BISL Derived FX Data Methodology

April, 2024

Bloomberg

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Introduction

This document describes the methodology for calculating the derived FX rates, and corresponding settlement dates, for use in certain Bloomberg indices.

Historically, non-U.S. Dollar Currency Pairs have developed liquidity later than U.S. Dollar ones. As a result, limited history is available for direct quotes between non-U.S. Dollar Currency Pairs across a significant number of currencies. This is an important consideration when a significant number of non-U.S. Dollar Currency Pairs are required for the local currency or hedged versions of broad Equity and Fixed Income benchmarks spanning many local markets. By deriving non-U.S. Dollar FX rates from rates against the U.S. Dollar as a common denominator this methodology aims to provide both coverage and consistency across a wide range of non-U.S. Dollar Currency Pairs and tenors.

This methodology follows the following principles:

FX rates are expressed as spot or outright forward rates

FX forward rates are typically quoted in either points (to be added to the Spot Rate) or as an outright forward rate. The methodology first converts any input rates expressed in points into an outright forward rate, and all subsequent operations are performed on outright forward rates.

Non-U.S. Dollar rates are derived by crossing through U.S. Dollar rates

FX Spot rates for Currency Pairs not including the U.S. Dollar (as either Base or Quote currency) are derived by crossing the rates of each currency against the U.S. Dollar. The absence of broadly agreed standards for currency quote conventions produces a differentiated set of primary Currency Pairs between regions. Under the assumption of a commonly adopted order of preference[1] for the Base Currency, we consider the Primary Quotes Conventions involving the U.S. Dollar to be where USD is the Base Currency, except for EURUSD, GBPUSD, AUDUSD and NZDUSD, where it is the Quote Currency. The resulting cross rate is produced in the quote convention required dependent on usage.

Settlement Dates are based on crossing through U.S. Dollar

The settlement date corresponding to each U.S. Dollar rate is determined according to the methodology presented in this document. Settlement dates for non-U.S. Dollar rates are taken to be the later of the two settlement dates for each currency against the U.S. Dollar.

Historic data sources are switched consistently

To provide historical FX rates required for index calculation, the input data sources switch over time dependent on availability of the preferred sources. The timing of the data source switches is dependent on usage. Where only spot is required for currency translation, the switch is made dependent only on Spot Rate availability. Where the forward curve is required, the switch is dependent on the availability of both spot and 1M rates. The switch dates for each case are provided in Table 3 ('*FX Data Sources*') in Appendix II. At the time of a switch, as the timing for forward curve usage is based on the availability of data for spot and 1M tenors, there may be other tenors for which there is data on the previous source but not yet on the updated source. In such cases, there may be periods for such tenors where rates are not available immediately post-switch despite being available pre-switch.

Section 1: Calculation

Outright Forward rates (against U.S. Dollar)

Typically, forward FX rates for deliverable and Latin American currencies are quoted in points, whereas those for (non-Latin American) NDF currencies are quoted as outright rates. The outright forward rates for currencies quoted in points are determined as follows:

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[1] EUR, GBP, AUD, NZD, USD, CAD, CHF, JPY

$$OutFwd_{\langle t,s \rangle}^{ccy,Tenor} = Spot_{\langle t,s \rangle}^{ccy} + \left(\frac{Points_{\langle t,s \rangle}^{ccy,Tenor}}{Divisor^{ccy}} \right)$$

Where:

ccy means the Currency crossed against the U.S. Dollar;

$Tenor$ means the Tenor of the FX rate;

t means the Date of the quote;

s means the Fixing Time of the quote (if applicable);

$OutFwd_{\langle t,s \rangle}^{ccy,Tenor}$ means, with respect to Currency ccy and Tenor $Tenor$, the Outright Forward FX rate in the Primary Quote Convention for Date t at Fixing Time s;

$Spot_{\langle t,s \rangle}^{ccy}$ means the Spot Rate in the Primary Quote Convention for Date t at Fixing Time s;

$Points_{\langle t,s \rangle}^{ccy,Tenor}$ means, with respect to Currency ccy and Tenor $Tenor$, the Forward Points in the Primary Quote Convention for Date t at Fixing Time s; and

$Divisor^{ccy}$ means, with respect to Currency ccy, the Divisor.

