Bloomberg Forward FX Index Family Methodology

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Bloomberg

Table of contents

Introduction

This methodology (the “Methodology”) has been made available by Bloomberg Index Services Limited (“BISL”) and sets out the rules, criteria, risk factors and other information applicable to the Bloomberg Forward Indices (the “Indices” and each, an “Index”). Capitalized terms used in this Methodology but not otherwise defined have the meanings set forth in Appendix I (Glossary).

Objectives and key features

The Bloomberg Forward Indices aim to reflect the performance of baskets of currencies against the Index Currency.

A basket of Short FX Forward Indices is used to calculate the performance of the indices, and the weighting of each Short FX Forward Index is calculated using weighting data on Determination Dates.

For the calculation of each Short FX Forward Index, short currency forward positions are entered into, and are rolled at expiry. The Rebalance Date of the Bloomberg Forward Indices are aligned with the Roll Dates of the Short FX Forward Indices.

Section 1: Calculation

Index calculation

With respect to each Index, the Index Value on the Index Base Date shall be the Index Base Value.

The Excess Return Index Value with respect to each subsequent Index Business Day shall be calculated in accordance with the following formula, subject to Section 1 (“Rounding”):

$$ERI_t = ERI_{t-1} + \sum_{ccy \in C} AU_t^{SFXFI^{ccy}} \times \left(SFXFI_t^{ccy} - SFXFI_{t-1}^{ccy}\right) \quad (1)$$

Where:
ERI_t and ERI_{t-1} mean the Excess Return Index Values on Index Business Day t and the immediately preceding Index Business Day $t-1$ respectively;
C means the set of Currencies;
ccy means a Currency;
$SFXFI_t^{ccy}$ and $SFXFI_{t-1}^{ccy}$ mean the Index Values of the Short FX Forward Index $SFXFI^{ccy}$ on Index Business Days t and the immediately preceding Index Business Day $t-1$ respectively; and
$AU_t^{SFXFI^{ccy}}$ means the Actual Units for Short FX Forward Index $SFXFI^{ccy}$ on Index Business Day t.

Units calculation

With respect to a Short FX Forward Index $SFXFI^{ccy}$, the Actual Units for each Index Business Day t shall be calculated in accordance with the following formula:

If Index Business Day t is the Index Base Date:

$$AU_t^{SFXFI^{ccy}} = 0 \quad (2)$$

Else:

$$AU_t^{SFXFI^{ccy}} = AU_{t-1}^{SFXFI^{ccy}} + IU_{t-1}^{SFXFI^{ccy}} \quad (3)$$

Where:
ccy means a Currency;
$AU_t^{SFXFI^{ccy}}$ and $AU_{t-1}^{SFXFI^{ccy}}$ mean the Actual Units for Short FX Forward Index $SFXFI^{ccy}$ on Index Business Day t and the immediately preceding Index Business Day $t-1$ respectively;

$IU_{t-1}^{SFXFI^{ccy}}$ means the Incremental Units for Short FX Forward Index $SFXFI^{ccy}$ on the immediately preceding Index Business Day $t-1$.

With respect to a Short FX Forward Index $SFXFI^{ccy}$, the Incremental Units for each Index Business Day t shall be calculated in accordance with the following formula:

If Index Business Day t is the Index Base Date:

$$IU_t^{SFXFI^{ccy}} = TU_t^{SFXFI^{ccy}} \tag{4}$$

Else:

$$IU_t^{SFXFI^{ccy}} = TU_{t-1}^{SFXFI^{ccy}} - AU_t^{SFXFI^{ccy}} \tag{5}$$

Where:
$IU_t^{SFXFI^{ccy}}$ means the Incremental Units for Short FX Forward Index $SFXFI^{ccy}$ on Index Business Day t;
$TU_t^{SFXFI^{ccy}}$ and $TU_{t-1}^{SFXFI^{ccy}}$ mean the Target Units for Short FX Forward Index $SFXFI^{ccy}$ on Index Business Day t and the immediately preceding Index Business Day $t-1$ respectively; and
$AU_t^{SFXFI^{ccy}}$ means the Actual Units for Short FX Forward Index $SFXFI^{ccy}$ on Index Business Day t.

With respect to an Excess Return Index, ERI, and a Short FX Forward Index $SFXFI^{ccy}$, the Target Units for each Index Business Day t shall be calculated in accordance with the following formula:

If Index Business Day t is the Index Base Date:

$$TU_t^{SFXFI^{ccy}} = Direction \times \frac{TW_t^{SFXFI^{ccy}} \times ERI_{base}}{SFXFI_t^{ccy}} \tag{6}$$

If Index Business Day t is the Determination Date:

$$TU_t^{SFXFI^{ccy}} = Direction \times \frac{TW_t^{SFXFI^{ccy}} \times ERI_t}{SFXFI_t^{ccy}} \tag{7}$$

Else:

$$TU_t^{SFXFI^{ccy}} = TU_{t-1}^{SFXFI^{ccy}} \tag{8}$$

Where:
$TU_t^{SFXFI^{ccy}}$ and $TU_{t-1}^{SFXFI^{ccy}}$mean the Target Units for Short FX Forward Index $SFXFI^{ccy}$ on Index Business Day t and the immediately preceding Index Business Day $t-1$ respectively;
$TW_t^{SFXFI^{ccy}}$ means the Target Weights for Short FX Forward Index $SFXFI^{ccy}$ on Index Business Day t;
ERI_{base} means the Excess Return Index Value on Index Base Date;
ERI_t means the Excess Return Index Value on Index Business Day t; and
$SFXFI_t^{ccy}$means the Index Values of the Short FX Forward Index $SFXFI^{ccy}$ on Index Business Days t and $t-1$ respectively.

