



Custom Volatility Target Index Series

v2.1



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Section 1

Introduction

1.0 Introduction

- 1.1 This document sets out the Ground Rules for the construction and management of the Custom Volatility Target Index Series.
- 1.2 The Custom Volatility Target Index Series deleverages (leverages) i.e. decreases (increases) the allocation to the underlying equity index and increases (decreases) exposure to a risk-free cash return component, as the volatility of the underlying index increases (decreases), in order to target a pre-specified level of volatility. The Total Return and the Excess Return Indices include a cash return component.
- 1.3 Details of the indices included in the Custom Volatility Target Index Series are shown in Appendices A-D.
- 1.4 The Custom Volatility Target Index Series contains certain indices which take account of ESG factors in their index design. Please see the underlying index Ground Rules for further details.
- 1.5 These Ground Rules should be read in conjunction with the corresponding index rules of the component indices, which are available at www.ftserussell.com.
- 1.6 The base currency of the benchmark is US Dollars. Index values may also be published in other currencies.
- 1.7 **FTSE Russell**
 - 1.7.1 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.
 - 1.8 FTSE Russell hereby notifies users of the index series that it is possible that circumstances, including external events beyond the control of FTSE Russell, may necessitate changes to, or the cessation of, the index series and therefore, any financial contracts or other financial instruments that reference the index series or investment funds which use the index series to measure their performance should be able to withstand, or otherwise address the possibility of changes to, or cessation of, the index series.
 - 1.9 Index users who choose to follow these indices or to buy products that claim to follow these indices should assess the merits of the indices' 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.

1.10 These Indices are published at the end of each working day. The Total Return Indices are based on ex dividend adjustments.

Section 2

Management Responsibilities

2.0 Management Responsibilities

2.1 FTSE is the benchmark administrator of the index series.¹

2.2 FTSE is responsible for the daily calculation, production and operation of the index series and will:

- maintain records of the weights of the Custom Volatility Target Index Series;
- make changes to the components and their weightings in accordance with the Ground Rules;
- carry out the periodic reviews of the index series and apply the changes resulting from the reviews as required by the Ground Rules;
- publish changes to the constituent weightings resulting from their ongoing maintenance and the period reviews;
- disseminate the indices.

These Ground Rules set out the methodology and provide information about the publication of the Custom Volatility Target Index Series.

2.2.1 The client stipulates the volatility target, cash rates and daily count basis to be used in the calculation of the 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.

¹ 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

3.0 FTSE Russell Index Policies

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

3.1 Queries, Complaints and Appeals

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

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

3.2 Index Policy for Trading Halts and Market Closures

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

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

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

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

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

3.4 FTSE Russell Policy for Benchmark Methodology Changes

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

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

3.5 FTSE Russell Governance Framework

3.5.1 To oversee its indices, FTSE Russell employs a governance framework that encompasses product, service and technology governance. The framework incorporates the London Stock Exchange Group's three lines of defence risk management framework and is designed to meet the requirements of the IOSCO Principles for Financial Benchmarks², the European benchmark regulation³ and the UK benchmark regulation⁴. The FTSE Russell Governance Framework can be accessed using the following link:

[FTSE Russell Governance Framework.pdf](#)

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

³ 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

⁴ The Benchmarks (Amendment and Transitional Provision) (EU Exit) Regulations 2019

Section 4

SI Data Inputs

4.0 SI Data Inputs

- 4.1 Further information on SI data provided by FTSE Russell and third parties used in this index series can be found in the following guide:

[Guide to FTSE and Third Party Sustainable Investment Data used in FTSE Russell Indices](#)

4.2 Sustainable Investment Metrics

- 4.2.1 Please see the FTSE Russell [Sustainable Investment Metrics](#) website for the scores and values of the environmental, social and governance (ESG) factors listed in Annex II to Delegated Regulation (EU) 2020/1816 which are taken into account in the benchmark methodology for the benchmarks within this index series.