Crossing between two non-U.S. Dollar Currency Pairs

The input U.S. Dollar Currency Pairs may be quoted with the U.S. Dollar as either the base or Quote Currency, depending on the primary quotation format. Depending on the required quotation format for the resulting cross rate, the appropriate direct calculation formula below is used.

For a non-U.S. Dollar Currency Pair with xxx as the Base Currency and yyy as the Quote Currency, the derived cross rate for a given tenor, date and (if applicable) fixing time, $xxxyyy_{\langle t,s \rangle}^{Tenor}$ is calculated in accordance with the following formulae:

If $xxxUSD_{\langle t,s \rangle}^{Tenor}$ and $USDyyy_{\langle t,s \rangle}^{Tenor}$ are the primary quotes against the U.S. Dollar:

$$xxxyyy_{\langle t,s \rangle}^{Tenor} = xxxUSD_{\langle t,s \rangle}^{Tenor} \times USDyyy_{\langle t,s \rangle}^{Tenor}$$

If $xxxUSD_{\langle t,s \rangle}^{Tenor}$ and $yyyUSD_{\langle t,s \rangle}^{Tenor}$ are both primary quotes against the U.S. Dollar:

$$xxxyyy_{\langle t,s \rangle}^{Tenor} = \frac{xxxUSD_{\langle t,s \rangle}^{Tenor}}{yyyUSD_{\langle t,s \rangle}^{Tenor}}$$

If $USDxxx_{\langle t,s \rangle}^{Tenor}$ and $USDyyy_{\langle t,s \rangle}^{Tenor}$ are both primary quotes against the U.S. Dollar:

$$xxxyyy_{\langle t,s \rangle}^{Tenor} = \frac{USDyyy_{\langle t,s \rangle}^{Tenor}}{xxxUSD_{\langle t,s \rangle}^{Tenor}}$$

If $USDxxx_{\langle t,s \rangle}^{Tenor}$ and $yyyUSD_{\langle t,s \rangle}^{Tenor}$ are both primary quotes against the U.S. Dollar:

$$xxxyyy_{\langle t,s \rangle}^{Tenor} = \frac{1}{USDxxx_{\langle t,s \rangle}^{Tenor} \times yyyUSD_{\langle t,s \rangle}^{Tenor}}$$

Where:

xxx and yyy are non-U.S. Dollar currencies;

$Tenor$ means the Tenor of the FX rate;

t means the Date of the quote;

s means the Fixing Time of the quote (if applicable);

$xxxyyy_{\langle t,s \rangle}^{Tenor}$ means, with respect to Base Currency xxx, Quote Currency yyy and Tenor $Tenor$, the Outright Forward FX rate for Date t at Fixing Time s;

$xxxUSD_{\langle t,s \rangle}^{Tenor}$ means, with respect to Base Currency xxx, Quote Currency USD and Tenor $Tenor$, the Outright Forward FX rate for Date t at Fixing Time s;

$USDyyy_{\langle t,s \rangle}^{Tenor}$ means, with respect to Base Currency USD, Quote Currency yyy and Tenor $Tenor$, the Outright Forward FX rate for Date t at Fixing Time s;

$yyyUSD_{\langle t,s \rangle}^{Tenor}$ means, with respect to Base Currency yyy, Quote Currency USD and Tenor $Tenor$, the Outright Forward FX rate for Date t at Fixing Time s; and

$USDxxx_{\langle t,s \rangle}^{Tenor}$ means, with respect to Base Currency USD, Quote Currency xxx and Tenor $Tenor$, the Outright Forward FX rate for Date t at Fixing Time s.

