

Ground Rules for the Management of the FTSE MTIRS Index Series

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SECTION ONE: GROUND RULES

Introduction - Ground Rule 1

1.1 The FTSE MTIRS Index Series

1.1.1 The FTSE MTIRS Index Series US Dollar Indices were launched in September 2006 and are owned by FTSE International Limited. They are a series of swaps indices covering the principal interest rate swaps markets.

1.1.2 The series consists of four interest rate swaps indices:

- FTSE MTIRS Index Series US Dollar Indices
- FTSE MTIRS Index Series Euro Indices
- FTSE MTIRS Index Series Yen Indices
- FTSE MTIRS Index Series Sterling Indices

A full list of the indices and sub indices is available in Appendix A.

1.2 These Ground Rules

1.2.1 This paper sets out the Ground Rules for the management of the FTSE MTIRS Index Series US Dollar Indices, as adopted by the FTSE Bond Indices Committee, an independent group of market participants.

1.2.2 Further versions of these ground rules will define the specific details for the Euro, Yen, and Sterling Swaps Indices.

1.3 Index Series Objectives

1.3.1 The objective is to create and maintain a series of indices for the international swaps markets for use as benchmarks and trading vehicles by the global investment community. To achieve this, we have sought to establish the Index Series as being:

- Comprehensive
- Consistent
- Flexible
- Accurate
- Investable
- Transparent
- Predictable
- Representative
- User-driven

1.4 Indices

1.4.1 All FTSE MTIRS Index Series US Dollar Indices are calculated as real-time indices and a fixing will be taken each day at 15:00 GMT for history building purposes.

1.4.2 The FTSE MTIRS Index Series US Dollar Indices has the following indices:

- **Interest Rate Swaps** - 29 Indices: 2 - 30 year swaps
- **Swaps Spreads** – 10 Indices: combinations of benchmark lifetimes (i.e. 2, 3, 5 10, 30)
- **Butterfly Swaps** – 6 Indices: combinations of benchmark lifetimes (e.g. 2x3x10)

See Appendix B for a full list of Indices.

Introduction - Ground Rule 1

1.5 Characteristics of the Index Series

- 1.5.1 FTSE MTIRS Index Series US Dollar Indices consist of the main swap terms (i.e. 2 - 30 years) and Swap and Butterfly Indices for the benchmark lifetimes.

For better understanding of the index, some aspects on the main underlying structure of the USD swap market are detailed below:

The USD IRS market is defined in relation to the standard on-the-run US Treasury bonds. These benchmark bonds have lifetimes of (at issue time) 2, 3, 5, 10 and 30 years.

IRS rates are defined as a result of spreads quoted versus US Treasury benchmark bond mid yields versus the benchmark lifetimes of 2, 3, 5, 10 and 30 years, and using interpolations for the non-benchmark lifetimes.

For FTSE MTIRS Index Series US Dollar Indices, the "Semi Bond" standard USD IRS day count convention is used:

Fixed rate paid 30/360 semi-annually modified following (UK business days) and floating rate 3-month LIBOR act/360 quarterly modified following (UK business days)

1.6 Index Methodology

- 1.6.1 All indices are based on swaps that follow the standard IRS day count convention in the respective market.

All indices are calculated using mid swap rates, the bid and offer differences are not taken into account.

The start of the daily real-time index valuations is 09:00 CET = 08:00 UK.

There is a daily fixing of the index values for index history-building purposes, at 10:00 NY = 16:00 CET = 15:00 UK. A product file is produced at this time and disseminated to clients.

The end of the daily real-time index valuations is 17:00 NY = 23:00 CET = 22:00 UK.

Notional Amounts

Since all indices have started with an index value of 100.0, there is no need to officially use a certain notional amount. Every index value can be converted in any nominal amount by multiplication. For the calculation of the indices reflecting Spread Trades and Butterfly Trades however, certain adjustments to the notional amounts need to be undertaken.

Spread Trades

The notional amount of the long leg (which is bought into the index) is set to 25 million USD. The notional amount of the short leg (which is sold into the index) is adjusted so that the basis point value of the short leg, at the start of the index, or at rebalancing time respectively, (see *Rebalancing the Indices*, below) shall be the same as the basis point value of the long leg. The notional amount of the short leg is rounded to the nearest 0.5 million USD.

Butterfly Trades

The notional amount of the body (which is bought into the index) shall be set to 25 million USD. The body shall be considered being divided into two parts of 12.5 million USD each. The notional amounts of each of the wings (which are sold into the index) is adjusted so that its basis point value, at the start of the index, or at rebalancing time respectively (see *Rebalancing the Indices*, below), shall be the same as the basis point value of the half body. The notional amount of the adjusted legs is rounded to the nearest 0.5 million USD.

Index Data to Publish

The index values start with 100.0 so that a change by 1 would result in an index value of 101.0 or 99.0 respectively. The index figures can be considered synthetic.

Price Sources - Ground Rule 2

2.1 Price Sources

2.1.1 Input Data Sources

All calculations are performed using quoted IRS Semi Bond Swap rates, plus standard USD LIBOR rates (Thomson Reuters page 3750) which are used as the source for interpolations (LIBOR for 1, 2, 3, 6 months and 1 year).

