

# FTSE Volatility Bonus Indices

v1.1



**FTSE  
RUSSELL**

An LSEG Business

# Contents

Section 1 Introduction .....	3
Section 2 Management responsibilities .....	4
Section 3 FTSE Russell Index policies .....	5
Section 4 Target risk exposure and return on cash.....	7
Section 5 Calculation of index .....	9
Section 6 Periodic rebalancing .....	10
Appendix A List of volatility target indices.....	11
Appendix B Underlying indices and cash rates .....	12
Appendix C Index parameters .....	13
Appendix D Further information.....	15

## Section 1

# Introduction

---

## 1. Introduction

- 1.1 This document sets out the Ground Rules for the construction and management of the FTSE Volatility Bonus Indices.
- 1.2 The FTSE Volatility Bonus Indices represent the performance of an investment strategy that seeks to leverage up on an underlying index and a cash asset, with the additional exposure dependent on the volatility of that underlying index compared against a pre-specified target level.
- 1.3 The additional exposure to the underlying index increases (decreases) as the volatility of the underlying index decreases (increases) below (above) the pre-specified level. The additional exposure is combined with an initial 100%. Exposure to the cash asset increases (decreases) as the volatility of the underlying index increases (decreases) above (below) the pre-specified target level.
- 1.4 For more information on the underlying index, please refer to the relevant FTSE Russell Ground Rules at [www.ftserussell.com](http://www.ftserussell.com).
- 1.5 The FTSE Volatility Bonus Indices do not take account of ESG factors in its index design.
- 1.6 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.
- 1.7 FTSE Russell hereby notifies users of the index 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 and therefore, any financial contracts or other financial instruments that reference the index or investment funds which use the index to measure their performance should be able to withstand, or otherwise address the possibility of changes to, or cessation of, the index.
- 1.8 Index users who choose to follow this index or to buy products that claim to follow this index should assess the merits of the index 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 for any losses, damages, claims and expenses suffered by any person as a result of:
- any reliance on these Ground Rules, and/or
  - any 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 inaccuracies in the compilation of the index series or any constituent data.
- 1.9 This index is published at the end of each working day. The total return indices are based on ex dividend adjustments.

## Section 2

# Management responsibilities

## 2. 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 will maintain records and disseminate the index.

2.1.3 MerQube is the calculation agent of the index as defined by the IOSCO Principles and is responsible for its daily calculation.

### 2.2 Status of these Ground Rules

2.2.1 These Ground Rules set out the methodology and provide information about the publication of the FTSE Volatility Bonus Indices.

### 2.3 Amendments to these Ground Rules

2.3.1 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. 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 Index Governance Board before approval is granted.

2.3.2 As provided for in the statement of principles for FTSE Russell Equity Indices, where FTSE Russell determines that the Ground Rules are silent or do not specifically and unambiguously apply to the subject matter of any decision, any decision shall be based as far as practical on the statement of principles. After making any such determination, FTSE Russell shall advise the market of its decision at the earliest opportunity. Any such treatment will not be considered as an exception or change to the Ground Rules, or to set a precedent for future action, but FTSE Russell will consider whether the Ground Rules should subsequently be updated to provide greater clarity.

<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

---

### 3. FTSE Russell Index policies

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

#### 3.1 **Statement of Principles for FTSE Russell Equity Indices (the Statement of principles)**

Indices need to keep abreast of changing markets and the Ground Rules cannot anticipate every eventuality. Where the Ground Rules do not fully cover a specific event or development, FTSE Russell will determine the appropriate treatment by reference to the statement of principles which summarises the ethos underlying FTSE Russell's approach to index construction. The statement of principles is reviewed annually and any changes proposed by FTSE Russell are presented to the FTSE Russell Policy Advisory Board for discussion before approval by the FTSE Russell Index Governance Board.

The statement of principles can be accessed through the following link:

[Statement of Principles.pdf](#)

#### 3.2 **Queries and Appeals**

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

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

#### 3.3 **Index Policy for Trading Halts and Market Closures**

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

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

#### 3.4 **Index Policy in the Event Clients are Unable to Trade a Market or a Security**

3.4.1 Details of FTSE Russell's treatment can be accessed through the following link:

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

### **3.5 Recalculation Policy and Guidelines**

- 3.5.1 Where an inaccuracy is identified, FTSE Russell will follow the steps set out in the FTSE Russell Index recalculation guidelines when determining whether an index or index series should be recalculated and/or associated data products reissued. Users of the FTSE Volatility Bonus Indices will be notified through appropriate media.