Weights calculation

With respect to a Currency ccy against the Index Currency, the Target Weights for each Index Business Day, t, shall be calculated in accordance with the following formula:

If Index Business Day t is the Index Base Date or a Determination Date:

If the set of Selected Currencies, $C'_{d'}$, does not contain any Capped Currency:

$$TW_t^{SFXFI^{ccy}} = \left(ta \times tw_{d'}^{ccy}\right) + \left(la \times lw_{d'}^{ccy}\right) \quad (9)$$

Else if the set of Selected Currencies, $C'_{d'}$, contains at least one Capped Currency:

If ccy is a Capped Currency:

$$TW_t^{SFXFI^{ccy}} = cap_{d'}^{ccy}$$

Else:

$$preTW_t^{SFXFI^{ccy}} = \left(ta \times tw_{d'}^{ccy}\right) + \left(la \times lw_{d'}^{ccy}\right) \quad (10)$$

$$TW_t^{SFXFI^{ccy}} = preTW_t^{SFXFI^{ccy}} + \left(preTW_t^{SFXFI^{ccy}} \times \left(\frac{\sum_{\hat{c} \in CappedCurrencies_{d'}} \left(preTW_t^{SFXFI^{\hat{c}}} - cap_{d'}^{\hat{c}}\right)}{\sum_{c \in C'_{d} \setminus CappedCurrencies_{d'}} preTW_t^{SFXFI^{c}}}\right)\right) \quad (11)$$

Else:

$$TW_t^{SFXFI^{ccy}} = 0 \quad (12)$$

Else:

$$TW_t^{SFXFI^{ccy}} = TW_{t-1}^{SFXFI^{ccy}} \quad (13)$$

Where:
$C'_{d'}$ means the set of Selected Currencies on Membership Determination Date d';
c means a Currency;
$\hat{c}$ means a Capped Currency;
$CappedCurrencies_{d'}$ means the set of Capped Currencies on Membership Determination Date d';
ta means the Trade Allocation;
la means the Liquidity Allocation;
$cap_{d'}^{ccy}$ and $cap_{d'}^{\hat{c}}$ mean the Capped Weights on Membership Determination Date d' of Currency ccy and Capped Currency $\hat{c}$ respectively;
$preTW_t^{SFXFI^{ccy}}$, $preTW_t^{SFXFI^{\hat{c}}}$ and $preTW_t^{SFXFI^{c}}$ mean the Target Weights for Short FX Forward Index $SFXFI^{ccy}$, Short FX Forward Index $SFXFI^{\hat{c}}$ and Short FX Forward Index $SFXFI^{c}$ respectively before adjusting for capping on Index Business Day t;
$TW_t^{SFXFI^{\hat{c}}}$ means the Target Weights for Short FX Forward Index $SFXFI^{\hat{c}}$ on Index Business day t;
$TW_t^{SFXFI^{ccy}}$ and $TW_{t-1}^{SFXFI^{ccy}}$ mean the Target Weights for Short FX Forward Index $SFXFI^{ccy}$ on Index Business Day t and the immediately preceding Index Business Day $t-1$ respectively;
$tw_{d'}^{ccy}$ means the Trade Weights for Currency ccy on Membership Determination Date d', calculated in accordance with the following formula:

$$tw_{d'}^{ccy} = \frac{TRD_{d'}^{ccy}}{\sum_{ccy \in C'_{d'}} TRD_{d'}^{ccy}} \quad (14)$$

Where:
$TRD_{d'}^{ccy}$ means the Trade Data for Currency ccy on Membership Determination Date d';

$lw_{d'}^{ccy}$ means the Liquidity Weight for Currency ccy on Membership Determination Date d', calculated in accordance with the following formula:

$$lw_{d'}^{ccy} = \frac{LIQ_{d'}^{ccy}}{\sum_{ccy \in C'_{d'}} LIQ_{d'}^{ccy}} \quad (15)$$

Where:
$LIQ_{d'}^{ccy}$ means the Liquidity Data for Currency ccy on Membership Determination Date d'.

Currency selection

With respect to Membership Determination Date d', the set of Selected Currencies, $C'_{d'}$, shall be calculated in accordance with the following formula:

$$C'_{d'} = \{ccy \mid ccy \in \left(R_{d'}^{TRD} \cup R_{d'}^{LIQ}\right) \wedge ccy \in \left(C_{d'}^{TRD} \cap C_{d'}^{LIQ}\right)\} \quad (16)$$

$$R_{d'}^{TRD} = \{ccy \in C_{d'}^{TRD} \mid TRank_{d'}^{ccy} \leq 10\} \quad (17)$$

$$R_{d'}^{LIQ} = \{ccy \in C_{d'}^{LIQ} \mid LRank_{d'}^{ccy} \leq 10\} \quad (18)$$

Where:
ccy means a Currency;
C_d' means the set of Selected Currencies on Membership Determination Date d';
$R_{d'}^{TRD}$ means the ranked sets of Trade Currencies on Membership Determination Date d';
$R_{d'}^{LIQ}$ means the ranked sets of Liquidity Currencies on Membership Determination Date d';
$C_{d'}^{TRD}$ means the set of Trade Currencies on Membership Determination Date d', calculated in accordance with the following formula:

$$C_{d'}^{TRD} = \{ccy \in U_{d'}^{TRD} \mid TRank_{d'}^{ccy} \leq 20 \land ccy \notin PEG_{d'}\} \quad (19)$$

Where:
$PEG_{d'}$ means the set of Pegged Currencies on Membership Determination Date d'; and
$U_{d'}^{TRD}$ means the set of Trade Universe Currencies on Membership Determination Date d'.