The source for IRS Semi Bond Swap rates is the rates displayed on Thomson Reuters, where there are quotes available for both offer and bid, for 2 - 15 years in steps of 1 year, then for 20, 25 and 30 years.

Initially the mid swap rates for all these lifetimes are calculated, and then the interpolations of mid swap rates for the lifetimes of 16-19, 21-24 and 26-29 years, using the 15, 20, 25 and 30 year rates respectively are calculated. These rates are the source for the valuations for all synthetic swaps, and thus for the calculation of all indices.

On days where there is a business day in NY but not in UK, the LIBOR rates of the previous UK business day are used, unchanged.

Periodic Changes to the Portfolios – Ground Rule 3

3.1 Rebalancing the Indices

3.1.1 All FTSE MTIRS Index Series US Dollar Indices are rebalanced daily.

To avoid cash flows paid out from the synthetic swap positions, all IRS trades are sold and newly bought, synthetically, once every day. This rebalancing avoids the shortening of lifetimes of all positions which, at the beginning, are full years, so that they can not become less than the respective years.

The rebalancing procedures, which include the re-calculation of notional amounts for Spread and Butterfly Trade indices, take place daily at 10:00 NY = 16:00 CET = 15:00 UK.

3.2 Settings at Origin and Resets at Rebalance

3.2.1 Interest Rate Swaps semi bond trades.

Periods:

2-year, 3-year, 5-year, 10-year, 11-year, 12-year, 30-year, 40-year. The index reflects to buy the swap.

Settings at Origin:

1. Trade date: Index origin date.
2. Notional principal amount: 1 Million US Dollars.
3. Value date: 2 good business days (spot).
4. Maturity date: The duration of the Interest Rate Swap.
5. Treasury hedge: Current on-the-run.
6. Treasury hedge amount: to be determined.
7. Fixed rate: At mid market current treasury yield, plus at mid market interest rate swap spread to current treasury yield, semi bond.
8. Interest rate swap Spread to current treasury yield: At mid market.
9. Treasury price: At mid market.
10. Treasury yield: At mid market.
11. Fixed rate interest rate calculation: 30/360 adjusted bond basis.
12. Fixed rate payable: Semi annual.
13. Fixed rate payments dates: Semi annual.
14. Floating rate: 3 month LIBOR.
15. First floating rate: LIBOR.
16. First floating rate set for period ending: 3 month LIBOR.
17. Floating rate interest rate calculation: Actual/360.
18. Floating rate reset: Quarterly.
19. Floating rate payable: Quarterly.
20. Floating rate payment dates: Quarterly.
21. Floating rate held and compounded: No.
22. Payment exchange: Net payment.
23. Mutual put: No.

Resets at Rebalance:

24. Trade date: The day of the rebalance date.
25. Value date: 2 good business days (spot).
26. Maturity date: The duration of the IRS.
27. Interest Rate Swap spread to current treasury yield: At mid market.
28. Treasury hedge: current on the run.
29. Treasury hedge amount: to be determined.
30. Treasury yield: At mid market.
31. Treasury price: At mid market.

32. Fixed rate: At mid market current treasury yield, plus at mid market interest rate swap spread to current treasury yield semi bond.
33. Fixed rate payments dates: Semi annual.
34. Floating rate: 3 month LIBOR.
35. First floating rate set for period ending: 3 month LIBOR.
36. Fixed rate payments dates: Semi annual.

Terms and Conditions:

37. Non-business day: ISDA documentation.
38. Ref source for interest rate swap spread to current treasury yield: Thomson Reuters.
39. Ref source for treasury yield: FTSE.
40. Ref source for floating rate: Thomson Reuters page 3750 (BBA LIBOR Rates).
41. Conditions: ISDA documentation.

Periods:

4-year, 6-year, 7-year, 8-year, 9-year, 13-year, 14-year, 15-year, 16-year, 17-year, 18-year, 19-year, 20-year, 21-year, 22-year, 23-year, 24-year, 25-year, 26-year, 27-year, 28-year, and 29-year. The index reflects to buy the swap.

Settings at Origin:

1. Trade date: Index origin date.
2. Notional principal amount: 1 Million US Dollars.
3. Value date: 2 good business days (spot).
4. Maturity date: The duration of the Interest Rate Swap.
5. Treasury hedge amount # 1.: To be determined.
6. Treasury hedge amount # 2.: To be determined.
7. Fixed rate: At mid market interpolated current treasury yield, plus at mid market interest rate swap spread to current treasury yield semi bond.
8. Treasury price #1: At mid market.
9. Treasury price #2: At mid market.
10. Treasury yield #1: At mid market.
11. Treasury yield #2: At mid market.
12. Interpolated treasury yield: At mid market.
13. Interest rate swap spread to current treasury yield: at mid market.
14. Fixed rate interest rate calculation: 30/360 adjusted bond basis.
15. Fixed rate payable: Semi annual.
16. Fixed rate payments dates: Semi annual.
17. Floating rate: 3 month LIBOR.
18. First floating rate: LIBOR.
19. First floating rate set for period ending: 3 month LIBOR.
20. Floating rate interest rate calculation: Actual/360.
21. Floating rate reset: Quarterly.
22. Floating rate payable: Quarterly.
23. Floating rate payment dates: Quarterly.
24. Floating rate held and compounded: No.
25. Payment exchange: Net payment.
26. Mutual put: No.

