

FTSE Daily Short/Leveraged Futures Indices

v1.4



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Section 1

Introduction

1. Introduction

1.1 FTSE Daily Short and Leveraged Futures Indices

1.1.1 The FTSE Daily Short Futures Indices (Daily Short Futures Indices) and the FTSE Daily Leveraged Futures Indices (Daily Leveraged Futures Indices) – together defined as Short/Leveraged Futures indices – aim to reflect the performance of a multiple of the inverse daily performance (when short) or of a multiple of the daily performance (when leveraged) of an underlying index mirroring the evolution of a futures contract.

1.1.2 The Short/Leveraged Futures Indices do not take account of ESG factors in their index design.

1.1.3 The base currency of the benchmark is Euro. Index values may also be published in other currencies.

1.2 Objective

The objective of the Short/Leveraged Futures indices is to reflect:

- the inverse leveraged performance of the underlying index, where inverse leverage levels are reset daily (short); and
- the leveraged performance of the underlying index, where leverage levels are reset daily (leveraged).

The indices take into account the three components of the performance of short/leveraged indices:

1. capital gains associated with the underlying index;
2. interest on capital associated with the sale of the securities using the index as underlying (usually securitised derivatives); and
3. costs associated with the management of futures positions.

1.3 Index features, terms, base dates and base values

The features of each index, including base dates, base values, index terms, index calculation times and vendor codes can be found at:

[Real Time Short and Leveraged Futures Index Features.xlsx](#)

1.4 Computational accuracy

The indices will be calculated to 13 decimal figures and published rounded to two decimal places.

1.5 Frequency and time of calculation

The Short/Leveraged Futures Indices will be calculated on a real-time basis.

1.6 Trading suspension

The Short/Leveraged Futures indices are calculated on the same days as the underlying futures are traded. If there is a suspension of an underlying futures contract, the Short/Leveraged Futures indices will be calculated using the latest value available and will then itself be suspended.

1.7 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, FTSE (Beijing) Consulting Limited, Refinitiv Benchmark Services (UK) Limited, Refinitiv Limited 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 this index series, should assess the merits of the index's rules-based methodology and take independent investment advice before investing their own or client funds. No liability whether as a result of negligence or otherwise is accepted by FTSE Russell or its licensors (or any person concerned with the preparation or publication of these Ground Rules) for any losses, damages, claims and expenses suffered by any person as a result of:

- any reliance on these Ground Rules;
- any inaccuracies in these Ground Rules;
- 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 Ground Rules

These Ground Rules provide information about the publication of the Short/Leveraged Futures indices and set out the methodology underlying them.

1.11 Status of the indices

The status of the calculated indices is determined both by the calculation status and with reference to status of the underlying reference index.

A table of possible index status codes arising is shown below:

Index status codes	
Underlying reference index status	Short/Leveraged Index Status
N (normal)	N (normal)
N (normal, during intra-day reset)	X (exception, during intra-day reset)
N (normal, post intra-day reset)	R (index reset, post intra-day reset)
K (part calculated)	N (normal)
I (indicative)	H (hold, calculate but don't publish and do not apply intra-day resets)
H (hold)	H (hold)
C (closed)	C (closed)

Section 2

Management responsibilities

2. Management responsibilities

2.1 FTSE International Limited (FTSE)

2.1.1 FTSE is the benchmark administrator of the index series¹.

2.1.2 FTSE is responsible for the daily calculation, production and operation of the indices, 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 index reviews of the indices and apply the changes resulting from the reviews as required by the Ground Rules;
- publish changes to the constituent weightings resulting from their ongoing maintenance and the periodic reviews;
- disseminate the indices.

2.2 Amendments to these Ground Rules

2.2.1 These Ground Rules shall be subject to regular review (at least once a year) by FTSE Russell to ensure that they continue to 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.

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. FTSE Russell index policies

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

3.1 Queries and Complaints

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

[FTSE Russell 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:

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

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

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

[FTSE Russell Index Policy in the Event Clients are Unable to Trade a Market.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:

[FTSE Russell 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 ensure compliance with 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](#)

3.6 Real Time Status Definitions

3.6.1 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](#)

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

The index

4. The index

4.1 Index calculation

The Short/Leveraged Futures Index Value is calculated as 1 plus the return (r) since the start of the current calculation session multiplied by the previous session's inverse leveraged (when short) or leveraged (when leveraged) FTSE Rolling Futures index closing value. (The FTSE Rolling Futures index is built to follow the evolution of futures prices for the front month contract.)