$C_{d'}^{LIQ}$ means, with respect to Membership Determination Date d', the set of Liquidity Currencies, calculated in accordance with the following formula:

$$C_{d'}^{LIQ} = \{ccy \in U_{d'}^{LIQ} \mid LRank_{d'}^{ccy} \leq 20 \land ccy \notin PEG_{d'}\} \quad (20)$$

Where:
$U_{d'}^{LIQ}$ means the set of Liquidity Universe Currencies on Membership Determination Date d'.

$TRank_{d'}^{ccy}$ means, $Rank_{d'}^{ccy}$ as calculated by running the Ranking Function in Section 1: Calculation, with the Trade Data $TRD_{d'}^{ccy}$ and set of Trade Universe Currencies $U_{d'}^{TRD}$; and
$LRank_{d'}^{ccy}$ means, $Rank_{d'}^{ccy}$ as calculated by running the Ranking Function in Section 1: Calculation, with the Liquidity Data $LIQ_{d'}^{ccy}$ and the set of Liquidity Currencies $U_{d'}^{LIQ}$.

Ranking function

$Rank_{d'}^{ccy}$ means, with respect to ccy, Membership Determination Date d', and a data source name SRC, the ranking position of ccy in an ordered list containing each ccy under the ordering:

$$\begin{gathered} \forall a, b \in C_{d'}^{SRC} \text{ such that } a \neq b, \\ a < b \text{ if } SRC_{d'}^{a} < SRC_{d'}^{b} \\ \text{else } a > b \text{ if } SRC_{d'}^{a} > SRC_{d'}^{b} \\ \text{else } a < b \text{ if } Rank_{d'Prev}^{a} < Rank_{d'Prev}^{b} \\ \text{else } a > b \end{gathered} \quad (21)$$

Where:
SRC means, a data source;
$d'Prev$ means the immediately preceding Membership Determination Date;
$Rank_{d'Prev}^{a}$ and $Rank_{d'Prev}^{b}$ mean the value of $Rank_{d'}^{ccy}$ where $d' = d'Prev$ and $ccy = a$ or $ccy = b$ respectively;
$SRC_{d'}^{a}$ and $SRC_{d'}^{b}$ mean $SRC_{d'}^{ccy}$ where $ccy = a$ or $ccy = b$ respectively, on Membership Determination Date d';
$SRC_{d'}^{ccy}$ means the data from a data source SRC for ccy on Membership Determination Date d'; and
$C_{d'}^{SRC}$ means the set of Currencies from a data source SRC on Membership Determination Date d'.

Short FX Forward Index calculation

With respect to a Short FX Forward Index $SFXFI^{ccy}$, the Index Value on the Index Base Date shall be the Index Base Value. The Index Value with respect to each subsequent Index Business Day shall be calculated in accordance with the following formula, subject to Section 1 ("Rounding"):

$$SFXFI_t^{ccy} = SFXFI_{t-1}^{ccy} + AU_t^{Fwd(r,ccy)} \times \left(P_t^{Fwd(r,ccy,)} - P_{t-1}^{Fwd(r,ccy)}\right) \tag{22}$$

Where:
$t-1$ means the Index Business Day immediately preceding t;
$SFXFI_t^{ccy}$ and $SFXFI_{t-1}^{ccy}$ mean the Index Values of the Short FX Forward Index on Index Business Days t and $t-1$ respectively;
r means the immediately preceding Roll Date. For the avoidance of doubt if t is a Roll Date, r, is the immediately preceding Roll Date and on the Index Base Date the Roll Date r is the Index Base Date;
ccy means a Currency;
$Fwd(r, ccy)$ means the Forward Position of Currency ccy against the Index Currency with Roll Date r;
$AU_t^{Fwd(r,ccy)}$ means the Actual Units for the Forward Position $Fwd(r, ccy)$ on Index Business Day t; and
$P_t^{Fwd(r,ccy)}$ and $P_{t-1}^{Fwd(r,ccy)}$ mean the Price for the Forward Position $Fwd(r, ccy)$ on Index Business Days t and $t-1$ respectively.

Forward Currency Units calculation

With respect to a Forward Position, $Fwd(r, ccy)$, the Actual Units for each Index Business Day, t, shall be calculated in accordance with the following method:

If Index Business Day t is the Index Base Date:

$$AU_t^{Fwd(r,ccy)} = 0 \tag{23}$$

Else:

$$AU_t^{Fwd(r,ccy)} = AU_{t-1}^{Fwd(r,ccy)} + IU_{t-1}^{Fwd(r,ccy)} \tag{24}$$

Where:
$AU_t^{Fwd(r,ccy)}$ and $AU_{t-1}^{Fwd(r,ccy)}$ mean the Actual Units for the Forward Position $Fwd(r, ccy)$ on Index Business Day t and the immediately preceding Index Business Day $t-1$ respectively; and
$IU_{t-1}^{Fwd(r,ccy)}$ means the Incremental Units for the Forward Position $Fwd(r, ccy)$ on Index Business Day $t-1$.

With respect to a Forward Position, $Fwd(r, ccy)$, the Incremental Units for each Index Business Day, t, shall be calculated in accordance with the following method:

If Index Business Day t is the Index Base Date:

$$IU_t^{Fwd(r,ccy)} = TU_t^{Fwd(r,ccy)} \tag{25}$$

Else:

$$IU_t^{Fwd(r,ccy)} = TU_{t-1}^{Fwd(r,ccy)} - AU_t^{Fwd(r,ccy)} \tag{26}$$

Where:
$IU_t^{Fwd(r,ccy)}$ means the Incremental Units for Forward Position $Fwd(r, ccy)$ on Index Business Day t;
$TU_t^{Fwd(r,ccy)}$ and $TU_{t-1}^{Fwd(r,ccy)}$ means the Target Units for Forward Position $Fwd(r, ccy)$ on Index Business Day t and the immediately preceding Index Business Day $t-1$ respectively; and

$AU_t^{Fwd(r,ccy)}$ means the Actual Units for Forward Position $Fwd(r, ccy)$ on Index Business Day t.