Resets at Rebalance:

27. Trade date: The day of the rebalance date.
28. Value date: 2 good business days (spot).
29. Maturity date: The duration of the IRS.
30. Interest rate swap spread to current treasury yield: At mid market.
31. Treasury hedge amount # 1.: To be determined.
32. Treasury hedge amount # 2.: To be determined.
33. Treasury hedge # 1: Current on the run.
34. Treasury hedge # 2: Current on the run.

35. Treasury price #1: At mid market.
36. Treasury price #2: At mid market.
37. Treasury yield #1: At mid market.
38. Treasury yield #2: At mid market.
39. Fixed rate: At mid market current treasury yield, plus at mid market interest rate swap spread to current treasury yield, semi bond.
40. Fixed rate payments dates: Semi annual.
41. Floating rate: 3 month LIBOR.
42. First floating rate set for period ending: 3 month LIBOR.
43. Fixed rate payments dates: Semi annual.

Terms and Conditions:

44. Non business day: ISDA documentation.
45. Ref source for interest rate swap spread to current treasury yield: Thomson Reuters.
46. Ref source for treasury yield: FTSE.
47. Ref source for floating rate: Thomson Reuters page 3750 (BBA LIBOR Rates).
48. Conditions: ISDA documentation.
49. When there is no current treasury for the IRS period, an interpolated yield is calculated using the closest current treasury before and after the maturity date.
50. When there is no current treasury for the IRS period, the treasury hedge amount is calculated using a combination of the closest current on the run treasury before and after the maturity date.

3.2.2 Semi bond spread trades

Periods:

1. 1a) 2-year x 3-year. 1b) 2-year x 5-year. 1c) 2-year x 10-year.
1d) 2-year x 30-year.
2. 2a) 3-year x 5-year. 2b) 3-year x 10-year. 2c) 3-year x 30-year.
3. 3a) 5-year x 10-year. 3b) 5-year x 30-year.
4. 4a) 10-year x 30-year.

The IRS spread requires two simultaneous trades buying or selling the shorter period (short leg), whilst trading the reverse selling or buying the longer period (long Leg).

The index reflects to buy the longer period.

Note: not to be confused with a spread to treasury or bid offer spread.

Short Leg Settings at Origin:

1. Trade date: Index origin date.
2. Notional principal amount: Duration weight.
3. Value date: 2 good business days (spot).
4. Maturity date: The duration of the Interest Rate Swap.
5. Treasury hedge: Current on-the-run.
6. Treasury hedge amount: to be determined.
7. Fixed rate: At mid market current treasury yield, plus at mid market interest rate swap spread to current treasury yield, semi bond.
8. Interest rate swap spread to current treasury yield: At mid market.
9. Current treasury yield: At mid market.
10. Current treasury price: At mid market.
11. Fixed rate interest rate calculation: 30/360 adjusted bond basis.
12. Fixed rate payable: Semi annual.
13. Fixed rate payments dates: Semi annual.
14. Floating rate: 3 month LIBOR.
15. First floating rate: LIBOR.
16. First floating rate set for period ending: 3 month LIBOR.
17. Floating rate interest rate calculation: Actual/360.
18. Floating rate reset: Quarterly.
19. Floating rate payable: Quarterly.

20. Floating rate payment dates: Quarterly.
21. Floating rate held and compounded: No.
22. Payment exchange: Net payment.
23. Mutual put: No.

Reset at Rebalance:

24. Trade date: The day of the rebalance date.
25. Notional principal amount: Duration weight.
26. Value date: 2 good business days (spot).
27. Maturity date: The duration of the IRS.
28. Interest rate swap spread to current treasury yield: At mid market.
29. Treasury hedge: Current on-the-run.
30. Treasury hedge amount: to be determined.
31. Treasury price: At mid market
32. Fixed rate: At mid market current treasury yield, plus at mid market interest rate swap spread to current treasury yield, semi bond
33. Fixed rate payments dates: Semi annual.
34. Floating rate: 3 month LIBOR.
35. First floating rate set for period ending: 3 month LIBOR.
36. Floating rate payment dates: Quarterly.

Terms and Conditions:

37. Non business day: Modified following ISDA documentation.
38. Ref source for floating rate: Thomson Reuters page 3750 (BBA LIBOR Rates).
39. Ref source for interest rate swap spread to current treasury yield: Thomson Reuters.
40. Ref source for treasury yield: FTSE.
41. Conditions: ISDA documentation.

Long Leg Settings at Origin:

1. Trade date: Index origin date.
2. Notional principal amount: 25 Million US Dollars.
3. Value date: 2 good business days (spot).
4. Maturity date: The duration of the Interest Rate Swap.
5. Treasury hedge: Current on-the-run.
6. Treasury hedge amount: to be determined.
7. Fixed rate: At mid market current treasury yield, plus at mid market interest rate swap spread to treasury yield, semi bond.
8. Interest rate swap spread to current treasury yield: At mid market.
9. Treasury yield: At mid market.
10. Treasury price: At mid market.
11. Fixed rate interest rate calculation: 30/360 adjusted bond basis.
12. Fixed rate payable: Semi annual.
13. Fixed rate payments dates: Semi annual.
14. Floating rate: 3 month LIBOR.
15. First floating rate: LIBOR.
16. First floating rate set for period ending: 3 month LIBOR.
17. Floating rate interest rate calculation: Actual/360.
18. Floating rate reset: Quarterly.
19. Floating rate payable: Quarterly.
20. Floating rate payment dates: Quarterly.
21. Floating rate held and compounded: No.
22. Payment exchange: Net payment.
23. Mutual put: No.

