# FTSE Futures Volatility Target Index Series

v1.0



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## Introduction

## 1. Introduction

- 1.1 This document sets out the Ground Rules for the construction and management of the FTSE Futures Volatility Target Index Series.
- 1.2 The FTSE Futures Volatility Target Index Series (each an "Index" and collectively the "Indices") represents the performance of an investment strategy that provides variable exposure to a future contract, via an underlying index, while targeting a specified level of volatility. The exposure to the underlying index decreases or increases (subject to a cap) on a daily basis proportionally to the ratio between a volatility target and the realized volatility of the underlying index.
- 1.3 The Index Series will be calculated on an end of day basis.
- 1.4 These Ground Rules should be read in conjunction with the corresponding Ground Rules or index methodology of the relevant component indices, which are available at https://www.lseg.com/en/ftse-russell
- 1.5 The Index Series does 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.), FTSE Fixed Income LLC, FTSE (Beijing) Consulting Limited.

- 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.
- 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 or any constituent data.

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# Management responsibilities

## Management responsibilities

## 2.1 FTSE International Limited (FTSE)

- 2.1.1 FTSE is the benchmark administrator of the Index<sup>1</sup>.
- 2.1.2 FTSE is responsible for the daily calculation, production and operation of the Index 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 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 Index
- 2.1.3 These Ground Rules set out the methodology and provide information about the publication of the Index.

#### 2.2 Amendments to these Ground Rules

- 2.2.1 These Ground Rules shall be subject to regular review (at least once a year) by FTSE Russell to ensure that they continue to best reflect the aims of the Index. 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.
- 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.

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<sup>&</sup>lt;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).

# 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

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## 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 Index 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.

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

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<sup>&</sup>lt;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.

The Benchmarks (Amendment and Transitional Provision) (EU Exit) Regulations 2019.

# Index calculation methodology

## Index calculation methodology

#### 4.1 Index Value calculation:

For each Index, the Index Value is equal to the Index Base Value on the Index Base Date.

Thereafter, for each Index Business Day, the Index Value is calculated in accordance with the following formula, subject to Consequences of Disruption Event or Consequence of Extraordinary Event:

$$I_t = I_{t-1} \times [1 + Return_t - Cost_t + Cash_t - PerDecrCost_t] - PtDecrCost_t$$

where:

t means an Index Business Day t;

t-1 means the Index Business Day immediately preceding Index Business Day t;

 $I_x$  means the Index Value on Index Business Day x;

 $Return_x$  means the Return Component on Index Business Day x calculated as per section 4.2;  $Cost_x$  means the Cost Component on Index Business Day x calculated as per section 4.3;  $Cash_x$  means the Cash Component on Index Business Day x calculated as per section 4.4;

 $PerDecrCost_x$  means the Percentage Decrement Cost on Index Business Day x calculated as per

section 4.5;

 $PtDecrCost_x$  means the Point Decrement Cost on Index Business Day x calculated as per section 4.5;

## 4.2 Return Component calculation:

In respect of an Index and an Index Business Day t, the Return Component is calculated as follows:

$$Return_t = E_{t-lag} \times \left( \frac{S_t - S_{t-1}}{S_{t-1}} - \frac{Act_{t-1,t} \times FC}{365} \right) \times \frac{FX_t}{FX_{t-1}}$$

where:

 $Return_x$  means the Return Component on Index Business Day x;

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$E_x$	means the target level of risk exposure on Index Business Day $x$ , as defined in Section 4.6;
lag	means the Lag for the Index (see Lag in the Appendix B below);
$S_x$	means the Reference Price of the Index Constituent on Index Business Day $x$ ;
FC	means the funding cost of the Index Constituent (see FC in the Appendix B below);
$Act_{x-1,x}$	means the number of calendar days between Index Business Day $x$ (excluded) and Index Business Day $x$ -1 (included);
$FX_{x}$	means the Exchange Rate on Index Business Day $x$ ,