With respect to a Short FX Forward Index, $SFXFI^{ccy}$, and a Forward Position, $Fwd(r, ccy)$, the Target Units for each Index Business Day, t, shall be calculated in accordance with the following method:

If Index Business Day t is the Index Base Date:

$$TU_t^{Fwd(r,ccy)} = -\left(\frac{SFXFI_{base}^{ccy}}{P_t^{Fwd(r,ccy)}}\right) \tag{27}$$

If Index Business Day t is the Determination Date:

$$TU_t^{Fwd(r,ccy)} = -\left(\frac{SFXFI_t^{ccy}}{P_t^{Fwd(r,ccy)}}\right) \tag{28}$$

Else:

$$TU_t^{Fwd(r,ccy)} = TU_{t-1}^{Fwd(r,ccy)} \tag{29}$$

Where:
$t-1$ means the Index Business Day immediately preceding t;
$TU_t^{Fwd(r,ccy)}$ and $TU_{t-1}^{Fwd(r,ccy)}$ mean the Target Units for Forward Position $Fwd(r, ccy)$ on Index Business Day t and the immediately preceding Index Business Day $t-1$ respectively;
$SFXFI_{base}^{ccy}$ means the Index Value of the Short FX Forward Index on Index Base Date;
$SFXFI_t^{ccy}$ means the Index Value of the Short FX Forward Index on Index Business Day t; and
$P_t^{Fwd(r,ccy)}$ means the Price for Forward Position $Fwd(r, ccy)$ on Index Business Day t.

Forward Currency Price calculation

The price of a Forward Position is the value, expressed as a forward rate, determined by considering the offsetting forward rate required to unwind the existing position.

With respect to a Forward Position, $Fwd(r, ccy)$, the Price for each Index Business Day, t, shall be calculated in accordance with the following formula:

$$P_t^{Fwd(r,ccy)} = FR_r^{Settle(Fwd(r,ccy))} + \left(\left(FR_t^{Settle(Fwd(r,ccy))} - FR_r^{Settle(Fwd(r,ccy))}\right) \times PVF_t^{Settle(Fwd(r,ccy))}\right) \tag{30}$$

Where:
$P_t^{Fwd(r,ccy)}$ means the Price for Forward Position $Fwd(r, ccy)$ on Index Business Day t;
$Settle(Fwd(r, ccy))$ means the Forward Instrument Settlement Date of the 1M Outright Forward FX Rate for Currency ccy against the Index Currency on Roll Date r ;
$FR_r^{Settle(Fwd(r,ccy))}$ and $FR_t^{Settle(Fwd(r,ccy))}$ mean the Forward Rates to Settlement Date $Settle(Fwd(r, ccy))$ on Roll Date r and Index Business Day t respectively; and
$PVF_t^{Settle(Fwd(r,ccy))}$ means the Present Value Factor for Forward Position Settlement Date $Settle(Fwd(r, ccy))$ on Index Business Day t.

Present Value Factor calculation

With respect to a Forward Position Settlement Date, $Settle\big(Fwd(r, ccy)\big)$, the Present Value Factor for each Index Business Day, t, shall be calculated in accordance with the following formula:

$$PVF_t^{Settle(Fwd(r,ccy))} = e^{-DR_t^{Settle(Fwd(r,ccy))} \times DCF_t^{Settle(Fwd(r,ccy))}} \tag{31}$$

$$DR_t^{Settle(Fwd(r,ccy))} = \frac{R_t^{Settle(SDT_t)} \times Days\left(Settle\big(Fwd(r, ccy)\big), Settle(LDT_t)\right) + R_t^{Settle(LDT_t)} \times Days\left(Settle(SDT_t), Settle\big(Fwd(r, ccy)\big)\right)}{Days\big(Settle(SDT_t), Settle(LDT_t)\big)} \tag{32}$$

$$DCF_t^{Settle(Fwd(r,ccy))} = \frac{Days(Settle(Fwd(r, ccy)), SpotSettle(t))}{DCC} \tag{33}$$

Where:
$PVF_t^{Settle(Fwd(r,ccy))}$ means the Present Value Factor for Forward Position Settlement Date $Settle(Fwd(r, ccy))$ on Index Business Day t;
$DR_t^{Settle(Fwd(r,ccy))}$ means the Discount Rate for Forward Position Settlement Date $Settle(Fwd(r, ccy))$ on Index Business Day t;
$DCF_t^{Settle(Fwd(r,ccy))}$ means the Day Count Fraction for Forward Position Settlement Date $Settle(Fwd(r, ccy))$ on Index Business Day t;
SDT_t and LDT_t mean the Short Tenor Discount Instrument and Long Tenor Discount Instrument on Index Business Day t respectively;
$R_t^{Settle(SDT_t)}$ and $R_t^{Settle(LDT_t)}$ mean the Discount Instrument Rates of the Short and Long Tenor on Index Business Day t respectively;
$Settle(SDT_t)$ and $Settle(LDT_t)$ mean the Settlement Dates of the Short Tenor Discount Instrument and Long Tenor Discount Instrument on Index Business Day t respectively;
$SpotSettle(t)$ means the Spot Settlement Date on Index Business Day t;
$Days(\alpha, \beta)$, where α and β can take dates $Settle\big(Fwd(r, ccy)\big)$, $SpotSettle(t)$, $Settle(SDT_t)$ or $Settle(LDT_t)$, means the number of Calendar Days from and including α to and excluding β; and
DCC means the Day Count Convention.