Reset at Rebalance:

24. Trade date: The day of the rebalance date.
25. Value date: 2 good business days (spot).
26. Maturity date: The duration of the IRS.
27. Interest rate swap spread to current treasury yield: At mid market.
28. Treasury hedge: Current on-the-run.
29. Treasury hedge amount: to be determined.

30. Treasury price: At mid market.
31. Fixed rate: At mid market current treasury yield, plus at mid market interest rate swap spread to current treasury yield, semi bond.
32. Fixed rate payments dates: Semi annual.
33. Floating rate: 3 month LIBOR.
34. First floating rate set for period ending: 3 month LIBOR.
35. Floating rate payment dates: Quarterly.

Terms and Conditions:

36. Non business day: ISDA documentation.
 37. Ref source for interest rate swap spread to current treasury yield: Thomson Reuters.
 38. Ref source for treasury yield: FTSE.
 39. Ref source for floating rate: Thomson Reuters page 3750 (BBA LIBOR Rates).
 40. Conditions: ISDA documentation.
- Note: It is standard market practice to apply the notional principle amount to the longer leg with the short leg being duration weighted

3.2.3 Semi bond butterfly trades

Periods:

1. 1a) 2-year x 3-year x 5-year. 1b) 2-year x 5-year x 10-year.
1c) 2-year x 10-year x 30-year.
2. 2a) 3-year x 5-year x 10-year. 2b) 3-year x 10-year x 30-year.
3. 3a) 5-year x 10-year x 30-year.

The IRS butterfly requires three simultaneous trades buying or selling the shorter period and longer period, (the wings) whilst trading in the opposite direction, selling or buying the middle period (the body). The index reflects to buy the body and sell the wings

Short Wing Settings at Origin:

1. Trade date: Index origin date.
2. Notional principal amount: Duration weight.
3. Value date: 2 good business days (spot).
4. Maturity date: The duration of the Interest Rate Swap.
5. Treasury hedge: Current on-the-run.
6. Treasury hedge amount: to be determined.
7. Fixed rate: At mid market current treasury yield, plus at mid interest rate swap market spread to current treasury yield, semi bond.
8. Interest rate swap spread to current treasury yield: At mid market.
9. Treasury yield: At mid market.
10. Treasury price: At mid market.
11. Fixed rate interest rate calculation: 30/360 adjusted bond basis.
12. Fixed rate payable: Semi annual.
13. Fixed rate payments dates: Semi annual.
14. Floating rate: 3 month LIBOR.
15. First floating rate: LIBOR.
16. First floating rate set for period ending: 3 month LIBOR.
17. Floating rate interest rate calculation: Actual/360.
18. Floating rate reset: Quarterly.
19. Floating rate payable: Quarterly.
20. Floating rate payment dates: Quarterly.
21. Floating rate held and compounded: No.
22. Payment exchange: Net payment.
23. Mutual put: No.

Reset at Rebalance:

24. Trade date: The day of the rebalance date.
25. Notional principal amount: Duration weight.
26. Value date: 2 good business days (spot).
27. Maturity date: The duration of the IRS.

28. Spread to treasury yield: At market.
29. Treasury hedge: Current on-the-run.
30. Treasury hedge amount: to be determined.
31. Treasury price: At mid market.
32. Fixed rate: At mid market current treasury yield, plus at mid market interest rate swap spread to current treasury yield, semi bond.
33. Fixed rate payments dates: Semi annual.
34. Floating rate: 3 month LIBOR.
35. First floating rate set for period ending: 3 month LIBOR.
36. Floating rate payment dates: Quarterly.

Terms and Conditions:

37. Non business day: Modified following ISDA documentation.
38. Ref source for floating rate: Thomson Reuters page 3750 (BBA LIBOR Rates).
39. Ref source for interest rate swap spread to current treasury yield: Thomson Reuters.
40. Ref source for treasury yield: FTSE.
41. Conditions: ISDA documentation.

Body Settings at Origin:

1. Trade date: Index origin date.
2. Notional principal amount: 25 Million US Dollars.
3. Value date: 2 good business days (spot).
4. Maturity date: The duration of the Interest Rate Swap.
5. Treasury hedge: Current on-the-run.
6. Treasury hedge amount: to be determined.
7. Fixed rate: At mid market current treasury yield, plus at mid market interest rate swap spread to current treasury yield, semi bond.
8. Interest rate swap spread to current treasury yield: At mid market.
9. Treasury yield: At mid market.
10. Treasury price: At mid market.
11. Fixed rate interest rate calculation: 30/360 adjusted bond basis.
12. Fixed rate payable: Semi annual.
13. Fixed rate payments dates: Semi annual.
14. Floating rate: 3 month LIBOR.
15. First floating rate: LIBOR.
16. First floating rate set for period ending: 3 month LIBOR.
17. Floating rate interest rate calculation: Actual/360.
18. Floating rate reset: Quarterly.
19. Floating rate payable: Quarterly.
20. Floating rate payment dates: Quarterly.
21. Floating rate held and compounded: No.
22. Payment exchange: Net payment.
23. Mutual put: No.