Spot Settlement Date

For each currency listed in Table 1 ('*Settlement Calculation Parameters*') in Appendix II, the settlement date for the Spot Rate quoted against the U.S. Dollar on date T is determined according to the below rule specified under column 'Spot Rule'. The settlement date for Spot Rates between two non-U.S. Dollar currencies is taken to be the later of the spot settlement dates for each currency against the U.S. Dollar.

Spot Rule A: From date T, advance by the Settlement Delay number of Currency Local Weekend Settlement Days. If the resulting day is not a Common Settlement Day, then advance to the immediately following Common Settlement Day;

Spot Rule B: From date T, advance by the Settlement Delay number of Common Settlement Days;

Spot Rule C: From date T, advance by one (1) Distinct Settlement Business Days, then advance by one (1) Currency Local Weekend Settlement Day. If the resulting day is not a Common Settlement Day, then advance to the immediately following Common Settlement Day;

Spot Rule D: From date T, advance by the Settlement Delay number of Currency Settlement Days. If the resulting day is not a Common Settlement Day, then advance to the immediately following Common Settlement Day;

Weekly Tenor Settlement Dates

For each currency listed in Table 1 ('*Settlement Calculation Parameters*') in Appendix II, the settlement date for the weekly tenor rates (e.g., 1W, 2W, etc.) quoted against the U.S. Dollar on date T is determined according to the below rule. The settlement dates for weekly tenor rates between two non-U.S. Dollar currencies is taken to be the later of the weekly tenor settlement dates for each currency against the U.S. Dollar.

Weekly Rule: Determine the Spot Settlement Date for day T, then:

1. Multiply the number of weeks specified by the tenor by 7 (seven) and add this number of days to the Spot Settlement Date.
2. If the selected date is not a Common Settlement Day, select the next Common Settlement Day.

Monthly Tenor Settlement Dates

For each currency listed in Table 1 ('*Settlement Calculation Parameters*') in Appendix II, the settlement date for the monthly tenor rates (e.g., 1M, 2M, etc.) quoted against the U.S. Dollar on date T is determined according to the below rule specified under column 'Tenor Rule'. The settlement dates for monthly tenor rates between two non-U.S. Dollar currencies is taken to be the later of the monthly tenor settlement dates for each currency against the U.S. Dollar respectively.

Month Rule A: Determine the Spot Settlement Date for day T. If the Spot Settlement Date is not the last Common Settlement Day of the month, then:

1. Add the number of months specified by the monthly tenor to the Spot Settlement Date, keeping the same day of the month. If there are not enough days in the target month, then select the last day of the month.

2. If the selected date is not a Common Settlement Day, roll forward using a Modified Following Convention, to the next Common Settlement Day.

Else, (where the Spot Settlement Date is the last Common Settlement Day of the month,) select the last Common Settlement Day of the resulting month that is the number of months specified by the monthly tenor following the month of the Spot Settlement Date. (This is commonly referred to as the END-END rule, or month end preservation rule.)

Month Rule B: Determine the Spot Settlement Date for day T, then:

1. Add the number of months specified by the monthly tenor to the Spot Settlement Date, keeping the same day of the month. If there are not enough days in the target month, then select the last day of the month.

2. If the selected date is not a Common Settlement Day, roll forward using a Modified Following Convention, to the next Common Settlement Day.

Month Rule C: Follow Rule A, with the added condition that Thursday is not considered to be a Weekend Day (where Thursday would normally be a Weekend Day for this Currency).

Yearly Tenor Settlement Dates

For each currency listed in Table 1 ('*Settlement Calculation Parameters*') in Appendix II, the settlement date for the yearly tenor rates (e.g., 1Y, 2Y, etc.) quoted against the U.S. Dollar on date T follows the same rule as the monthly tenor rates specified under column 'Tenor Rule', by taking each number of years specified by the year tenor multiplied by 12. The settlement dates for yearly tenor rates between two non-U.S. Dollar currencies is taken to be the later of the yearly tenor settlement dates for each currency against the U.S. Dollar respectively.