Forward Rate calculation

Forward rates for a given settlement date are determined by interpolating between (or extrapolating from) the rates of certain quoted forward tenors.

With respect to a Forward Position Settlement Date, $Settle\big(Fwd(r, ccy)\big)$, the Forward Rate for each Index Business Day, t, shall be calculated in accordance with the following interpolation formula:

$$FR_t^{Settle(Fwd(r,ccy))} = \frac{FR_t^{Settle(STFI_t)} \times Days\left(Settle\big(Fwd(r, ccy)\big), Settle(LTFI_t)\right) + FR_t^{Settle(LTFI_t)} \times Days\left(Settle(STFI_t), Settle\big(Fwd(r, ccy)\big)\right)}{Days\big(Settle(STFI_t), Settle(LTFI_t)\big)} \tag{34}$$

Where:
$STFI_t$ and $LTFI_t$ mean the Short Tenor FX Instrument and Long Tenor FX Instrument on Index Business Day t respectively;
$Settle(STFI_t)$ and $Settle(LTFI_t)$ mean the Forward Instrument Settlement Dates of the Short Tenor FX Instrument and Long Tenor FX Instrument on Index Business Day t respectively;
$FR_t^{Settle(STFI_t)}$ and $FR_t^{Settle(LTFI_t)}$ mean the Forward Rates to the Forward Instrument Settlement Dates of the Short Tenor FX Instrument and the Long Tenor FX Instrument on Index Business Day t respectively; and

$Days(\alpha, \beta)$, where α and β can take dates $Settle\big(Fwd(r, ccy)\big)$, $Settle(STFI_t)$ or $Settle(LTFI_t)$, means the number of Calendar Days from and including α to and excluding β.

Forward Position Settlement Date

The settlement date of each Forward Position is set such that it matches what would be the settlement date of a spot transaction entered into on the next Roll Date.

With respect to a Forward Position, $Fwd(r, ccy)$, the Forward Position Settlement Date on a Roll Date will be the 1M Forward Instrument Settlement Date. On any other day, it shall be calculated in accordance with the following formula:

$$Settle\big(Fwd(r, ccy)\big) = SpotSettle(R_{next}(r), ccy) \tag{35}$$

Where:
$R_{next}(r)$ means the immediately following Roll Date; and
$SpotSettle(R_{next}(r), ccy)$, means the Spot Settlement Date for Roll Date, $R_{next}(r)$.

Tenor Instrument Determination

This section describes the methodology of selecting the two closest Available FX and Discount Rate Instruments for interpolating/extrapolating the Forward and Discount Rates. The description below applies to both the FX and Discount Tenor Instrument determination.

Short Tenor Instrument is determined in accordance with the following:

1. If the Forward Position Settlement Date is the same as the Instrument Settlement Date of an Available Instrument, then such Available Instrument.
2. Otherwise, if the Forward Position Settlement Date is prior to the Instrument Settlement Dates of all Available Instruments, then the Available Instrument with the earliest Instrument Settlement Date.
3. Otherwise, if the Forward Position Settlement Date is later than the Instrument Settlement Dates of all Available Instruments, then the Available Instrument with the latest Instrument Settlement Date that is prior to the Instrument Settlement Date of the Long Tenor Instrument.
4. Otherwise, the Available Instrument with the latest Instrument Settlement Date that is prior to the Forward Position Settlement Date.

Long Tenor Instrument is determined in accordance with the following:

1. If the Forward Position Settlement Date is the same as the Instrument Settlement Date of an Available Instrument, then such Available Instrument.
2. Otherwise, if the Forward Position Settlement Date is later than the Instrument Settlement Dates of all Available Instruments, then the Available Instrument with the latest Instrument Settlement Date.
3. Otherwise, if the Forward Position Settlement Date is prior to the Instrument Settlement Dates of all Available Instruments, then the Available Instrument with the earliest Instrument Settlement Date that is later than the Instrument Settlement Date of the Short Tenor Instrument.
4. Otherwise, the Available Instrument with the earliest Instrument Settlement Date that is later than the Forward Position Settlement Date.

Rounding

The Index Values shall be calculated without rounding and published to 2 decimal places.

Section 2: Backtest assumptions

The rules outlined above are applied historically, however the following assumptions have been made:

- Historically the Discount Instruments are different to the list in the index specification. The ICE Libor USD 1 Month and 3 Month were used since the start, thereafter from 19 October 2020, the Discount Instrument are the ones listed in the index specification.
- Prior to the inception date of the BFIX calendar, which is January 2016, the Index follows a holiday schedule which excludes Christmas Day, New Year's Day and Good Friday as business days. In the event that such holiday falls on a weekend, the holiday replacement will be the following calendar day, provided it does not fall on a Saturday, in which case there will be no holiday replacement.

Section 3: Stakeholder engagement, risk, and limitations

Limitations of the index

Though the Index is designed to be representative of the markets it measures or otherwise aligns with its stated objective, it may not be representative in every case or achieve its stated objective in all instances. It is designed and calculated strictly to follow the rules of this Methodology, and any Index level or other output is limited in its usefulness to such design and calculation.

Markets can be volatile, including those market interests that the Index measures or upon which the Index is dependent to achieve its stated objective. For example, illiquidity can have an impact on the quality or amount of data available to the administrator for calculation and may cause the Index to produce unpredictable or unanticipated results.

In addition, changes to the availability and/or accuracy of trade, liquidity or forward rates data, may render the objective of the Index unachievable or to become impractical to replicate by investors. They are for the indicative purpose.

In particular, the Index measures the developed and emerging market Short FX Forwards with the Index Currency. As with all investing, the Index is exposed to market risk. The value of FX Forwards fluctuates with the changes in economic forecasts, interest rate policies established by central banks and perceived geo-political risk. The Index does not take into account the cost of replication and as a result, a tracking portfolio's returns will underperform the Index with all else equal. As the Index is designed to measure those markets, it could be materially impacted by market movements, thus significantly impacting the use or usefulness of the fixings for some or all users.