Reset at Rebalance:

24. Trade date: The day of the rebalance date.
25. Value date: 2 good business days (spot).
26. Maturity date: The duration of the IRS.
27. Interest rate swap spread to current treasury yield: At mid market
28. Treasury hedge: Current on-the-run.
29. Treasury hedge amount: to be determined.
30. Treasury price: At mid market.
31. Fixed rate: At mid market current treasury yield, plus at mid market interest rate swap spread to current treasury yield, semi bond.
32. Fixed rate payments dates: Semi annual.
33. Floating rate: 3 month LIBOR.
34. First floating rate set for period ending: 3 month LIBOR.
35. Floating rate payment dates: Quarterly.

Terms and Conditions:

36. Non business day: ISDA documentation.

37. Ref source for interest rate swap spread to current treasury yield: Thomson Reuters.
38. Ref source for treasury yield: FTSE.
39. Ref source for floating rate: Thomson Reuters page 3750 (BBA LIBOR Rates).
40. Conditions: ISDA documentation.

Long Wing Settings at Origin:

1. Trade date: Index origin date.
2. Notional principal amount: Duration weight.
3. Value date: 2 good business days (spot).
4. Maturity date: The duration of the Interest Rate Swap.
5. Treasury hedge: Current on-the-run.
6. Treasury hedge amount: to be determined.
7. Fixed rate: At mid market current treasury yield, plus at mid market interest rate swap spread to current treasury yield, semi bond.
8. Interest rate swap spread to current treasury yield: At mid market.
9. Treasury yield: At mid market.
10. Treasury price: At mid market.
11. Fixed rate interest rate calculation: 30/360 adjusted bond basis.
12. Fixed rate payable: Semi annual.
13. Fixed rate payments dates: Semi annual modified following.
14. Floating rate: 3 month LIBOR.
15. First floating rate: LIBOR.
16. First floating rate set for period ending: 3 month LIBOR.
17. Floating rate interest rate calculation: Actual/360.
18. Floating rate reset: Quarterly.
19. Floating rate payable: Quarterly.
20. Floating rate payment dates: Quarterly.
21. Floating rate held and compounded: No.
22. Payment exchange: Net payment.
23. Mutual put: No.

Reset at Rebalance:

24. Trade date: The day of the rebalance date.
25. Notional principal amount: Duration weight.
26. Value date: 2 good business days (spot).
27. Maturity date: The duration of the IRS.
28. Interest rate swap spread to current treasury yield: At mid market
29. Treasury hedge: Current on-the-run.
30. Treasury hedge amount: to be determined.
31. Treasury price: At mid market.
32. Fixed rate: At mid market current treasury yield, plus at mid market interest rate swap spread to current treasury yield, semi bond.
33. Fixed rate payments dates: Semi annual.
34. Floating rate: 3 month LIBOR.
35. First floating rate set for period ending: 3 month LIBOR.
36. Floating rate payment dates: Quarterly.

Terms and Conditions:

37. Non business day: Modified following ISDA documentation.
38. Ref source for floating rate: Thomson Reuters page 3750 (BBA LIBOR Rates).
39. Ref source for interest rate swap spread to current treasury yield: Thomson Reuters.
40. Ref source for Treasury yield: FTSE.
41. Conditions: ISDA documentation.

Note: It is standard market practice to apply the notional amount to the middle leg or body, with the wings being duration weighted.

Amendments and Exceptions – Ground Rule 4

- 4.1 In the event that the FTSE Bond Indices Committee responsible for the operation and administration of the FTSE MTIRS Index Series US Dollar Indices consider that a change of principle or exceptions should be made to any of the Ground Rules, the issue must be brought to the attention of the Chairman or Deputy Chairman of the FTSE Bond Indices Committee, who will normally put the matter to the full FTSE Bond Indices Committee for a decision.
- 4.2 If, however, the matter is urgent, the Chairman and Deputy Chairman (or their deputies) are collectively empowered to authorise an exception on behalf of the FTSE Bond Indices Committee but must immediately notify, and subsequently refer the matter to a meeting of the FTSE Bond Indices Committee. Where an exception is granted to the Ground Rules under Rule 4.1, it shall not be deemed to create a precedent for future decisions of the FTSE Bond Indices Committee.

SECTION TWO: MANAGEMENT RESPONSIBILITIES AND CONTACT DETAILS

Management Responsibilities – Ground Rule 5

5.1 FTSE Policy Group

- 5.1.1 The FTSE Policy Group advises on the creation of new indices and reviews the ongoing management of the FTSE family of indices. The FTSE Policy Group ensures compliance with the standards that apply to all FTSE's Indices and assists in determining development priorities. It approves major policy matters and monitors the activities of the other Committees. Significant exceptions and/or changes to the Ground Rules may be made only as permitted by Ground Rule 4. FTSE appoint the Chairman and Deputy Chairman of the FTSE Policy Group.

5.2 FTSE Bond Indices Committee

- 5.2.1 The FTSE Bond Indices Committee is established jointly by FTSE. The Committee may approve changes to the Ground Rules as permitted by Section 4.