Section 2: Backtest assumptions

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

- The calendars listed in Table 1 ('*Settlement Calculation Parameters*') represent the calendars currently used for settlement date calculations. Where possible, the calendars used historically are used for historic settlement calculations.

Appendix I: Glossary

Base Currency	The first Currency listed in a Currency Pair. An FX quote is for how many units of the Quote Currency are required to be exchanged for one unit of the Base Currency.
Common Settlement Day	With respect to a Currency, each Weekday that is both not a Weekend Day for that Currency and not a holiday with respect to either the Currency Calendar or the U.S. Dollar Calendar.
Currency	A monetary unit.
Currency Calendar	For each Currency listed in Table 1 ('*Settlement Calculation Parameters*') in Appendix II, the holiday calendar used for FX settlement date calculations, with Bloomberg calendar code listed under column 'Calendar Code'.
Currency Local Weekend Settlement Day	With respect to a Currency, each Weekday that is both not a Weekend Day for that Currency and not a holiday with respect to the Currency Calendar.
Currency Pair	The two currencies for which an FX rate is quoted where the Currency listed first is the Base Currency and the other is the Quote Currency.
Currency Settlement Day	With respect to a Currency, each Weekday that is not a holiday with respect to the Currency Calendar.
Divisor	The scaling factor that quoted Forward Points are divided by.
Fixing Time	The time of day for which an FX quote is priced.
Forward Points	When divided by the Divisor, the value to be added to a spot rate to determine an Outright Forward Rate.
Modified Following Convention	When rolling forward to the next good business day, should this be in the following month, then roll back to the previous good business day.
Outright Forward FX Rate	The exchange rate for delivery in the future for a Currency Pair.
Primary Quote Convention	Currency Pairs where USD is the Base Currency, except for EURUSD, GBPUSD, AUDUSD and NZDUSD, where it is the Quote Currency.
Quote Currency	The second Currency listed in a Currency Pair. An FX quote is for how many units of the Quote Currency are required to be exchanged for one unit of the Base Currency.
Settlement Delay	For each Currency listed in Table 1 ('*Settlement Calculation Parameters*') in Appendix II, the number of days specified under column 'Settlement Delay'.
Settlement Date	The date on which an FX transaction is due to settle.
Spot Rate	The current exchange rate for a Currency Pair.
Tenor	The standardized length of time to expiry for an FX contract.
Weekday	Monday to Friday, inclusive.
Weekend Day	With respect to a Currency, the days specified in Table 2 ('*Weekends*') in Appendix II for the type specified under column 'Weekend Type' in Table 1 ('*Settlement Calculation Parameters*') in Appendix II.
U.S. Dollar Calendar	For FX settlement date calculations, the US Federal Reserve holiday calendar, with Bloomberg calendar code 'FD'.

Appendix II: Currency Information

TABLE 1: SETTLEMENT CALCULATION PARAMETERS

CURRENCY	CALENDAR CODE	SETTLEMENT DELAY	SPOT RULE	TENOR RULE	WEEKEND TYPE
AED	UA	2	D	A	2
AUD	AU	2	A	A	1
BRL	BZ	2	B	A	1
CAD	CA	1	A	A	1
CHF	SZ	2	A	A	1
CLP	CL	2	B	A	1
CNH	C+	2	A	A	1
CNY	C%	2	A	A	1
COP	CO	2	B	A	1
CZK	Z%	2	A	A	1
DKK	DE	2	A	A	1
EGP	EG	2	A	A	3
EUR	TE	2	A	A	1
GBP	GB	2	A	A	1
GEL	GG	2	A	A	1
HKD	$H	2	A	A	1
HUF	H$	2	A	A	1
IDR	1I	2	A	A	1
ILS	IX	2	C	A	1
INR	I$	2	A	A	1
JPY	JN	2	A	A	1
KRW	K%	2	A	A	1
KWD	KU	2	D	A	4
MXN	MX	2	B	A	1
MYR	MA	2	A	A	1
NOK	NO	2	A	A	1
NZD	NZ	2	A	A	1
PEN	PE	2	B	A	1
PHP	+P	1	A	A	1
PKR	PK	2	A	A	1
PLN	PD	2	A	A	1
QAR	QA	2	D	A	5
RUB	R$	1	A	B	1
SAR	S+	2	D	C	6
SEK	SW	2	A	A	1
SGD	SI	2	A	A	1
THB	TH	2	A	A	1
TRY	TU	1	A	A	1
TWD	T+	2	A	A	1
ZAR	SA	2	A	A	1