Section 5

Target Risk Exposure and Return on Cash

5.0 Target Risk Exposure and Return on Cash

5.1 Target risk exposure

5.1.1 The Custom Volatility Target Index Series determines exposure to the underlying index from the volatility of that index.

5.1.2 The volatility of the underlying index is calculated using an exponential weighted moving average based on daily underlying index returns.

5.1.3 Two volatility estimates: a short period and a long period estimate, σ_S and σ_L respectively, are calculated over the volatility calculation period of K days at time :

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

$$\sigma_L(t) = \sqrt{252 \sum_{k=t-K+1}^t \frac{\alpha_L(t-k+1)}{\sum_{k=1}^K \alpha_L(k)} \times \left(\ln \frac{S(k)}{S(k-1)} \right)^2} \quad (2)$$

where,

- $S(k)$ is the underlying index value at time k
- K is the number of days over which volatility is calculated
- $\alpha_L(k) = (1 - \lambda_L) \times \lambda_L^{k-1}$ is the long period exponential weighting factor at time k where $\lambda_L \leq 1$ is the long period decay factor
- $\alpha_S(k) = (1 - \lambda_S) \times \lambda_S^{k-1}$ is the short period exponential weighting factor at time k where $\lambda_S \leq 1$, $\lambda_S < \lambda_L$ is the short period decay factor

5.1.4 $\sigma_S(t)$ and $\sigma_L(t)$ are calculated each day for T days. The larger of the short and long horizon volatility estimates over the T days, $\sigma_{MAX}(t)$, is used to determine the target level of risk exposure.

5.1.5 On any business day t , the target level of risk exposure of Custom Volatility Target Indices to the underlying index is calculated as:

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

where:

- L_M is maximum leverage
- α_T is the volatility target
- d is the time lag (in days)

5.1.6 The parameters used in Rules 3.1.1 to 3.1.4 are detailed in Appendix C for each index of the Custom Volatility Target Index Series.

5.2 Cash Return

5.2.1 The Custom Volatility Target Index Series uses the relevant overnight interbank rate as the return on cash.

$$r_C(t) = r(t-1) \times \frac{d(t,t-1)}{\text{DayCount}} \quad (4)$$

where,

- $r(t-1)$ is the overnight interbank rate. The rate applicable to each index is detailed in Appendix B
- $d(t,t-1)$ 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 6

Calculation of Index

6.0 Calculation of Index

6.1 Price Return Indices

6.1.1 The Custom Volatility Target Price Return Indices are calculated as follows:

$$PI(t) = PI(t-1) \times (1 + E(t) \times r_U(t)) \quad (5)$$

where:

- PI is the Price Return Index
- E is the target level of risk exposure
- r_U is the underlying index return

6.2 Total Return Indices

6.2.1 The Custom Volatility Target Total Return Indices are calculated as follows:

$$TRI(t) = TRI(t-1) \times [E(t) \times r_U(t) + (1 - E(t)) \times r_C(t) + 1] \quad (6)$$

where:

- TRI is the Total Return Index
- E is the target level of risk exposure
- r_U is the underlying index return
- r_C is the return on cash on day t

6.3 Excess Return Indices

6.3.1 The Custom Volatility Target Excess Return Indices are calculated as follows:

$$EI(t) = EI(t-1) \times [1 + E(t) \times (r_U(t) - r_C(t))] \quad (7)$$

where,

- EI is the Excess Return Index
- E is the target level of risk exposure
- r_U is the underlying index return
- r_C is the return on cash on day t

6.3.2 The FTSE Divest-Invest Developed 200 Volatility Target Excess Return Index is calculated as follows:

$$EI(t) = EI(t-1) \times \left(\frac{TRI(t)}{TRI(t-1)} - ExcRt \times \frac{D(T,t-1)}{DayCount} \right) \quad (8)$$

where,

- *EI* is the Excess Return Index
- *TRI* is the Total Return Index
- *ExcRt* = 3.0%
- $D(t, t - 1)$ = Number of calendar days between *t* and *t-1*
- *DayCount* is the number of days in a year used in the convention of the corresponding interest rate.