5.3 Committee membership

- 5.3.1 The FTSE Policy Group appoints the Chairman of the FTSE Bond Indices Committee. The Chairman of this committee will be a member of the FTSE Policy Group.

The members of the FTSE Bond Indices Committee are appointed by its Chairman in consultation with FTSE. The Deputy Chairman is selected by the Committee from its members. The Chairman, or in his/her absence the Deputy Chairman, chairs meetings of the Committee and represents that committee outside meetings. Subcommittees are appointed from the Committee when additional viewpoints are required by the Chairman and Deputy Chairman.

- 5.3.2 The Chairman and Deputy Chairman of the FTSE Bond Indices Committee are collectively responsible for approving any exceptional changes to the FTSE MTIRS Index Series US Dollar Indices at Committee meetings on advice from the Secretary to the Committee and as permitted and as specified by these Ground Rules. Other Committee members can deputise for the Chairman and Deputy Chairman in their absence.

5.4 Secretary to the Policy Group and Bond Indices Committee

Secretaries to the FTSE Policy Group and FTSE Bond Indices Committee are appointed by FTSE to support the work of the FTSE Policy Group and the FTSE Bond Indices Committee.

5.5 FTSE

- 5.5.1 FTSE is responsible for the operation of the FTSE MTIRS Index Series US Dollar Indices, including the daily calculation of all the index values in accordance with the Ground Rules.

Contact Us

Further information on the FTSE MTIRS Index Series US Dollar Indices is available from FTSE. We would also welcome comments on these Ground Rules and on the Index Series.

Enquiries should be addressed in the first instance to FTSE Client Services at:

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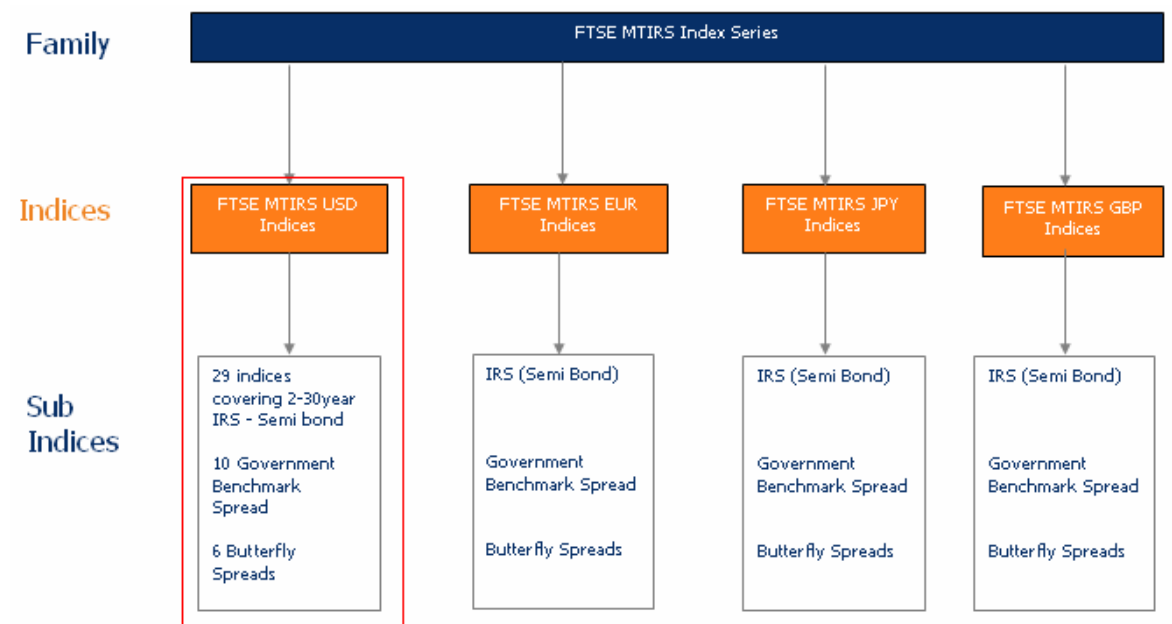
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SECTION THREE: APPENDICES

Appendix A – FTSE MTIRS Index Series Family

Calculated FTSE MTIRS Interest Rate Swaps Index Series

The FTSE MTIRS Index Series US Dollar Indices (in red outline) are calculated real-time and end-of-day. FTSE will determine the viability of Euro, Sterling and Yen Interest Rate Swaps Indices based on the success of the US Dollar indices.