TABLE 2: WEEKENDS

TYPE	WEEKENDS		
1	Saturday and Sunday		
2	**From (included)**	**To (included)**	**Weekend Days**
		31 December 2006	Thursday and Friday
	01 January 2007	31 December 2021	Friday and Saturday
	01 January 2022		Saturday and Sunday

3	Friday and Saturday		

4			

From (included)	To (included)	Weekend Days
	31 December 1991	Sunday and Monday
01 January 1992	31 December 2006	Thursday and Friday
01 January 2007		Friday and Saturday

5

From (included)	To (included)	Weekend Days
	31 December 2004	Friday
01 January 2005		Friday and Saturday

6

From (included)	To (included)	Weekend Days
	31 December 2013	Friday
01 January 2014		Friday and Saturday

TABLE 3: FX DATA SOURCES FOR LONDON 4PM FIXING

CURRENCY	SOURCE	SPOT	1M	3M	6M
AED	BFIX	01 January 2009	08 May 2017		
AED	BGNL	01 January 1998	06 January 2003		
ARS	BFIX	01 January 2018			
ARS	BGNL	01 January 1998			
AUD	BFIX	28 February 2007	28 August 2007	27 August 2007	27 August 2007
AUD	BGNL	01 January 1998	01 January 1998	01 January 1998	01 January 1998
BRL	BFIX	09 July 2007	05 December 2011	05 December 2011	05 December 2011
BRL	BGNL	01 January 1998	02 January 2001	02 January 2001	02 January 2001
CAD	BFIX	28 February 2007	27 August 2007	27 August 2007	27 August 2007
CAD	BGNL	01 January 1998	01 January 1998	01 January 1998	01 January 1998
CHF	BFIX	28 February 2007	27 August 2007	27 August 2007	27 August 2007
CHF	BGNL	01 January 1998	01 January 1998	01 January 1998	01 January 1998
CLP	BFIX	28 February 2007	03 April 2017	02 January 2018	03 April 2017
CLP	BGNL	01 January 1998	17 April 1998	01 February 1999	01 February 1999
CNH	BFIX	02 January 2013	24 March 2014	24 March 2014	24 March 2014
CNH	BGNL	23 August 2010	26 August 2010	26 August 2010	04 October 2010
CNY	BFIX	02 July 2007	01 May 2017	01 May 2017	01 May 2017
CNY	BGNL	01 January 1998	11 December 1998	11 December 1998	11 December 1998
COP	BFIX	13 November 2007	13 August 2012	01 October 2012	13 August 2012
COP	BGNL	01 January 1998	03 April 2000	03 January 2000	03 January 2000
CZK	BFIX	28 February 2007	01 April 2015	01 January 2016	
CZK	BGNL	01 January 1998	03 August 1998	03 August 1998	
DKK	BFIX	02 January 2008	01 October 2010	03 January 2011	01 January 2008
DKK	BGNL	01 January 1998	02 January 1998	02 January 1998	02 January 1998
EGP	BFIX	26 November 2008	10 May 2017		
EGP	BGNL	01 December 1998	01 January 2009		
EUR	BFIX	28 February 2007	27 August 2007	27 August 2007	27 August 2007
EUR	BGNL	02 January 1998	01 January 1999	01 January 1999	01 January 1999
GBP	BFIX	28 February 2007	27 August 2007	27 August 2007	27 August 2007
GBP	BGNL	01 January 1998	01 January 1998	01 January 1998	01 January 1998

