



# Contract Specifications for CurveGlobal products Trading on LSEDM

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The Contract Specifications for CurveGlobal products trading on the London Stock Exchange Derivatives Market are set out in this document. This document forms part of the rule book and shall have effect as if set out in full in the body of the rule book.

## 1.0 STIRS

### 1.1 Three month Euribor<sup>®</sup> Futures

Parameter	Description			
<b>Contract Underlying</b>	Based on Three Month European Interbank Offered Rate (Euribor <sup>®</sup> ) <sup>1</sup> . Three-month unsecured euro term deposits on EUR 1,000,000			
<b>Type of Contract</b>	Cash settled Futures Contracts with Daily Cash Settlement			
<b>Central Counterparty</b>	LCH			
<b>Trading Hours (London time)</b>	Opening auction	Continuous trading	Manual Trade Reporting (Block Trades / Basis Trades / Exchange of Future for Swap)	Electronic Trade Reporting (Block Trades / Basis Trades / Exchange of Future for Swap)
	06.30 - 07.00	07:00 - 21:00	07:00 - 20:30	07:00 - 21:00
<b>Currency</b>	EUR, Euro, €			
<b>Quotation display</b>	100 minus rate of interest			
<b>Tick Size and Tick Value</b>	<b>Tick Size</b>		<b>Tick Value</b>	
	0.005		EUR 12.50	
<b>Settlement style</b>	Cash Settlement			
<b>Listing Day</b>	First Trading Day following the Last Trading Day			
<b>Contract Lifetimes and Expiration Months</b>	Twenty four quarterly delivery months of the March, June, September and December cycle, as well as four serial months, such that 28 delivery months are available for trading, with the nearest six delivery months being consecutive calendar months.			
<b>Daily Settlement Price (DSP)</b>	The DSP will be calculated at 16:15 London time and disseminated shortly afterwards. It will be derived from the volume weighted average of the prices of all transactions during the minute before 16:15 London time, provided that five or more trades are transacted within this period. If there is insufficient trade data available for an expiry month, the DSP will be established using a Fair Value model. In the event that a price cannot be determined, the Exchange will determine the DSP in accordance with the Rules of the London Stock Exchange Derivatives Market.			
<b>Daily Cash Settlement</b>	One Bank day after the Trade Day / calculation of Daily Settlement Price for cash movements of Daily Settlement Amounts.			
<b>Exchange Delivery Settlement Price (EDSP)</b>	The EDSP shall be established by LSEDM based on the European Money Markets Institute (EMMI Euribor <sup>®</sup> ) for 3 month Euro deposits at 11:00 Brussels time (10:00 London time) on the Expiration Day. The EDSP will be 100 minus the EMMI Euribor <sup>®</sup> rate rounded to 3 decimal places. Where the EDSP is not an exact multiple of 0.001, it will be rounded to the nearest 0.001 or, where the EDSP is an exact uneven multiple of 0.0005, to the nearest lower 0.001 (e.g. an EMMI Euribor <sup>®</sup> rate of 1.9225 becomes 1.922).			
<b>Last Trading Day</b>	Second Trading Day before 3rd Wednesday of the contract month. Trading in expiring contracts terminates at 10:00 London time on the Last Trading Day.			

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## 1.2 Three month Sterling Futures

Parameter	Description			
<b>Contract Underlying</b>	Based on ICE Benchmark Administration Limited London Interbank Offered Rate (ICE LIBOR) <sup>2</sup> rate for three month deposit of GBP 500,000			
<b>Type of Contract</b>	Cash settled Futures Contracts with Daily Cash Settlement			
<b>Central Counterparty</b>	LCH			
<b>Trading Hours (London time)</b>	Opening auction	Continuous trading	Manual Trade Reporting (Block Trades / Basis Trades / Exchange of Future for Swap)	Electronic Trade Reporting (Block Trades / Basis Trades / Exchange of Future for Swap)
	06.30 - 07.30	07:30 - 18:00	07:30 - 18:00	07:30 - 18:00
<b>Currency</b>	GBP, British Pound, £			
<b>Quotation display</b>	100 minus rate of interest			
<b>Tick Size and Tick Value</b>	<b>Tick Size</b>		<b>Tick Value</b>	
	0.005		GBP 6.25	
<b>Settlement style</b>	Cash Settlement			
<b>Listing Day</b>	First Trading Day following Last Trading Day			
<b>Contract Lifetimes and Expiration Months</b>	Twenty four quarterly delivery months of the March, June, September and December cycle, as well as two serial months, such that 26 delivery months are available for trading, with the nearest three delivery months being consecutive calendar months.			
<b>Daily Settlement Price (DSP)</b>	The DSP will be calculated at 16:15 London time and disseminated shortly afterwards. It will be derived from the volume weighted average of the prices of all transactions during the minute before 16:15 London time, provided that five or more trades are transacted within this period. If there is insufficient trade data available for an expiry month, the DSP will be established using a Fair Value model. In the event that a price cannot be determined, the Exchange will determine the DSP in accordance with the Rules of the London Stock Exchange Derivatives Market.			
<b>Daily Cash Settlement</b>	One Bank day after the Trade Day / calculation of Daily Settlement Price for cash movements of Daily Settlement Amounts.			
<b>Exchange Delivery Settlement Price (EDSP)</b>	The EDSP shall be established by LSEDM based on the ICE Benchmark Administration London Interbank Offered Rate (ICE LIBOR) for 3 month Sterling deposits at 11:00 London time on the Expiration Day. The EDSP will be 100 minus the ICE LIBOR rate rounded to 3 decimal places. Where the EDSP is not an exact multiple of 0.001, it will be rounded to the nearest 0.001 or, where the EDSP is an exact uneven multiple of 0.0005, to the nearest lower 0.001. (e.g. an ICE LIBOR rate of 1.7165 becomes 1.716).			
<b>Last Trading Day</b>	Trading will cease at 11:00 London time on the standard IMM dates (3 <sup>rd</sup> Wednesday of the month).			