Appendix B – FTSE MTIRS Index Series US Dollar Indices Reference Codes

The Table below lists all the indices in the Index plus the reference code

Index Code	Index Name
MTIRSUSD2	MTIRS USD Interest Rate Swaps Index 2 Years
MTIRSUSD3	MTIRS USD Interest Rate Swaps Index 3 Years
MTIRSUSD4	MTIRS USD Interest Rate Swaps Index 4 Years
MTIRSUSD5	MTIRS USD Interest Rate Swaps Index 5 Years
MTIRSUSD6	MTIRS USD Interest Rate Swaps Index 6 Years
MTIRSUSD7	MTIRS USD Interest Rate Swaps Index 7 Years
MTIRSUSD8	MTIRS USD Interest Rate Swaps Index 8 Years
MTIRSUSD9	MTIRS USD Interest Rate Swaps Index 9 Years
MTIRSUSD10	MTIRS USD Interest Rate Swaps Index 10 Years
MTIRSUSD11	MTIRS USD Interest Rate Swaps Index 11 Years
MTIRSUSD12	MTIRS USD Interest Rate Swaps Index 12 Years
MTIRSUSD13	MTIRS USD Interest Rate Swaps Index 13 Years
MTIRSUSD14	MTIRS USD Interest Rate Swaps Index 14 Years
MTIRSUSD15	MTIRS USD Interest Rate Swaps Index 15 Years
MTIRSUSD16	MTIRS USD Interest Rate Swaps Index 16 Years
MTIRSUSD17	MTIRS USD Interest Rate Swaps Index 17 Years
MTIRSUSD18	MTIRS USD Interest Rate Swaps Index 18 Years
MTIRSUSD19	MTIRS USD Interest Rate Swaps Index 19 Years
MTIRSUSD20	MTIRS USD Interest Rate Swaps Index 20 Years
MTIRSUSD21	MTIRS USD Interest Rate Swaps Index 21 Years
MTIRSUSD22	MTIRS USD Interest Rate Swaps Index 22 Years
MTIRSUSD23	MTIRS USD Interest Rate Swaps Index 23 Years
MTIRSUSD24	MTIRS USD Interest Rate Swaps Index 24 Years
MTIRSUSD25	MTIRS USD Interest Rate Swaps Index 25 Years
MTIRSUSD26	MTIRS USD Interest Rate Swaps Index 26 Years
MTIRSUSD27	MTIRS USD Interest Rate Swaps Index 27Years
MTIRSUSD28	MTIRS USD Interest Rate Swaps Index 28 Years
MTIRSUSD29	MTIRS USD Interest Rate Swaps Index 29 Years
MTIRSUSD30	MTIRS USD Interest Rate Swaps Index 30 Years

Table continued.

Index Code	Index Name
MTIRSUSD2x3	MTIRS USD Interest Rate Swaps Spread Index 2x3 Years
MTIRSUSD2x5	MTIRS USD Interest Rate Swaps Spread Index 2x5 Years
MTIRSUSD2x10	MTIRS USD Interest Rate Swaps Spread Index 2x10 Years
MTIRSUSD2x30	MTIRS USD Interest Rate Swaps Spread Index 2x30 Years
MTIRSUSD3x5	MTIRS USD Interest Rate Swaps Spread Index 3x5 Years
MTIRSUSD3x10	MTIRS USD Interest Rate Swaps Spread Index 3x10 Years
MTIRSUSD3x30	MTIRS USD Interest Rate Swaps Spread Index 3x30 Years
MTIRSUSD5x10	MTIRS USD Interest Rate Swaps Spread Index 5x10 Years
MTIRSUSD5x30	MTIRS USD Interest Rate Swaps Spread Index 5x30 Years
MTIRSUSD10x30	MTIRS USD Interest Rate Swaps Spread Index 10x30 Years
MTIRSUSD2x3x5	MTIRS USD Interest Rate Swaps Butterfly Index 2x3x5 Years
MTIRSUSD2x5x10	MTIRS USD Interest Rate Swaps Butterfly Index 2x5x10 Years
MTIRSUSD2x10x30	MTIRS USD Interest Rate Swaps Butterfly Index 2x10x30 Years
MTIRSUSD3x5x10	MTIRS USD Interest Rate Swaps Butterfly Index 3x5x10 Years
MTIRSUSD3x10x30	MTIRS USD Interest Rate Swaps Butterfly Index 3x10x30 Years
MTIRSUSD5x10x30	MTIRS USD Interest Rate Swaps Butterfly Index 5x10x30 Years

Appendix C – FTSE MTIRS Index Series US Dollar Indices

Calculation Methodology

For the FTSE MTIRS index calculations, all the synthetic interest rate swap positions which have been reset at the last rebalancing must be valued. Rebalancing is done every day at 3:00 p.m. London time (10:00 a.m. New York time). The swap fixing file is then sent to clients at 3:30 p.m. London time (10:30 a.m. New York time).

At rebalancing, the rates and maturities of the interest rate swaps match the values of the current interest rate swap curve, so their values are zero. After rebalancing, the interest rate swap positions gain values which are non-zero.

For the valuations of all interest rate swap positions, a zero interest rate curve is always created from the current LIBOR rates and the current swap rates, taking into account the day count conventions of the market (ACT/360 quarterly for USD LIBOR, 30/360 semi-annually for the USD fixed swap leg, both *modified following* for USD). The discount factors from this curve are multiplied by the cash flows of the interest rate swap positions to determine their values. The results are then summed to arrive at the values of the interest rate swap positions.

The value of any of the 2 - 30 year interest rate swap positions, expressed for a nominal value of 100, expresses the change to the respective 2 - 30 years MTIRS index, compared to the respective 2 - 30 year MTIRS index value computed at the last rebalancing. For any of the 2 - 30 year interest rate swap positions, the respective change amount is added to the index value at the last rebalancing. The result is the current index value.

For Spread and Butterfly interest rate positions, there is not just one swap to value, but a portfolio of two (in the case of Spread positions) or three (in the case of Butterfly positions) interest rate swaps. For any of the Spread and Butterfly interest rate swap positions, the value of its respective portfolio, expressed for a nominal of 100 in the longer swap (Spread) or the body (Butterfly), expresses the change to the respective index compared to the index value reached at the last rebalancing. For any of the Spread and Butterfly interest rate swap positions, the respective change amount is added to the index value at the last rebalancing. The result is the current index value.