GEL	BFIX	29 May 2017			
GEL	BGNL	01 January 1998			
HKD	BFIX	28 February 2007	01 January 2015	01 January 2014	04 February 2015
HKD	BGNL	01 January 1998	01 January 1998	01 January 1998	01 January 1998
HRK	BFIX	01 January 2014			
HRK	BGNL	02 January 1998			
HUF	BFIX	09 June 2008	30 July 2012	02 January 2018	02 January 2013
HUF	BGNL	01 January 1998	01 January 2009	01 February 2002	01 January 2009
IDR	BFIX	03 July 2008	01 May 2017	01 May 2017	01 May 2017
IDR	BGNL	01 January 1998	02 July 2001	02 July 2001	02 July 2001
ILS	BFIX	04 August 2008	01 January 2016	01 January 2016	01 January 2016
ILS	BGNL	01 January 1998	02 January 2006	02 January 2006	02 January 2006
INR	BFIX	22 June 2007	01 May 2017	01 May 2017	01 May 2017
INR	BGNL	01 January 1998	01 February 1999	01 February 1999	01 February 1999
JPY	BFIX	28 February 2007	27 August 2007	27 August 2007	27 August 2007
JPY	BGNL	01 January 1998	01 January 1998	02 January 1998	02 January 1998
KRW	BFIX	15 April 2008	01 May 2017	01 May 2017	01 May 2017
KRW	BGNL	01 January 1998	01 February 1999	01 February 1999	01 February 1999
KWD	BFIX	23 August 2010	14 June 2023		
KWD	BGNL	01 January 1998	01 December 2008		
MXN	BFIX	28 February 2007	30 October 2008	30 October 2008	31 October 2008
MXN	BGNL	01 January 1998	01 September 1998	01 January 1998	01 September 1998
MYR	BFIX	28 February 2007	01 May 2017	01 May 2017	01 May 2017
MYR	BGNL	01 January 1998	14 September 2004	14 September 2004	14 September 2004
NGN	BFIX	01 January 2018			
NGN	BGNL	01 January 1998			
NOK	BFIX	28 February 2007	27 August 2007	01 January 2015	06 January 2015
NOK	BGNL	01 January 1998	02 January 1998	02 January 1998	02 January 1998
NZD	BFIX	28 February 2007	27 August 2007	27 August 2007	27 August 2007
NZD	BGNL	01 January 1998	02 January 1998	02 January 1998	02 January 1998
PEN	BFIX	03 November 2008	17 May 2017		
PEN	BGNL	02 January 1998	02 January 2002		
PHP	BFIX	02 July 2007	01 May 2017	01 May 2017	01 May 2017
PHP	BGNL	01 January 1998	02 January 2001	01 February 1999	01 January 2009
PKR	BFIX	05 April 2017	14 June 2023		
PKR	BGNL	01 January 1998	01 February 2023		
PLN	BFIX	02 July 2007	03 January 2014	03 January 2014	02 January 2013
PLN	BGNL	01 January 1998	21 July 1998	02 July 2001	21 July 1998
QAR	BFIX	15 May 2009	14 June 2023		
QAR	BGNL	01 January 1998	01 January 2021		
RON	BFIX	01 January 2009	08 May 2017		
RON	BGNL	01 January 1998	24 January 2007		
RUB	BFIX	28 February 2007	03 February 2014	31 July 2017	03 January 2017
RUB	BGNL	01 January 1998	01 March 2005	02 January 2006	11 January 2005
SAR	BFIX	13 July 2010	14 June 2023		
SAR	BGNL	02 January 1998	01 December 2020		
SEK	BFIX	28 February 2007	27 August 2007	27 August 2007	27 August 2007
SEK	BGNL	01 January 1998	02 January 1998	02 January 1998	02 January 1998
SGD	BFIX	28 February 2007	01 January 2015	01 January 2016	01 January 2016
SGD	BGNL	01 January 1998	01 January 1998	01 January 1998	01 January 1998
THB	BFIX	02 January 2012	01 January 2016	01 January 2016	01 January 2016
THB	BGNL	01 January 1998	01 January 1998	01 January 1998	01 January 1998
TRY	BFIX	31 July 2008	08 June 2009	01 January 2013	02 January 2013
TRY	BGNL	01 January 1998	02 January 2002	02 January 2002	02 January 2002
TWD	BFIX	28 February 2007	08 May 2017	01 February 2021	01 February 2021
TWD	BGNL	01 January 1998	01 February 1999	02 January 2002	02 January 2002
ZAR	BFIX	28 February 2007	24 February 2011	01 September 2011	24 February 2011
ZAR	BGNL	01 January 1998	02 January 1998	02 January 1998	02 January 1998