#### 4.3 **Cost Component calculation:**

In respect of an Index and an Index Business Day t, the Cost Component is calculated as follows:

$$Cost_{t} = Abs \left[ E_{t-lag} - E_{t-1-lag} \right] \times TC$$

where:

 $Cost_t$ means the Cost Component on Index Business Day t;

 $\begin{cases}
if \ a > 0 \\
if \ a \le 0
\end{cases}$ Abs [a]

means the target level of risk exposure on Index Business Day x, as defined in Section  $E_x$ 

4.6;

means the Lag for the Index (see Lag in the Appendix B below); lag

TCmeans the transaction cost for the Index Constituent (see TC in the Appendix B below);

#### 4.4 **Cash Component calculation:**

In respect of an Index and an Index Business Day t, the Cash Component is calculated as follows:

$$Cash_t = TR \times \frac{Act_{t-1,t} \times r_{t-1}}{CDCF}$$

where:

 $Cash_t$ means the Cash Component on Index Business Day t;

TRmeans the TR number for the Index (see TR in the Appendix B below)

means the overnight rate for on Index Business Day x (see IR in the Appendix B below);  $r_{\chi}$ 

means the number of calendar days between Index Business Day t (excluded) and  $Act_{t-1,t}$ 

Index Business Day t-1 (included);

Means the CDCF for the Index (see CDCF in the Appendix B below); **CDCF** 

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### 4.5 Point Decrement Cost and Percentage Decrement Cost calculation:

In respect of an Index and an Index Business Day t, the Percentage Decrement Cost and the Point Decrement Cost are calculated as follows:

$$\begin{aligned} \textit{PerDecrCost}_t &= \frac{\textit{Act}_{t-1,t} \times \textit{PerD}}{\textit{DDCF}} \\ \textit{PtDecrCost}_t &= \frac{\textit{Act}_{t-1,t} \times \textit{PtD}}{\textit{DDCF}} \end{aligned}$$

where:

PerDecrCost, means the Percentage Decrement Cost on Index Business Day t;

PtDecrCost, means the Point Decrement Cost of the Index on Index Business Day t;

PerD means the amount of percentage decrement (see PerD in the Appendix B below);

PtD means the amount of point decrement (see PtD in the Appendix B below);

 $Act_{t-1,t}$  means the number of calendar days between Index Business Day t (excluded) and

Index Business Day t-1(included);

DDCF means the DDCF for the Index (see DDCF in the Appendix B below);

## 4.6 Target risk exposure calculation:

In respect of an Index and an Index Business Day t, the target level of risk exposure is calculated as:

$$E_t = min[L_M, preE_t]$$

where:

 $E_t$  means the target level of risk exposure on Index Business Day t;

 $L_M$  means the maximum leverage (see  $L_M$  in the Appendix B below);

$$preE_{t} = \begin{cases} \frac{TV}{\sigma_{t}} & if \ Abs \left[ \frac{TV}{\sigma_{t}} - preE_{t-1} \right] > EB \times preE_{t-1} \\ preE_{t-1} & if \ Abs \left[ \frac{TV}{\sigma_{t}} - preE_{t-1} \right] \leq EB \times preE_{t-1} \end{cases}$$

TV means the target volatility for the Index (see TV in the Appendix B below);

EB means the exposure buffer for the Index (see EB in the Appendix B below);

means the realized volatility of the Index Constituent for Index Business Day t and calculated as per section 4.7;

## 4.7 Realized volatility calculation:

4.7.1 In respect of an Index and an Index Business Day t, the realized volatility of the Index Constituent is calculated as follows:

$$\sigma_t = max \left[ \sigma_{S,t}, \sigma_{L,t} \right]$$

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#### where:

 $\sigma_t$  means the realized volatility of the Index Constituent on Index Business Day t; means the short-term realized volatility of the Index Constituent on Index Business Day t and calculated as per section 4.7.2; means the long-term volatility of the Index Constituent on Index Business Day t and calculated as per section 4.7.2.