For further information, please refer to the FTSE Russell recalculation policy and guidelines document which is available from the FTSE Russell website through the link below or by contacting [info@ftserussell.com](mailto:info@ftserussell.com).

[Recalculation Policy and Guidelines Equity Indices.pdf](#)

### **3.6 Policy for Benchmark Methodology Changes**

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

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

### **3.7 FTSE Russell Governance Framework**

- 3.7.1 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 through the following link:

[FTSE Russell Governance Framework.pdf](#)

### **3.8 Real Time Status Definitions**

- 3.8.1 Please refer to the following guide for details of real time status definitions for indices which are calculated in real time.

[Real Time Status Definitions.pdf](#)

---

<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

# Target risk exposure and return on cash

## 4. Target risk exposure and return on cash

### 4.1 Target risk exposure

- 4.1.1 FTSE Volatility Bonus Indices control the risk exposure based on the volatility of the underlying index.
- 4.1.2 The volatility of the underlying index is calculated using equal weighted average based on daily underlying index returns.
- 4.1.3 Two volatility estimates; a short period and a long period estimate,  $\sigma_S$  and  $\sigma_L$  respectively, are calculated over the volatility calculation period of  $n_S$  and  $n_L$  days at time  $t$ :

$$\sigma_S(t) = \sqrt{\frac{252 \sum_{k=t-n_S+1}^t \left( \ln \frac{S(k)}{S(k-1)} - \sigma_{S\_avg} \right)^2}{n_S - 1}} \quad (1)$$

$$\sigma_L(t) = \sqrt{\frac{252 \sum_{k=t-n_L+1}^t \left( \ln \frac{S(k)}{S(k-1)} - \sigma_{L\_avg} \right)^2}{n_L - 1}} \quad (2)$$

Where,

- $S(k)$  is the underlying index value at time  $k$ ;

$$\sigma_{S\_avg} = \frac{\sum_{k=t-n_S+1}^t \left( \ln \frac{S(k)}{S(k-1)} \right)}{n_S}$$

$$\sigma_{L\_avg} = \frac{\sum_{k=t-n_L+1}^t \left( \ln \frac{S(k)}{S(k-1)} \right)}{n_L}$$

- 4.1.4  $\sigma_S(t)$  and  $\sigma_L(t)$  are calculated each day. The larger of the short and long horizon volatility estimates  $\sigma_{MAX}(t)$ , is used to determine the target level of risk exposure.
- 4.1.5 On any business day  $t$ , the target level of risk exposure of FTSE Volatility Bonus Indices to the underlying index is calculated as:

$$E(t) = \min \left( L_M, \frac{\alpha_T}{\sigma_{MAX}(t-lag)} + 1 \right) \quad (3)$$

Where:

- $L_M$  is maximum leverage;
- $\alpha_T$  is the volatility bonus.
- $lag$  represents the number of days prior to  $t$ .

- 4.1.6 The parameters used in 4.1.3 to 4.1.5 are detailed in Appendix D and D for the FTSE Volatility Bonus Indices.

## 4.2 Cash Return

4.2.1 FTSE Volatility Bonus Indices use the relevant overnight interbank rate as the return on cash.

$$r_c(t) = r(t-1) \times \frac{d(t,t-1)}{\text{DayCount}}$$

where,

- $r(t-1)$  is the overnight interbank rate. The rate applicable to each index is detailed in Appendix C.
- $d(t,t-1)$  is the number of calendar days between  $t-1$  and  $t$
- DayCount is the number of days in a year used in the convention of the corresponding interest rate.



## Section 5

# Calculation of index

---

## 5. Calculation of index

5.1 The FTSE Volatility Bonus Indices are calculated as follows:

$$VBI(t) = VBI(t-1) \times [E(t) \times r_U(t) + (1-E(t)) \times r_C(t) + 1]$$

where:

- $VBI(t)$  is the Volatility Bonus Index
- $E(t)$  is the target level of risk exposure
- $r_U(t)$  is the underlying index return
- $r_C(t)$  is the return on cash on day  $t$

## 5.2 Calculation frequency

5.2.1 The FTSE Volatility Bonus Indices are calculated end-of-day (EOD) after the close of the underlying index.

## Section 6

# Periodic rebalancing

---

## 6. Periodic rebalancing

### 6.1 Periodic rebalancing

6.1.1 The target level risk exposure is re-estimated daily.

Appendix A

# Index Volatility Calculation Details

Index Name	Volatility Method	Lag	Volatility Bonus	nS	nL
FTSE 100 10% Volatility Bonus Index	Equal Weighted	1	10%	20	60
FTSE MIB 10% Volatility Bonus Index	Equal Weighted	1	10%	20	60