Section 4: Benchmark oversight and governance

Benchmark governance, audit, and review structure

BISL uses three primary committees to provide overall governance and effective oversight of its benchmark administration activities:

- The Product, Risk & Operations Committee ("**PROC**") is responsible for the first line of control over the creation, design, production and dissemination of benchmark indices, strategy indices and fixings administered by the BISL. [1]
- The oversight function is provided by Bloomberg's Benchmark Oversight Committee ("**BOC**"). The BOC is independent of the PROC and is responsible for the review and challenge of the Board and the PROC regarding relevant aspects of the provision of Benchmarks by BISL, as set out in the UK BMR.
- The Risk Committee ("**RiskCo**") advises the Board, the PROC and the BOC on the Company's overall risk appetite, tolerance and strategy and oversees the Company's risk exposure and risk strategy

On a quarterly basis, the PROC reports to the BOC on governance matters, including but not limited to client complaints, the launch of new benchmarks, operational incidents (including errors & restatements), major announcements and material changes concerning the benchmarks, the results of any reviews of the benchmarks (internal or external) and material stakeholder engagements.

Index and data reviews

The Index Administrator will review the Indices (both the rules of construction and data inputs) on a periodic basis, not less frequently than annually, to determine whether they continue to reasonably measure the intended underlying market interest, the economic reality or otherwise align with their stated objective. More frequent reviews may result from extreme market events and/or material changes to the applicable underlying market interests.

In addition to material changes, BISL may from time to time terminate one or more Indices ("Discontinued Indices"), whether due to changes in market structure, a lack of requisite data, insufficient usage, or for other regulatory or practical concerns. The process for terminating such Discontinued Indices is as follows:

The PROC will review proposed terminations, taking into account the reasons for termination, the impact on users (if any), the availability of alternative products and other such factors. If termination is approved, users will be provided as much prior notice as is reasonable under the circumstances, typically 90 days. In the event there is little or no known usage identified, the Discontinued Indices may be terminated with less (or no) notice, as applicable. In the event the Discontinued Indices are licensed for use as the basis of an ETF or other widely-available financial product or is otherwise determined by BISL to be an important benchmark without reasonable substitutes, the notice period may be extended, as warranted. Any advance notice period is subject to BISL being reasonably able to continue administering and calculating such benchmark during such period (for example, BISL has access to requisite data on commercially reasonable terms, is not subject to any litigation or other claims, has adequate internal resources and capabilities, etc.). Terminations and associated user engagement decisions made by the PROC are subject to review by BISL's oversight function, the BOC. Criteria for data inputs include reliable delivery and active underlying markets. Whether an applicable market is active depends
on whether there are sufficient numbers of transactions (or other indications of price, such as indicative quotes) in the applicable constituents (or similar underlying constituent elements) that a price (or other value, as applicable) may be supplied for such constituent(s).

Any resulting change to this Methodology will be subject to the review of the PROC under the oversight of the BOC, each of which committees shall be provided all relevant information and materials it requests relating to the change. Details regarding the PROC and BOC are described above. Any relevant changes will be reflected and tracked in updated versions of this Methodology.

Material changes related to the Indices will be made available in advance to affected stakeholders whose input will be solicited. The stakeholder engagement will set forth the rationale for any proposed changes as well as the timeframe and process for responses. The Index Administrator will endeavour to provide at least two weeks for review prior to any material change going into effect. In the event of exigent market circumstances, this period may be shorter. Subject to requests for confidentiality, stakeholder feedback and the Index Administrator's responses will be made accessible upon request.

[1] Note that administrators of significant (but not critical) benchmarks may opt not to disclose (i) re the roles performed by any persons involved in reviewing and approving the methodology and (ii) a description of the procedure for the nomination and removal of the persons involved in reviewing and approving the methodology.

Expert judgement

The Index is rules-based, and its construction is designed to consistently produce values without the exercise of expert judgment or discretion. Nevertheless, BISL may use expert judgment or discretion with regards to the following:

- Index restatements
- Extraordinary circumstances during a market emergency
- Data interruptions, issues, and closures

When expert judgment or discretion is required, BISL undertakes to be consistent in its application, with recourse to written procedures outlined in this Methodology and internal procedures manuals. In certain circumstances exercises of expert judgment or discretion are reviewed by senior members of BISL management and Legal & Compliance teams, and are reported to the PROC, BISL's governance committee, which operates under the supervision of BISL's oversight function, the BOC. BISL also maintains and enforces a code of ethics to prevent conflicts of interest from inappropriately influencing index construction, production, and distribution, including the use of expert judgment or discretion.

Data providers and data extrapolation

The Index is rules-based, and its construction is designed to consistently produce Index levels without the exercise of discretion.

In addition, BISL seeks to avoid contributions of input data that may be subject to the discretion of the source of such data and instead seeks to use input data that is readily available and/or distributed for a number of non-index or benchmark creation purposes. Accordingly, the index requires no 'contributors' to produce and no codes of conduct with any such sources are required.

Conflicts of interest

The Index confers on BISL discretion in making certain determinations, calculations and corrections from time to time. In making those determinations, calculations and corrections, BISL has no obligation to take the needs of any product investor or any other party into consideration. BISL is committed to avoiding and, where necessary, managing actual or potential conflicts of interest in the BISL decision-making process and has established a Conflicts of Interest Policy to minimize or resolve actual or potential conflicts of interest. BISL does not create, trade or market products.

