cdot c_i)}{d}$$

n = 1,2,3.....,n

|     |  |   |
|-----|--|---|
| n = | Number   | The number of securities in the Index.  |
| p = | Price  | The latest trade price of the component security (or the price at the close of the Index on the previous day).  |
| e = | Exchange Rate  | The exchange rate required to convert the security's home currency into the index's base currency.  |
| s = | Shares in Issue  | The number of shares in issue used by FTSE for the security, as defined in these Ground Rules.  |
| f = | Investability Weighting  | The factor to be applied to each security to allow amendments to its weighting, expressed as a number between 0 and 1, where 1 represents a 100% investability weighting. The investability weighting for each security is published by FTSE. Please note that an international investors perspective is taken into account when calculating the Investability Weight for the FTSE RAFI Index Series. |
| d = | 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.   |
| c = | $\frac{\text{RAFI fundamental value} \cdot \text{investability weighting}}{\text{price} \cdot \text{shares} \cdot \text{investability weighting}}$ |   |

7.9 Reuters real time exchange rates are used in the index calculations which are disseminated in real-time. Exchange rates used in the End of Day calculations are WM/Reuters Closing Spot Rates, collected at 16:00 hrs London time.

## SECTION 8

### 8.0 FTSE RAFI CAPPING METHODOLOGY

#### 8.1 FTSE RAFI Italy 30, FTSE RAFI UK 100, FTSE/JSE RAFI 40, FTSE/JSE RAFI All-Share Capped Indices Capping Methodology

8.1.1 The FTSE RAFI capping process aims to reduce any concentration levels that may exist. The capping process is applied after the close of business on the third Friday in March, June, September and December based on the starting constituents of the next working day. The underlying data used in the capping process is as follows:

- The security's closing price adjusted for corporate events after the close of business on the second Friday of each quarter.
- The security's starting shares in issue figure, its investability weight and its FTSE RAFI adjustment factor on the next working day following the third Friday of each quarter.

The algorithm is applied to each constituent of the FTSE RAFI Indices that requires capping, i.e. any constituent whose uncapped weight is greater than the capping level.

$$\text{Constituent capping factor} = \frac{\left( \left( \frac{\sum (P^{n_1} \cdot S^{n_1} \cdot F^{n_1} \cdot G^{n_1})}{I} \right) Z \right)}{cap_a}$$

$P$  = the official closing price of the uncapped security

$S$  = the shares in issue for each uncapped security

$F$  = the free float factor of the uncapped security

$G$  = the fundamental factor of the uncapped security

$I$  = percentage of the index represented by all uncapped constituents

$Z$  = percentage capping level

$cap_a$  = uncapped investable market capitalisation of the constituent to be capped ( $P \cdot S \cdot F \cdot G$ )

#### 8.2 FTSE RAFI US Industry Indices Capping Methodology

##### STAGE 1

- Any constituents whose weights are greater than 20% are capped at 20%. The weights of all lower ranking constituents are increased as a consequence of reducing the weights of the bigger stocks. The remaining lower ranking constituents are then checked and if they exceed 20% they are also capped at 20%. This process is repeated until no constituent weight exceeds 20%. The algorithm applied to the index on stock level capping can be found in Rule 8.1.1.
- Following the application of Stage 1, if the total index weight of those constituents whose individual weights exceed 5% is greater than 50% in aggregate, the procedure moves onto Stage 2 below. Otherwise no further action is required and the capping process is completed.

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## SECTION 8

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### STAGE 2

- c) If it is necessary to apply the provisions of Stage 2, only one constituent will have a 20% weight in the index. If more than one stock is capped at 20%, then weights of all subsequent constituents previously capped at 20% are changed in accordance with the rules detailed below. For example, if the second largest stock is capped at 20% its weight will be reduced to 15%. The process is then continued from the relevant point in the steps below.
- d) If the weight of the largest constituent is greater than 20% the constituent's weight is capped at 20% and the weights of the lower ranking constituents are increased correspondingly.
- e) If the weight of the second largest constituent is greater than 15% the constituent's weight is capped at 15% and the weights of the lower ranking constituents are increased correspondingly.
- f) If the weight of the third largest constituent is greater than 10% the constituent's weight is capped at 10% and the weights of the lower ranking constituents are increased correspondingly.
- g) If the weight of the fourth largest constituent is greater than 5% the constituent's weight is capped at 5% and the weights of the lower ranking constituents are increased correspondingly.
- h) If the weights of the fifth largest constituent and any lower ranking constituents are greater than 4% those constituents' weights are capped at 4% and the weights of lower ranking constituents are increased correspondingly.
- i) Following the application of Stage 2, the weights of each constituent are checked and Stage 2 is repeated until no threshold is breached. The process is repeated until the total index weight of those constituents whose individual weights exceed 5% is not greater than 50% in aggregate.