4.7.2 On any Index Business Day, the short-term and long-term volatility estimate of the Index Constituent are calculated as:

$$\sigma_{S,t} = \sqrt{252 \sum_{k=t-K+1}^{t} \frac{\alpha_{S,t-k+1}}{\sum_{k=1}^{K} \alpha_{S,k}} \times \left(\frac{S_k}{S_{k-1}} - 1\right)^2}$$

$$\sigma_{L,t} = \sqrt{252 \sum_{k=t-K+1}^{t} \frac{\alpha_{L,t-k+1}}{\sum_{k=1}^{K} \alpha_{L,k}} \times \left(\frac{S_k}{S_{k-1}} - 1\right)^2}$$

#### where:

$S_x$	means the Reference Price of the Index Constituent on Index Business Day $x$ ;
K	means the number of days over which the volatility estimates are calculated (see ${\it K}$ in the Appendix B below);
$\alpha_{S,x}$	means the short period exponential weighting factor calculated as (1 - $\lambda_S$ ) × $\lambda_S^{x-1}$ ;
$\alpha_{L,x}$	means the long period exponential weighting factor and calculated as $(1 - \lambda_L) \times \lambda_L^{x-1}$ ;
$\lambda_{\scriptscriptstyle S}$	means the short period decay factor for the Index (see $\lambda_S$ in the Appendix B below);
$\lambda_L$	means the long period decay factor for the Index (see $\lambda_L$ in the Appendix B below);

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## Appendix A

# **Definitions**

Capitalised terms used in this document but not otherwise defined are defined in the following table.

Term	Definition
Index Business Day	Means any weekdays on which the Index Constituent value is scheduled to be published by its calculation agent
Index Constituent	Means any financial instruments, underlying components or underlying indices as specified in the Ground Rules
Reference Price	Means, in respect of an Index Constituent and an Index Business Day
	(a) which is an Underlying Index, the end of day value of such Underlying Index
	(b) which is a Futures Contract, the daily settlement price of such Futures Contract
Index Base Date	Means the date for which the Index Base Value applies
Index Base Value	Means the arbitrary number (e.g. 1000) set on the Index Base Date as the starting value of an index
Index Base Currency	Means the currency that the Index is calculated in
Index Constituent Currency	Means the currency that the Index Constituent is calculated in
Index Value	Means in respect of an Index and an Index Business Day, the value of the Index
Underlying Index	Means an Index Constituent which is an index, with a corresponding index sponsor and calculation agent
Futures Contract	Means an Index Constituent which is a futures contract traded on a regulated market
Exchange Rate	Means, in respect of an Index, an Index Constituent and an Index Business Day, the foreign exchange rate equal to the WM/R at 04:00pm London time, to convert the Index Constituent Currency to the Index Base Currency. If the currency of the Index Constituent is the same as the Index Base Currency, then the exchange rate shall be 1.
Disrupted Day	Means an Index Business Day on which a Disruption Event has occurred or is continuing
Disruption Event	Means an Underlying Index Disruption Event or a Futures Disruption Event that FTSE Russell deems material
Underlying Index Disruption Event	Means, in respect of an Underlying Index the non-publication of the end of day value of such Underlying Index
Futures Disruption Event	Means, in respect of a Futures Contract, any of the following events:

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Term	Definition						
	(a) Price Failure: the non-publication of the daily settlement price of the Futures Contract						
	(b) Trading Disruption: a material suspension, limitation, disruption of trading, a halt in trading imposed by the relevant exchange on the Futures Contract						
	(c) Exchange Disruption: the exchange upon which the Futures Contract trades is affected by an event that disrupts the ability of market participants to effect transactions in, or obtain market values for such Futures Contract						
	(d) Early Closure: the unscheduled closure of the relevant exchange						
Consequence of a	FTSE Russell may:						
Disruption Event	(a) defer or suspend the calculation and publication of the Index until the next Index Business Day which is not a Disrupted Day; or						
	(b) determine a good faith estimate of any affected or missing input data required to calculate the value of the Index; or						
	(c) use the last available Reference Price for the Index Constituent impacted by the Disruption Event;						
	(d) postpone the rebalancing of the Index Constituent(s)						
Extraordinary Event	Means an Underlying Index Extraordinary Event or a Futures Extraordinary Event that FTSE Russell deems material						
Futures Extraordinary	Means, in respect of a Futures Contract, any of the following events:						
Event	(a) the Futures Contract is no longer negotiated on the relevant exchange						
	(b) the Futures Contract is replaced by a successor product that is not acceptable to FTSE Russell						
	(c) a material change in the expiry calendar, formula or method of calculating such Futures Contract						
	(d) the cancellation of the Futures Contract						
Underlying Index Extraordinary Event	Means, in respect of an Underlying Index, the cancellation of the Underlying Index						
Consequence of an	FTSE Russell may:						
Extraordinary Event	(a) re-weight or substitute the Index Constituent(s) impacted by the Extraordinary Event						
	(b) replace the impacted input data with new data with similar characteristics						
	(c) adjust the value of the Index, or make any other appropriate amendments to the Index						
	(d) modify this Ground Rules						
	(e) terminate the Index						

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## Appendix B

# **Parameters**

## Index details

Index name	Index Base Currency	RIC	Ticker	Index Base Date	Index Base Value	Index Launch Date
FTSE 100 Futures 10% VT Index	GBP	.F1F10VG	F1F10VG	02/01/2015	100	-
FTSE/JSE Top 40 Futures 10% VT Index	ZAR	.FJF10VZ	-	02/01/2015	100	-
FTSE/JSE Top 40 Futures 10% VT USD Index	USD	.FJF10VU	FJF10VU	02/01/2015	100	-
Russell 2000 Futures 10% VT Index	USD	.R2F10VU	R2F10VU	02/01/2015	100	-

## Index constituents details

Index name	Index Constituent	Index Constituent Currency	Index Constituent RIC	Index Constituent Ticker	Index Constituent Type
FTSE 100 Futures 10% VT Index	FTSE 100 Synthetic Excess Return Index	GBP	.TFRFRSIUKXERS	FRSIUKXE	Underlying Index
FTSE/JSE Top 40 Futures 10% VT Index	FTSE/JSE Top 40 Synthetic Excess Return Index	ZAR	.TFTFRSIJ200ERL	-	Underlying Index
FTSE/JSE Top 40 Futures 10% VT USD Index	FTSE/JSE Top 40 Synthetic Excess Return Index	ZAR	.TFTFRSIJ200ERL	-	Underlying Index
Russell 2000 Futures 10% VT Index	Russell 2000 Futures Excess Return Index	USD	.TFRQOVLR2FUTE RU	RTYFPE	Underlying Index

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## Index parameters

Index Name	TV	$L_{M}$	EB	$\lambda_S; \lambda_L$	K	Lag	TR	IR	FC	тс	PerD,PtD	CDCF	<b>DDCF</b>
FTSE 100 Futures 10% VT Index	10%	150%	5%	(0.90;0.98)	100	2	0	N/A	0	0	(0;0)	N/A	NA
FTSE/JSE Top 40 Futures 10% VT Index	10%	150%	5%	(0.90;0.98)	100	2	0	N/A	0	0	(0;0)	N/A	NA
FTSE/JSE Top 40 Futures 10% VT USD Index	10%	150%	5%	(0.90;0.98)	100	2	0	N/A	0	0	(0;0)	N/A	NA
Russell 2000 Futures 10% VT Index	10%	150%	5%	(0.90;0.98)	100	2	0	N/A	0	0	(0;0)	N/A	NA

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