Daily Short Futures Index:

$$SIDX_t = SIDX_s \times (1+r)$$

Daily Leveraged Futures Index:

$$LIDX_t = LIDX_s \times (1+r)$$

4.2 Return calculation (r)

The return r consists of the inverse leveraged performance (when short) or leveraged performance (when leveraged) of the underlying index plus the interest income from the sale of securities using the index as underlying (usually securitised derivatives) less financing and operational costs.

$$r = (LIP_t + II_{t,t-1} - FOC_{t,t-1})$$

4.3 Inverse leveraged/leveraged index performance (LIP_t)

The inverse leveraged performance arises as a result of selling the index futures multiple (K) times. The leveraged performance arises as a result of buying the index futures multiple (K) times.

The inverse leveraged performance/leveraged performance is calculated relative to the previous day's closing value on days where no intra-day reset occurs. If an intra-day reset occurs the short/leveraged index return is calculated relative to the previous session's final index value.

Daily Short Futures Index:

$$LIP_t = \left[-K \times \left(\frac{IDX_t}{IDX_s} - 1 \right) \right]$$

Daily Leveraged Futures Index:

$$LIP_t = \left[K \times \left(\frac{IDX_t}{IDX_s} - 1 \right) \right]$$

4.4 Interest income (II_{t,t-1})

The interest income arises on the cash proceeds received from selling the securities adopting the index as underlying (usually securitised derivatives). It is assumed that cash earns the overnight interest rate.

The interest income for $D_{t,t-1}$ calendar days is:

$$II_{t,t-1} = \left[\left(\frac{ONIR_{t-2}}{\text{DayCountBasis}} \right) \times D_{t,t-1} \right]$$

If an intra-day rebalance is triggered, no additional interest income is earned and thus no additional interest income is applied after an intra-day reset.

The interest income will be set to 0 (zero) for indices where it is not be applicable.

In the calculation of historical values, before 2022 the (t-1) rates will be used instead of (t-2).

4.5 Financing and operational cost (FOC_{t,t-1})

Trading in derivatives implies further costs that need to be included: financing costs, margins paid on futures open positions, cost of quarterly roll.

$$FOC_{t,t-1} = \left(K \times CP \times \frac{D_{t,t-1}}{\text{DayCountBasis}} \right)$$

The cost parameter (CP) is fix and shown in the table in chapter 7.

A technical notice is issued at the close of the third Wednesday of February, May, August and November providing notice of the new CP effective from the Monday following the third Friday of the next month.

4.6 Extreme market movements

To mitigate the risk of total loss due to extreme market movements, an intra-day reset mechanism is employed. An intra-day reset is triggered by movements in the underlying index that are greater than specific limits shown in the table below.

To determine whether an intra-day reset is triggered, the most recent value of the underlying index is compared to the previous session's final level. If the gain (short indices) or the loss (leveraged indices) in the underlying index is greater than or equal to the trigger level for the relevant level of leverage, the intra-day reset process is initiated.

The previous session's final level is normally the previous trading day's closing level, but in the case of an intra-day reset being triggered, it is the maximum (short indices) or minimum (leveraged indices) underlying index value observed during the 10-minute observation period.

Leverage factors		
Index	Leverage factor	Intra-day reset trigger levels
FTSE 1x Daily Short/Leveraged Futures Index	1	25%
FTSE 2x Daily Short/Leveraged Futures Index	2	25%
FTSE 3x Daily Short/Leveraged Futures Index	3	20%
FTSE 4x Daily Short/Leveraged Futures Index	4	15%
FTSE 5x Daily Short/Leveraged Futures Index	5	14%
FTSE 6x Daily Short/Leveraged Futures Index	6	12%
FTSE 7x Daily Short/Leveraged Futures Index	7	11%

4.7 Intra-day reset procedure

The intra-day reset procedure is invoked if a predefined movement in the underlying index is exceeded, unless the timing exceeds the values published in the list of chapter 7. In this situation the index will continue to be calculated normally.

If the timing is prior such values, the following process is followed.

- i. The calculated index status is set to X and held for the duration of the 10-minute observation period.
- ii. The value of the underlying index at the beginning of the observation period is recorded.
- iii. All values of the underlying index during the 10-minute observation period are recorded.
- iv. The maximum value (short indices) or minimum value (leveraged indices) of the underlying index recorded during the observation period determines the session's closing value, denoted as TRGs.
- v. The closing session value of the underlying index i.e. TRGs is published.
- vi. The index is held for a further two minutes to allow the reset process to complete. The index status is set to R and the index continues to publish values based on the TRGs, defined as SIDX_s or LIDX_s.