Appendix B

# Underlying Index and Cash Rates

Index name	Underlying	Cash Rate	Day Count
FTSE 100 10% Volatility Bonus Index	FTSE 100 Index (Price Return)	SONIA	360
FTSE MIB 10% Volatility Bonus Index	FTSE MIB Index (Price Return)	01/10/2019 and earlier: EONIA + 8.5bps 02/10/2019 and later: ESTR	360

Appendix C

# Calculation

Index Name	Calculation	Fixed Cost Applied	Fixed Point (FP)	Percentage (P)	Days
FTSE 100 10% Volatility Bonus Index	Price	N	NA	NA	NA
FTSE MIB 10% Volatility Bonus Index	Price	N	NA	NA	NA

Appendix D

# Other index parameters

Index Name	Max Leverage
	$L_m$
FTSE 100 10% Volatility Bonus Index	200%
FTSE MIB 10% Volatility Bonus Index	200%

## Appendix D

# Further information

---

A glossary of terms used in FTSE Russell's Ground Rule documents can be found through the following link:

[Glossary.pdf](#)

Further information on the FTSE Volatility Bonus Indices are 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.lseg.com/en/ftse-russell/](http://www.lseg.com/en/ftse-russell/)

## Disclaimer

© 2023 London Stock Exchange Group plc and its applicable group undertakings (the "LSE Group"). The LSE Group includes (1) FTSE International Limited ("FTSE"), (2) Frank Russell Company ("Russell"), (3) FTSE Global Debt Capital Markets Inc. and FTSE Global Debt Capital Markets Limited (together, "FTSE Canada"), (4) FTSE Fixed Income Europe Limited ("FTSE FI Europe"), (5) FTSE Fixed Income LLC ("FTSE FI"), (6) The Yield Book Inc ("YB") and (7) Beyond Ratings S.A.S. ("BR"). All rights reserved.

The FTSE Volatility Bonus Indices is calculated by or on behalf of FTSE International Limited or its affiliate, agent or partner. FTSE International Limited is authorised and regulated by the Financial Conduct Authority as a benchmark administrator.

MerQube, Inc. does not guarantee the accuracy, timeliness, or completeness of the calculations or any data or information relating to the Index. MerQube, Inc. makes no warranty, express or implied, as to the Index, or any values or data related thereto or results to be obtained therefrom, and expressly disclaims all warranties of merchantability and fitness for a particular purpose with respect thereto. To the maximum extent permitted by law, MerQube, Inc., its affiliates, and all their respective employees, subcontractors, partners, agents, suppliers, and vendors (collectively, the "protected parties") shall have no liability, contingent or otherwise, for any injury or damages, whether caused by the negligence of a protected party or otherwise, arising in connection with the calculation of the Index or any data or values included therein or in connection therewith and shall not be liable for any losses (including lost profits), punitive, incidental, or consequential damages.

FTSE Russell® is a trading name of FTSE, Russell, FTSE Canada, FTSE FI Europe, FTSE FI, YB and BR. "FTSE®", "Russell®", "FTSE Russell®", "FTSE4Good®", "ICB®", "The Yield Book®", "Beyond Ratings®" and all other trademarks and service marks used herein (whether registered or unregistered) are trademarks and/or service marks owned or licensed by the applicable member of the LSE Group or their respective licensors and are owned, or used under licence, by FTSE, Russell, FTSE FI Europe, FTSE Canada, FTSE FI, YB or BR.

All information is provided for information purposes only. Every effort is made to ensure that all information given in this publication is accurate, but no responsibility or liability can be accepted by any member of the LSE Group nor their respective directors, officers, employees, partners or licensors for any errors or for any loss from use of this publication or any of the information or data contained herein.

No member of the LSE Group nor their respective directors, officers, employees, partners or licensors make any claim, prediction, warranty or representation whatsoever, expressly or impliedly, either as to the results to be obtained from the use of the FTSE Volatility Bonus Indices or the fitness or suitability of the Index Series for any particular purpose to which it might be put.

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

No part of this information may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without prior written permission of the applicable member of the LSE Group. Use and distribution of the LSE Group index data and the use of their data to create financial products require a licence with FTSE, Russell, FTSE Canada, FTSE FI Europe, FTSE FI, YB, BR and/or their respective licensors.



**FTSE  
RUSSELL**  
An LSEG Business