Restatement policy

BISL strives to provide accurate calculation of its indices. However, to the extent a material error in Index Values is uncovered following publication and dissemination, a public notification will be made alerting of such error and what course of action will be undertaken and when. In such situations, BISL may decide to:

1) Not correct until the next index review;
2) Apply a correction going forward with advance notification; or
3) Restate the historical indices

In some cases, BISL may apply discretion and determine that a restatement is required. The decision will take into consideration the following factors (not listed in order of importance):

- The relative importance of the data field impacted by the error
- Whether the indices were replicable
- When the error occurred and when it was discovered
- The number of indices and sub-indices affected
- Whether the impacted indices are linked to tradable products
- The magnitude of the error
- The burden of restatement on client re-processing relative to the impact of the error
- The impact of the restatement on analytical tools

A decision to restate any Index results in the restatement of all impacted Indices. Real-time indices are not considered for restatement, all real-time dissemination is considered indicative. Discrepancies discovered after 12 months will not be corrected.

Appendix I: Glossary

Actual Units	The number of actual units held in each Forward Position or Short FX Forward Index on an Index Business Day.
Available Discount Instrument	The 1D, 1M and 3M Discount Instrument for which the Discount Instrument Source can provide rates on an Index Business Day.
Available FX Instrument	The FX Instruments for which the FX Data Source can provide rates on an Index Business Day.
Calendar Day	Any day.
Capped Currency	With respect to a Membership Determination Date, a Currency that is subject to a specified weight cap.
Capped Weight	With respect to a Membership Determination Date, the weight of a Capped Currency.
Currency	A medium of exchange for goods and services.
Currency Pair	The two currencies for which an FX rate is quoted where the Currency listed first is the Currency and the other is the Index Currency.
Day Count Convention	The number of Calendar Days that determines how interest accrues over time.
Day Count Fraction	The number of actual Calendar Days in a period over the day count convention.
Determination Date	The Index Business Day immediately prior to a Rebalance Date.
Direction	Means going 'long' (1) or 'short' (-1).
Discount Instrument	The 1D, 1M and 3M Discount Instrument Rates.
Discount Instrument Pricing Day	A Federal Reserve Business Day.
Discount Instrument Pricing Offset	The Pricing Offset used to determine the Discount Instrument Rate.
Discount Instrument Rate	The New York 4 P.M. Fixing obtained from the Discount Instrument Source on the number of Discount Instrument Pricing Offset Discount Instrument Pricing Days immediately preceding either an Index Business Day, if such date is a Discount Instrument Pricing Day, or the immediately preceding Discount Instrument Pricing Day.
Discount Instrument Settlement Date	For the 1D tenor, the Discount Instrument Settlement Date follows the same settlement date as the Spot FX Instrument settlement date, otherwise the Discount Instrument Settlement Date follows the same settlement date as the Forward Position Settlement Dates obtained from the FX Data Source.
Discount Instrument Source	Bloomberg Valuation Services (BVAL).
Discount Rate	The discount rate interpolated/extrapolated using the Short and Long Tenor Discount Instruments and its respective Discount Instrument Settlement Dates on an Index Business Day.
Forward Instrument Settlement Date	The settlement date of the Forward Instrument provided by the FX Data Source.
Forward Position	The FX forward contract short the Currency against the Index Currency entered into on such Roll Date.
Forward Position Expiry Date	The date on which the Forward Position expires.
Forward Position Settlement Date	The settlement date of the Forward Position.
Forward Rate	The outright rate for an FX forward contract entered into on a Calendar Day for settlement on the Forward Position Settlement Date as determined by interpolation using the Available FX Instruments.

FX Data Source	BISL Derived FX Data for New York 4 P.M. FX fixing as defined in the BISL Derived FX Data Methodology.
FX Instrument	The Spot Exchange Rate and the 1M and 3M Outright Forward FX Rates.
Incremental Units	The number of units of a Short FX Forward Index traded on Rebalance Date.
Index Base Date	The first date on which an Index publishes a value.
Index Base Value	The value of an index on and prior to the Index Base Date.
Index Business Day	The days on which the Index is calculated.
Index Commencement Date	The date such Index is first made available on the relevant Bloomberg Page.
Index Currency	The currency such Index is represented in.
Index Value	The value of the Index on any given Index Business Day.
Liquidity Allocation	The allocation weight applied to the Liquidity Weight.
Liquidity Currency	The Currency that is an element of the Liquidity Universe Currencies but not an element of the set of Pegged Currencies.
Liquidity Data	The daily average of the over-the-counter foreign exchange turnover of a currency, quoted as a percentage share.
Liquidity Data Source	The source used for Liquidity Data.
Liquidity Data Reference Date	The latest date that the Liquidity Data gets referenced.
Liquidity Data Snapshot Date	The date for which the Liquidity Data, as of the Liquidity Data Reference Date, is taken as a snapshot.
Liquidity Ranking Position	The ranking position of a Liquidity Currency.
Liquidity Universe Currencies	The universe of currencies from the Liquidity Data Source.
Liquidity Weight	The percentage weight of a Liquidity Currency.
Long Tenor Discount Instrument	The Discount Instrument that has the longer length of time remaining before expiry, as determined in accordance with the methodology described in Section 1: Calculation.
Long Tenor FX Instrument	The FX Instrument that has the longer length of time remaining before expiry, as determined in accordance with the methodology described in Section 1: Calculation.
Membership Determination Date	The day the Index calculates the new membership currency weights.
Outright Forward FX Rate	The exchange rate for delivery in the future for a Currency Pair.
Pegged Currencies	Currencies that are pegged to the Index Currency, as listed on PEG <GO>.
Present Value Factor	The factor used to discount forward rates back to the Index Business Day, as determined in accordance with the methodology described in Section 1: Calculation.
Price	The price of a Forward Position is the value, expressed as a forward rate, on an Index Business Day.
Rebalance Date	The day the Index gets rebalanced.
Roll Date	The day on which a new Forward Position is entered in.
Selected Currencies	Currencies that are selected from the currency selection calculation.
Short FX Forward Index	The Index that aims to represent the performance of entering into a rolling short forward position in a Currency against an Index Currency.
Short Tenor Discount Instrument	The Discount Instrument that has the shorter length of time remaining before expiry, as determined in accordance with the methodology described in Section 1: Calculation.