TABLE : FX DATA SOURCES FOR NEW YORK 4PM FIXING

CURRENCY	SOURCE	SPOT	1M	3M	6M
AED	BFIX				
AED	BGN	01 January 1998	06 January 2003		
ARS	BFIX				
ARS	BGN				
AUD	BFIX	28 February 2007	27 August 2007	27 August 2007	27 August 2007
AUD	BGN	01 January 1998	01 January 1998	01 January 1998	01 January 1998
BRL	BFIX	01 March 2017	01 March 2017	01 March 2017	01 March 2017
BRL	BGN	01 January 1998	02 January 2001	02 January 2001	02 January 2001
CAD	BFIX	28 February 2007	27 August 2007	03 January 2011	27 August 2007
CAD	BGN	01 January 1998	01 January 1998	01 January 1998	01 January 1998
CHF	BFIX	28 February 2007	01 January 2010	27 August 2007	27 August 2007
CHF	BGN	01 January 1998	01 January 1998	01 January 1998	01 January 1998
CLP	BFIX				
CLP	BGN	01 January 1998	17 April 1998	01 February 1999	01 February 1999
CNH	BFIX	01 May 2013	01 January 2016	02 July 2014	02 July 2014
CNH	BGN	23 August 2010	26 August 2010	26 August 2010	04 October 2010
CNY	BFIX	13 February 2017	01 May 2017	01 May 2017	01 May 2017
CNY	BGN	01 January 1998	11 December 1998	11 December 1998	11 December 1998
COP	BFIX				
COP	BGN	01 January 1998	03 January 2000	03 January 2000	03 January 2000
CZK	BFIX	28 February 2007	11 March 2015	01 January 2016	
CZK	BGN	01 January 1998	03 August 1998	03 August 1998	
DKK	BFIX	01 January 2008	06 October 2010	03 January 2011	01 January 2013
DKK	BGN	01 January 1998	02 January 1998	02 January 1998	02 January 1998
EGP	BFIX	02 January 2018	10 May 2017		
EGP	BGN	02 January 1998	01 January 2009		
EUR	BFIX	28 February 2007	27 August 2007	27 August 2007	27 August 2007
EUR	BGN	02 January 1998	01 January 1999	01 January 1999	01 January 1999
GBP	BFIX	28 February 2007	27 August 2007	01 January 2010	01 January 2014
GBP	BGN	01 January 1998	01 January 1998	01 January 1998	01 January 1998
GEL	BFIX				
GEL	BGN				
HKD	BFIX	28 February 2007	02 November 2015	01 January 2014	02 November 2015
HKD	BGN	01 January 1998	01 January 1998	01 January 1998	01 January 1998
HRK	BFIX				
HRK	BGN				
HUF	BFIX	06 June 2008	01 January 2015	01 January 2015	01 January 2015
HUF	BGN	01 January 1998	07 January 2002	01 February 2002	01 January 2009
IDR	BFIX	18 April 2016	01 May 2017	01 May 2017	01 May 2017
IDR	BGN	01 January 1998	02 July 2001	02 July 2001	02 July 2001
ILS	BFIX	03 November 2008	01 January 2016	01 January 2016	01 January 2016
ILS	BGN	01 January 1998	02 January 2006	02 January 2006	02 January 2006
INR	BFIX	18 April 2016	01 May 2017	01 May 2017	01 May 2017
INR	BGN	01 January 1998	01 February 1999	02 August 1999	01 February 1999
JPY	BFIX	28 February 2007	27 August 2007	27 August 2007	01 August 2013
JPY	BGN	01 January 1998	01 January 1998	02 January 1998	01 January 1998
KRW	BFIX	18 April 2016	01 May 2017	01 May 2017	01 May 2017
KRW	BGN	01 January 1998	01 February 1999	01 February 1999	01 February 1999
KWD	BFIX				
KWD	BGN	01 January 1998			
MXN	BFIX	13 April 2007	29 October 2008	29 October 2008	29 October 2008
MXN	BGN	01 January 1998	01 September 1998	01 September 1998	01 September 1998
MYR	BFIX	03 January 2017	01 May 2017	01 May 2017	01 May 2017
MYR	BGN	01 January 1998	14 September 2004	14 September 2004	14 September 2004
NGN	BFIX				
NGN	BGN				
NOK	BFIX	28 February 2007	01 April 2015	01 April 2015	03 February 2015