The intra-day reset is carried out by simulating the beginning of a new business day. However no additional interest income or finance and operational cost are included.

From the reset point onwards, the return on the Daily Short Index is simply the inverse leveraged return on the underlying index (where the previous session should be intended as the one closed at the value $SIDX_s$):

$$SIDX_t = SIDX_s \times \left\{ 1 + \left[-K \times \left(\frac{IDX_t}{TRG_s} - 1 \right) \right] \right\}$$

From the reset point onwards, the return on the Daily Leveraged Index is simply the leveraged return on the underlying index (where the previous session should be intended as the one closed at the value $LIDX_s$):

$$LIDX_t = LIDX_s \times \left\{ 1 + \left[K \times \left(\frac{IDX_t}{TRG_s} - 1 \right) \right] \right\}$$

If subsequent movements of the underlying index after an intra-day reset result in an additional breach of the trigger levels (calculated with reference to TRGs), an additional intra-day reset will be invoked.

Main information about the intra-day reset is immediately published on an FTP site available to clients, detailing date, time of the start of the observation interval, maximum value of the underlying index in the observation interval, first value of the short index following the reset.

A technical notice will be issued to the market within a reasonable timeframe notifying the intra-day reset had triggered and including the information above.

4.8 Index termination

If the short/leveraged index moves below the level of 0.01 a termination procedure will be implemented.

The index will be immediately placed on hold and values will be no longer calculated.

A technical notice will be issued to the market announcing the discontinuation, which will become effective after 15 business days.

Section 5

Formula symbols

5. Formula symbols

5.1 Subscripts

- s = Previous session
- t = Current session
- $t-1$ = Previous calculation day

5.2 Main terms

- DayCountBasis = Day count convention for the interest rates. See table in chapter 7
- $D_{t,t-1}$ = Number of calendar days between current session and previous calculation date $t-1$
- FOC = Financing and operational cost
- IDX_s = Previous session underlying index level
- IDX_t = Most recent underlying Index level
- K = Leverage factor
- $LIDX_s$ = Previous session Daily Leveraged Index value
- $LIDX_t$ = Current session Daily Leveraged Index value
- LIP_t = Inverse leveraged/Leveraged performance at time t
- ONIR = Overnight interest rate. See table in chapter 7
- r = Session return
- $SIDX_s$ = Previous session Daily Short Index value
- $SIDX_t$ = Current session Daily Short Index value

Section 6

Glossary

6. Glossary

6.1 Euro Overnight Index Average (EONIA)⁵

EONIA[®] is the effective overnight reference interest rate for the Euro. It is computed as a weighted average of all overnight unsecured lending transactions undertaken in the interbank market, initiated within the Euro area by the contributing banks.

Refinitiv publishes the EONIA[®] reference rate on the “EONIA=” page, which is made available to all its subscribers and to other data vendors.

6.2 ESTR (€STR)

The Euro short-term rate (ESTR) reflects the wholesale Euro unsecured overnight borrowing costs of banks located in the Euro area. The ESTR is based entirely on daily confidential statistical information relating to money market transactions collected in compliance with the money market statistical reporting (MMSR) regulation.

6.2.1 Refinitiv publishes the ESTR reference rate on the “EUROSTR=” page, which is made available to all its subscribers and to other data vendors.

6.3 Hong Kong Interbank Offered Rate (HIBOR)

HIBOR is the annualised rate charged for interbank lending on Hong Kong Dollar (HKD) denominated instruments for a specified period ranging from overnight to 12 months. It is calculated each business day at 11:00 local time based on quotations from 20 banks designated by the Hong Kong Association of Banks (HKAB).

6.4 Sterling Overnight Interbank Average Rate (SONIA)

SONIA is the weighted average rate of all unsecured sterling overnight cash transactions brokered in London between midnight and 16:15 with all counterparties in a minimum deal size of £25 million. It is the weighted average overnight deposit rates for each business day and the index is published at 17:00 London time each day.

6.5 Tokyo Interbank Offered Rate (TIBOR)

TIBOR is the daily reference rate based on the interest rates at which banks offer to lend unsecured funds to other banks in the Japan wholesale money market. The quotes are provided at about 11:00 JST.

⁵ EONIA was replaced by ESTR on January 3, 2022.