Short Tenor FX Instrument	The FX Instrument that has the shorter length of time remaining before expiry, as determined in accordance with the methodology described in Section 1: Calculation.
Spot Exchange Rate	The spot rate for a Currency against the Index Currency from the FX Data Source.
Spot Settlement Date	The settlement date for the spot rate of a Currency against the Index Currency from the FX Data Source.
Target Units	The number of target units held in each Forward Position or Short FX Forward Index calculated on the Determination Date.
Target Weights	The percentage target weight of each Currency calculated on the Determination Date.
Trade Allocation	The allocation weight applied to the Trade Weight.
Trade Currency	The Currency that is an element of the Trade Universe Currencies but not an element of the set of Pegged Currencies.
Trade Data	The trade weight of a Currency in the broad index of the foreign exchange value of the Index Currency.
Trade Data Source	The source used for Trade Data.
Trade Data Reference Date	The latest date that the Trade Data gets referenced.
Trade Data Snapshot Date	The date for which the Trade Data, as of the Trade Data Reference Date, is taken as a snapshot.
Trade Ranking Position	The ranking position of the Trade Currency.
Trade Universe Currencies	The universe of currencies from the Trade Data Source.
Trade Weight	The percentage weight of the Trade Currency.

Appendix II: Market Disruptions

Cases where the price of an FX or Discount Instrument required by the Index is unavailable may be considered as a market disruption event.

For the Short FX Forward Indices, the index methodology is designed to handle missing prices under certain circumstances by considering the set of Available FX or Discount Instruments on each Index Business Day. However, under the assumption that all FX or Discount Instruments are available, the Index shall be considered to be disrupted should any FX or Discount Instrument that would be selected as either a Short or Long Tenor Instrument, be subject to missing prices for at least three consecutive FX or Discount Pricing Days as of such Index Business Day.

Notwithstanding the above, should there be less than two Available FX or Discount Instruments on a given Index Business Day, the index may use the set of Available FX or Discount Instruments and their prices (but not their settlement dates) from the most recent FX or Discount Pricing Day for which there are at least two Available Instruments as long as such FX or Discount Pricing Day is no more than three FX or Discount Pricing Days prior to such Index Business Day. The index may use the same set of Available FX or Discount Instruments used for the prices from the most recent FX or Discount Pricing Day to calculate the FX or Discount Instrument Settlement Dates of the Short and Long Tenor on such Index Business Day.

For the Excess Return index, these may be considered subject to a market disruption event should any Short FX Forward Index currently in the basket be subject to a market disruption.

Outside of these situations, the impact of the missing price will be assessed, and actions are determined as per the rules stated under Restatement Policy in Section 4: Benchmark oversight and governance.

Appendix III: ESG Disclosures

EXPLANATION OF HOW ESG FACTORS ARE REFLECTED IN THE KEY ELEMENTS OF THE BENCHMARK METHODOLOGY	
1. Name of the benchmark administrator.	Bloomberg Index Services Limited ("BISL")
2. Type of benchmark	Other Benchmark
3. Name of the benchmark or family of benchmarks.	Bloomberg Forward Indices
4. Does the benchmark methodology for the benchmark or family of benchmarks take into account ESG factors?	No
5. Where the response to Item 4 is positive, please list below, for each family of benchmarks, those ESG factors that are taken into account in the benchmark methodology, taking into account the ESG factors listed in Annex II to Delegated Regulation (EU) 2020/1816. Please explain how those ESG factors are used for the selection, weighting or exclusion of underlying assets. The ESG factors shall be disclosed at an aggregated weighted average value at the level of the family of benchmarks.	
a) List of environmental factors considered:	Selection, weighting or exclusion: N/A
b) List of social factors considered:	Selection, weighting or exclusion: N/A
c) List of governance factors considered:	Selection, weighting or exclusion: N/A
6. Where the response to Item 4 is positive, please list below, for each benchmark, those ESG factors that are taken into account in the benchmark methodology, taking into account the ESG factors listed in Annex II to Delegated Regulation (EU) 2020/1816, depending on the relevant underlying asset concerned. Please explain how those ESG factors are used for the selection, weighting or exclusion of underlying assets. The ESG factors shall not be disclosed for each constituent of the benchmark, but shall be disclosed at an aggregated weighted average value of the benchmark. Alternatively, all of this information may be provided in the form of a hyperlink to a website of the benchmark administrator included in this explanation. The information on the website shall be easily available and accessible. Benchmark administrators shall ensure that information published on their website remains available for five years	
a) List of environmental factors considered:	Selection, weighting or exclusion: N/A
b) List of social factors considered:	Selection, weighting or exclusion: N/A
c) List of governance factors considered:	Selection, weighting or exclusion: N/A

7. Data and standards used.	
a) Data input. *(i) Describe whether the data are reported, modelled or, sourced internally or externally.* *(ii) Where the data are reported, modelled or sourced externally, please name the third party data provider.*	N/A
b) Verification of data and guaranteeing the quality of those data. *Describe how data are verified and how the quality of those data is ensured.*	N/A
c) Reference standards *Describe the international standards used in the benchmark methodology.*	N/A
Date on which information has been last updated and reason for the update:	3 July 2024, initial launch.

Disclaimer

Take the next step.

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