### 8.3 FTSE RAFI India 50 Index Capping Methodology

#### STAGE 1

- a) Any constituents whose weights are greater than 10% are capped at 10%. The weights of all lower ranking constituents are increased as a consequence of reducing the weights of the bigger stocks. The remaining lower ranking constituents are then checked and if they exceed 10% they are also capped at 10%. This process is repeated until no constituent weight exceeds 10%. The algorithm applied to the index on stock level capping can be found in Rule 8.1.1.
- b) Following the application of Stage 1, if the weight of an ICB Industry exceeds 40%, the procedure moves onto Stage 2 below. Otherwise no further action is required and the capping process is completed.

#### STAGE 2

- c) If any of the ICB Industry weights exceeds 40%, the industry will be capped at 40% and the weights of all subsequent constituents are changed accordingly and they will be recapped again until no stocks exceeds 10% and no industry exceeds 40% in weight.

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## APPENDIX A

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### INDEX SERIES OPENING AND CLOSING HOURS

|   | <b>OPEN</b> | <b>CLOSE</b> |
|---|-------------|--------------|
| FTSE RAFI All-World 3000 Index                            | 00:30       | 21:10        |
| FTSE RAFI BRIC Index                                      | 02:00       | 21:10        |
| FTSE RAFI Canada Index                                    | 14:30       | 21:10        |
| FTSE RAFI Developed 1000 Index                            | 00:30       | 21:10        |
| FTSE RAFI Developed Asia Pacific ex Japan Index           | 00:30       | 09:15        |
| FTSE RAFI Developed Asia Pacific ex Japan Mid Small Index | 00:30       | 09:15        |
| FTSE RAFI Developed Europe Mid Small Index                | 08:00       | 16:30        |
| FTSE RAFI Developed Mid Small 1500 Index                  | 00:30       | 21:10        |
| FTSE RAFI Developed ex US 1000 Index                      | 00:30       | 21:10        |
| FTSE RAFI Developed ex US Mid Small 1500 Index            | 00:30       | 21:10        |
| FTSE RAFI Emerging Index                                  | 00:30       | 21:10        |
| FTSE RAFI Europe Index                                    | 08:00       | 16:30        |
| FTSE RAFI Eurozone Index                                  | 08:00       | 16:30        |
| FTSE RAFI India 50 Index                                  | 03:45       | 10:00        |
| FTSE RAFI Italy 30 Index                                  | 08:00       | 16:30        |
| FTSE RAFI Japan Index (also available in CAD)             | 00:30       | 06:45        |
| FTSE RAFI Japan 350 Index                                 | 00:30       | 06:45        |
| FTSE/JSE RAFI 40 Index                                    | 07:00       | 15:00        |
| FTSE/JSE RAFI All-Share                                   | 07:00       | 15:00        |
| FTSE RAFI Nordic Index                                    | 08:00       | 16:30        |
| FTSE RAFI Real Estate US 100 Index                        | 14:30       | 21:10        |
| FTSE RAFI Real Estate Global ex US Index                  | 00:30       | 21:10        |
| FTSE RAFI UK 100 Index                                    | 08:00       | 16:30        |
| FTSE RAFI UK 300 Index                                    | 08:00       | 16:30        |
| FTSE RAFI US 1000 Index                                   | 14:30       | 21:10        |
| FTSE RAFI US 2000 Index                                   | 14:30       | 21:10        |
| FTSE RAFI US 3000 Index                                   | 14:30       | 21:10        |
| FTSE RAFI US Industry Indices                             | 14:30       | 21:10        |
| FTSE RAFI US Mid Small 1500 Index                         | 14:30       | 21:10        |

#### Notes:

Closing values at 21:10 will be disseminated at 21:30.

Timings are UK hours, from Monday to Friday.

WM/Reuters Closing Spot Rates™ compiled by The WM Company are used.

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## APPENDIX B

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### FURTHER INFORMATION

For further information and enquiries log on to: [www.ftse.com](http://www.ftse.com)

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