Section 7

Example calculation

7. Example calculation

7.1 Example calculation

7.1.1 Calculate the FTSE MIB Daily Leverage Short Futures x5 Index value (for a Monday).

Model inputs

€STR	=	1.403
Day count basis	=	360
Operating cost	=	60bps
Leverage factor	=	-5
SIDXs	=	2,130.67
IDXs	=	23,212.34
IDXt	=	22,964.61

Model outputs

Number of actual calendar days (Dt,t-1)	=	3
Return on underlying index	=	-1.07%
Leveraged inverse return	=	5.34%
Interest income	=	0.0117%
Operative cost	=	0.0050%
Return (r)	=	5.32%
1+r	=	1.0532
SIDXt	=	2,244.09

7.2 List of short/leveraged futures indices

Index code	Index name	Leverage factor	ISIN
1. FMIBFLX5	FTSE MIB Daily Futures Leverage Long x5 Index	5	GB00BMGQMG57
2. FMIBFLX7	FTSE MIB Daily Futures Leverage Long x7 Index	7	GB00BMGQMH64
3. FMIBFSX5	FTSE MIB Daily Futures Leverage Short x5 Index	5	GB00BMGQMJ88
4. FMIBFSX7	FTSE MIB Daily Futures Leverage Short x7 Index	7	GB00BMGQMK93

7.3 Financing and operational cost

Cost parameter		
Index code	Index name	Cost parameter (bps)
1. FMIBFLX5	FTSE MIB Daily Futures Leverage Long x5 Index	60
2. FMIBFLX7	FTSE MIB Daily Futures Leverage Long x7 Index	60
3. FMIBFSX5	FTSE MIB Daily Futures Leverage Short x5 Index	60
4. FMIBFSX7	FTSE MIB Daily Futures Leverage Short x7 Index	60

7.4 Day count conventions

Day count conventions		
Index code	Index name	Convention
1. FMIBFLX5	FTSE MIB Daily Futures Leverage Long x5 Index	30/360
2. FMIBFLX7	FTSE MIB Daily Futures Leverage Long x7 Index	30/360
3. FMIBFSX5	FTSE MIB Daily Futures Leverage Short x5 Index	30/360
4. FMIBFSX7	FTSE MIB Daily Futures Leverage Short x7 Index	30/360

7.5 Intra-day reset timing threshold

Intra-day reset not triggered after		
Index code	Index name	Timing threshold
1. FMIBFLX5	FTSE MIB Daily Futures Leverage Long x5 Index	17:16:59 CET/CEST
2. FMIBFLX7	FTSE MIB Daily Futures Leverage Long x7 Index	17:16:59 CET/CEST
3. FMIBFSX5	FTSE MIB Daily Futures Leverage Short x5 Index	17:16:59 CET/CEST
4. FMIBFSX7	FTSE MIB Daily Futures Leverage Short x7 Index	17:16:59 CET/CEST

7.6 Overnight interest rates

Overnight interest rates		
Index code	Index name	Overnight rate
1. FMIBFLX5	FTSE MIB Daily Futures Leverage Long x5 Index	€STR <small>(EONIA before 2022)</small>
2. FMIBFLX7	FTSE MIB Daily Futures Leverage Long x7 Index	€STR <small>(EONIA before 2022)</small>
3. FMIBFSX5	FTSE MIB Daily Futures Leverage Short x5 Index	€STR <small>(EONIA before 2022)</small>
4. FMIBFSX7	FTSE MIB Daily Futures Leverage Short x7 Index	€STR <small>(EONIA before 2022)</small>

7.7 Index base

Index base		
Index code	Index name	Base
1. FMIBFLX5	FTSE MIB Daily Futures Leverage Long x5 Index	30 December 2022 = 1,000.00
2. FMIBFLX7	FTSE MIB Daily Futures Leverage Long x7 Index	30 December 2022 = 1,000.00
3. FMIBFSX5	FTSE MIB Daily Futures Leverage Short x5 Index	30 December 2022 = 1,000.00
4. FMIBFSX7	FTSE MIB Daily Futures Leverage Short x7 Index	30 December 2022 = 1,000.00

Appendix A

Further information

A Glossary of Terms used in FTSE Russell's Ground Rule documents can be found using the following link:

[Glossary.pdf](#)

For further information on the FTSE Daily Short Indices Ground Rules, visit www.lseg.com/en/ftse-russell/ or e-mail info@ftserussell.com. Contact details can also be found on this website.

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