<sup>2</sup> ICE LIBOR is a trade mark of ICE Benchmark Administration.

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### 1.3 CurveGlobal® Three month SONIA Futures

Parameter	Description			
<b>Contract Underlying</b>	Based on the compounded Sterling Over Night Index Average (SONIA) <sup>3</sup> rate calculated over the relevant accrual period on a notional amount of GBP 500,000.			
<b>Type of Contract</b>	Cash settled Futures Contracts with Daily Cash Settlement			
<b>Central Counterparty</b>	LCH			
<b>Trading Hours</b>	Opening auction	Continuous trading	Manual Trade Reporting (Block Trades / Basis Trades / Exchange of Future for Swap)	Electronic Trade Reporting (Block Trades / Basis Trades / Exchange of Future for Swap)
	06:30 – 07:30	07:30 – 18:00	07:30 – 18:00	07:30 – 18:00
<b>Currency</b>	GBP, Pounds Sterling, £			
<b>Quotation display</b>	100 minus rate of interest			
<b>Tick Size and Tick Value</b>	<b>Tick Size</b>		<b>Tick Value</b>	
	0.005		GBP 6.25	
<b>Settlement style</b>	Cash Settlement			
<b>Listing Day</b>	First Trading Day following the Last Trading Day			
<b>Contract Lifetimes and Expiration Months</b>	Twenty-five quarterly delivery months of the March, June, September and December cycle where the front quarterly month will be the contract in accrual and all 25 delivery months are available for trading.			
<b>Daily Settlement Price (DSP)</b>	The DSP will be calculated at 16:15 London time and disseminated shortly afterwards. It will be derived from the volume weighted average of the prices of all transactions during the minute before 16:15 London time, provided that five or more trades are transacted within this period. If there is insufficient trade data available for a specific day, the DSP will be established using a Fair Value model. In the event that a price cannot be determined, the Exchange will determine the DSP in accordance with the Rules of the London Stock Exchange Derivatives Market.			
<b>Daily Cash Settlement</b>	One Bank day after the Trade Day / calculation of Daily Settlement Price for cash movements of Daily Settlement Amounts.			
<b>Accrual Period</b>	The contract month's IMM date to the day before the next IMM date. (e.g. Dec Contract accrual will start from Dec IMM to Mar IMM – 1 day).			
<b>Exchange Delivery Settlement Price (EDSP)</b>	LSEDM shall establish the EDSP by 11:00 London time on the publication day of the last SONIA fixing for the relevant accrual period. The EDSP is based on the compounded SONIA rate over the accrual period and will be 100 minus this rate. The compounding will be calculated to 8 decimal places during the accrual period and then rounded to 4 decimal places for the EDSP. The compounding represents the effective rate of interest achieved by reinvesting at SONIA for each day of the accrual period of the contract.			
<b>Last Trading Day</b>	Trading will cease at 08:30 London time on the standard IMM dates (3 <sup>rd</sup> Wednesday of the month).			

<sup>3</sup> The "SONIA" mark is used under licence from the Bank of England (the benchmark administrator of SONIA), and the use of such mark does not imply or express any approval or endorsement by the Bank of England. "Bank of England" and "SONIA" are registered trademarks of the Bank of England.