6.4 Calculation Frequency

6.4.1 The Custom Volatility Target Index Series is calculated end-of-day (EOD) after the close of the underlying index.

Section 7

Periodic Rebalancing

7.0 Periodic Rebalancing

7.1 Periodic Rebalancing

- 7.1.1 The target level risk exposure is re-estimated at a fixed frequency detailed in Appendix A for each index in the Custom Volatility Target Index Series.



Appendix A: List of Custom Volatility Target Indices

Index Name	Index Code	Volatility Target	Rebalancing
Custom US Factor Volatility Target Excess Return Index		5%	Daily
FTSE Divest-Invest Developed 200 Volatility Target Excess Return Index GBP		12%	Daily
FTSE Divest-Invest Developed 200 Volatility Target Excess Return Index USD		12%	Daily
FTSE Divest-Invest Developed 200 Volatility Target Excess Return Index 15 GBP		15%	Daily
FTSE Divest-Invest Developed 200 Volatility Target Excess Return Index 15 USD		15%	Daily
FTSE Divest-Invest China A50 Volatility Target Excess Return Index 15 USD		15%	Daily



Appendix B: Underlying Indices and Cash Rates

Index Name	Underlying	Cash Rate	Day Count Basis
Custom US Factor Volatility Target Excess Return Index	Custom Russell 1000 Mom/2Val Factor Long Short Excess Return Index	Not Applicable	Not Applicable
FTSE Divest-Invest Developed 200 Volatility Target Excess Return Index GBP	FTSE Divest-Invest Developed 200 Net Tax Index GBP	Sterling Over Night Index Average (SONIA)	365
FTSE Divest-Invest Developed 200 Volatility Target Excess Return Index USD	FTSE Divest-Invest Developed 200 Net Tax Index USD	Federal Funds Rate	360
FTSE Divest-Invest Developed 200 Volatility Target Excess Return Index 15 GBP	FTSE Divest-Invest Developed 200 Net Tax Index GBP	Sterling Over Night Index Average (SONIA)	365
FTSE Divest-Invest Developed 200 Volatility Target Excess Return Index 15 USD	FTSE Divest-Invest Developed 200 Net Tax Index USD	Federal Funds Rate	360
FTSE Divest-Invest China A50 Volatility Target Excess Return Index 15 USD	FTSE Divest-Invest China A50 Net Tax Index USD	Federal Funds Rate	360

Appendix C: Index Parameters

Index Name	Short Period Decay	Half life of the short decay	Long Period Decay	Half life of the long decay	Volatility period (Days)	Max Volatility Window (Days)	Max Risk Exposure	Time Lag (Days)
	λ_s	days	λ_L	days	K	T	L_m	d
Custom US Factor Volatility Target Excess Return Index	0.94	11.21	0.97	22.76	120	5	1.5	1
FTSE Divest-Invest Developed 200 Volatility Target Excess Return Index GBP	0.95	11.21	0.98	22.76	120	5	1	3
FTSE Divest-Invest Developed 200 Volatility Target Excess Return Index USD	0.95	11.21	0.98	22.76	120	5	1	3
FTSE Divest-Invest Developed 200 Volatility Target Excess Return Index 15 GBP	0.95	11.21	0.98	22.76	120	5	1	3
FTSE Divest-Invest Developed 200 Volatility Target Excess Return Index 15 USD	0.95	11.21	0.98	22.76	120	5	1	3
FTSE Divest-Invest China A50 Volatility Target Excess Return Index 15 USD	0.95	11.21	0.98	22.76	120	5	1	3



Appendix D: Further Information

A Glossary of Terms used in FTSE Russell's Ground Rule documents can be found using the following link: [Glossary.pdf](#)

The FTSE Russell Sustainable Investment Metrics website can be found using the following link: [Sustainable Investment Metrics](#)

Further information on the Custom Volatility Target Indices is available from FTSE Russell.

For contact details please visit the FTSE Russell website or contact FTSE Russell client services at info@ftserussell.com.

Website: www.ftserussell.com

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