NOK	BGN	01 January 1998	02 January 1998	02 January 1998	02 January 1998
NZD	BFIX	28 February 2007	27 August 2007	27 August 2007	27 August 2007
NZD	BGN	01 January 1998	02 January 1998	01 January 1998	01 January 1998
PEN	BFIX				
PEN	BGN	02 January 1998	02 January 2003		
PHP	BFIX	18 April 2016	01 May 2017	01 May 2017	01 May 2017
PHP	BGN	01 January 1998	01 February 1999	01 February 1999	01 February 1999
PKR	BFIX				
PKR	BGN	02 January 1998			
PLN	BFIX	06 August 2008	05 January 2015	05 January 2015	05 January 2015
PLN	BGN	01 January 1998	21 July 1998	02 July 2001	21 July 1998
QAR	BFIX				
QAR	BGN	01 January 1998			
RON	BFIX				
RON	BGN				
RUB	BFIX	01 January 2015	03 January 2017	01 January 2015	03 January 2017
RUB	BGN	01 January 1998	01 March 2005	02 January 2006	11 January 2005
SAR	BFIX				
SAR	BGN	02 January 1998			
SEK	BFIX	28 February 2007	03 August 2009	01 January 2010	27 August 2007
SEK	BGN	01 January 1998	02 January 1998	02 January 1998	02 January 1998
SGD	BFIX	28 February 2007	01 January 2015	01 January 2016	01 January 2016
SGD	BGN	01 January 1998	01 January 1998	01 January 1998	01 January 1998
THB	BFIX	02 January 2012	01 January 2016	01 January 2016	01 January 2016
THB	BGN	01 January 1998	01 January 1998	01 January 1998	01 January 1998
TRY	BFIX	02 January 2012	01 January 2016	01 January 2016	02 March 2015
TRY	BGN	01 January 1998	02 January 2002	01 January 2009	02 January 2002
TWD	BFIX	13 February 2017	08 May 2017	01 February 2021	01 February 2021
TWD	BGN	01 January 1998	01 February 1999	02 January 2002	02 January 2002
ZAR	BFIX	28 February 2007	01 January 2016	01 January 2016	04 March 2015
ZAR	BGN	01 January 1998	02 January 1998	02 January 1998	02 January 1998

Change Log

Version	Reviewer	Review Date	Comments
3	Clarinda Tsang	5 April 2024	Updated with FX Data Sources for New York 4pm Fixing and additional London 4pm Fixings for KWD, PKR, QAR, SAR and RON.
2	Clarinda Tsang	29 Sep 2022	Updated with additional tenors and settlement date calculation, added CNH currency
1	Christopher Houghton	29 July 2022	Launched Derived FX Data Methodology to INP and website

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