To look at the calculations in more detail we consider swaps paying semi-annually, with modified following on the fixed leg and quarterly on the floating leg (as in the USD market). We consider a horizon of 30 years.

For each time to calculate the index, there are 60 payment dates starting from settlement. We denote them by t_i , starting from t_0 (settlement) and running up to t_{60} (30 years of semi-annual payments).

For each t_i we have a current swap rate s_i . For example, s_{20} is the swap rate for a swap running 20 periods (10 years of semi-annual payments).

For valuation we need to calculate the present value factor for each t_i . We denote them by d_i .

Let c_{ij} be the amount paid by a swap running i periods at date t_j . Normally this is $s_j/2$, but may differ slightly because of the modified following usage.

Example

For settlement (t_0) on 8 August 2007, and assuming the 4 year swap rate is 5 %, the coupon payment days (t_1 to t_6) for this swap are:

10 August 2007
11 February 2008
11 August 2008
10 February 2009
10 August 2009
10 February 2010

10 August 2010
 10 February 2011
 10 August 2011

(adjusted for weekends), and the swap fix payments (c_{81} to c_{88}) are:

2.513888889
 2.5
 2.486111111
 2.5
 2.5
 2.5
 2.5
 2.5

according to the modified following usage.

As a swap paying the current swap rate has zero value, we have:

$$\sum_{j=1}^i d_j c_{ij} + 100d_i = 100$$

Rearranged, this gives:

$$\sum_{j=1}^i d_j c_{ij} + 100d_i = \sum_{j=1}^{i-1} d_j c_{ij} + d_i c_{ii} + 100d_i = \sum_{j=1}^{i-1} d_j c_{ij} + d_i (c_{ii} + 100) = 100$$

so that,

$$d_i = (100 - \sum_{j=1}^{i-1} d_j c_{ij}) / (100 + c_{ii})$$

This is used to calculate the d_i iteratively.

Note: This is a description where a yield of 5% is given as the number 5 and par redemption is 100. If you prefer a description where 5% is given as 0.05 and redemption as 1, this formula becomes

$$d_i = (1 - \sum_{j=1}^{i-1} d_j c_{ij}) / (1 + c_{ii})$$

Please note that this is a somewhat simplified description. Swap rates are not quoted semi-annually, but only annually, and for the longer maturities, not even annually. Therefore, missing rates (s_j) are interpolated linearly from the quoted rates. Further, there are no swap rates for 1 year and 6 months. Therefore, the LIBOR rates for 6 and 12 months are used for the calculation of the present value factors.

To calculate the index, we look at the swaps set at the last rebalancing. These are the swaps we must value to calculate the index. We use the same notation as above, but with upper case letters. Assuming today is a Wednesday and the latest rebalancing has been done, the corresponding settlement is on Friday (provided there are no holidays between). So we have:

- T_i the date i periods from Friday
- S_i the swap rate fixed at the latest rebalancing for the swap running i periods
- C_{ij} the amount paid by the swap running i periods at date T_j
- D_i The present value factor for T_i

Further, we need:

- L The next payment on the floating leg (calculated from the 3 month LIBOR rate fixed for the floating leg).
- T_L the date of the next floating leg payment date
- D_L The present value factor for T_L

T_{ij} , S_{ij} , C_{ij} and L are known from the fixing. For the valuation we need D_i . As usually the t_i differs from the T_{ij} the D_i has to be interpolated from the d_i properly. This is done using exponential interpolation (i. e. linear interpolation on the logarithms of the d_i).

Example

We assume that settlement is 10th Aug 2007 and we've calculated d_6 (10th Aug 2010) and d_7 (10th Feb 2011) as 0.8638 and 0.8430. We need to interpolate D_7 for 06th Jan 2011. We calculate:

Time to 10th Aug 2010 is 3 years
 Time to 10th Feb 2011 is 3 + 184/365 years = 3.5041 years
 Time to 06th Jan 2011 is 3 + 149/365 years = 3.4082 years

Therefore,

$$D_7 = \exp(\ln(0.8638) + (\ln(0.8638) - \ln(0.8430)) / (3.5041 - 3) * (3.4082 - 3))$$

$$= 0.8469$$

For D_i (nearly 3), D_0 (nearly 6) and D_1 (nearly 12 months) the LIBOR rates are taken into account for interpolation (e. g. D_i : discount factors for two and three months are calculated directly from the two and three month LIBOR rate, then interpolation is performed as described above).

Having the D_i calculated, we can value the swaps. Let P_i denote the current present value of the swap running i periods at the latest rebalancing. We have:

$$P_i = \sum_{j=1}^i D_i C_{ij} + 100D_i - 100 - (D_L L - 100(1 - D_L))$$

Note that at the rebalancing, where $T_i = t_i$, $S_i = s_i$ and $D_i = D_{ij}$ all P_i are 0.

Let the current Swap Index value (for i periods) be noted by x_i and the Swap Index value at the latest rebalancing by X_i . Then we have

$$x_i = X_i + P_i$$

This gives the current value of the index.

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