## 2.0 Medium term / Long term rates

### 2.1 Schatz Futures

Parameter	Description			
<b>Contract Underlying</b>	EUR 100,000 nominal value notional Schatz with 6% coupon <sup>4</sup>			
<b>Type of Contract</b>	Physically settled Futures Contracts with Daily Cash Settlement			
<b>Central Counterparty</b>	LCH			
<b>Trading Hours (London time)</b>	Opening auction	Continuous trading	Manual Trade Reporting (Block Trades / Basis Trades / Exchange of Future for Swap)	Electronic Trade Reporting (Block Trades / Basis Trades / Exchange of Future for Swap)
	06.30 - 07.00	07:00 - 21:00	07:00 - 20:30	07:00 - 21:00
<b>Currency</b>	EUR, Euro, €			
<b>Quotation display</b>	Percentage of par value			
<b>Tick Size and Tick Value</b>	<b>Tick Size</b>		<b>Tick Value</b>	
	0.0025		EUR 2.50	
<b>Settlement style</b>	Physical Settlement. Delivery of a bond selected from the basket of approved deliverable bonds of the Federal Republic of Germany as published by LSEDM			
<b>Deliverable Bond Standards</b>	<p>Deliverable Bonds will have the following characteristics: be Debt Securities issued by the Federal Republic of Germany; have an original term of no longer than 11 years; have a remaining period to redemption at delivery within the maturity range 1¾ - 2¼ years; have any coupon range; bear interest at a single fixed rate; have no terms permitting or requiring early redemption; have both principal and interest denominated in Euros; not be callable; and have an aggregate principle amount outstanding of not less than €5 billion.</p> <p>Deliverable bonds should satisfy the above standards and be identified as deliverable by LSEDM not less than ten Trading Days prior to the Delivery Date.</p>			
<b>Listing Day</b>	First Trading Day following Last Trading Day			
<b>Contract Lifetimes and Expiration Months</b>	The three nearest quarterly months of the March, June, September and December cycle.			
<b>Daily Settlement Price (DSP)</b>	The DSP will be calculated at 16:15 London time and disseminated shortly afterwards. It will be derived from the volume weighted average of the prices of all transactions during the minute before 16:15 London time, provided that five or more trades are transacted within this period. If there is insufficient trade data available for an expiry month, the DSP will be established using a Fair Value model. In the event that a price cannot be determined, the Exchange will determine the DSP in accordance with the Rules of the London Stock Exchange Derivatives Market.			
<b>Daily Cash Settlement</b>	One Bank day after the Trade Day / calculation of Daily Settlement Price for cash movements of Daily Settlement Amounts.			
<b>Exchange Delivery Settlement Price (EDSP)</b>	The EDSP is established on the Last Trading Day at 11:30 London time based on the volume weighted average price of all trades during the final five minutes of trading provided that more than five trades occurred during this time, otherwise the volume weighted average price of the last five trades of the day, provided that these are not older than 60 minutes. If there is insufficient trading data available, the EDSP will be established using a Fair Value model. In the event that a price cannot be determined, the Exchange will determine the EDSP in accordance with the rules of the London Stock Exchange Derivatives Market.			
<b>Delivery Day</b>	The tenth calendar day of the respective quarterly month, if this day is a Trading Day; otherwise, the Trading Day immediately succeeding that day.			
<b>Last Trading Day</b>	Two Trading Days prior to the Delivery Day of the relevant delivery month. Trading will cease at 11:30 London time.			

<sup>4</sup> List of Deliverable Bonds can be found on LSEDM website

## 2.2 Bobl Futures

Parameter	Description			
<b>Contract Underlying</b>	EUR 100,000 nominal value notional Bobl with 6% coupon <sup>5</sup>			
<b>Type of Contract</b>	Physically settled Futures Contracts with Daily Cash Settlement			
<b>Central Counterparty</b>	LCH			
<b>Trading Hours (London time)</b>	Opening auction	Continuous trading	Manual Trade Reporting (Block Trades / Basis Trades / Exchange of Future for Swap)	Electronic Trade Reporting (Block Trades / Basis Trades / Exchange of Future for Swap)
	06.30 - 07.00	07:00 - 21:00	07:00 - 20:30	07:00 - 21:00
<b>Currency</b>	EUR, Euro, €			
<b>Quotation display</b>	Percentage of par value			
<b>Tick Size and Tick Value</b>	<b>Tick Size</b>		<b>Tick Value</b>	
	0.005		EUR 5	
<b>Settlement style</b>	Physical Settlement. Delivery of a bond selected from the basket of approved deliverable bonds of the Federal Republic of Germany as published by LSEDM.			
<b>Deliverable Bond Standards</b>	<p>Deliverable Bonds will have the following characteristics: be Debt Securities issued by the Federal Republic of Germany; have an original term of no longer than 11 years; have a remaining period to redemption at delivery within the maturity range 4½ - 5½ years; have any coupon range; bear interest at a single fixed rate; have no terms permitting or requiring early redemption; have both principal and interest denominated in Euros; not be callable; and have an aggregate principle amount outstanding of not less than €5 billion.</p> <p>Deliverable bonds should satisfy the above standards and be identified as deliverable by LSEDM not less than ten Trading Days prior to the Delivery Date.</p>			
<b>Listing Day</b>	First Trading Day following the Last Trading Day			
<b>Contract Lifetimes and Expiration Months</b>	The three nearest quarterly months of the March, June, September and December cycle.			
<b>Daily Settlement Price (DSP)</b>	The DSP will be calculated at 16:15 London time and disseminated shortly afterwards. It will be derived from the volume weighted average of the prices of all transactions during the minute before 16:15 London time, provided that five or more trades are transacted within this period. If there is insufficient trade data available for an expiry month, the DSP will be established using a Fair Value model. In the event that a price cannot be determined, the Exchange will determine the DSP in accordance with the Rules of the London Stock Exchange Derivatives Market.			
<b>Daily Cash Settlement</b>	One Bank day after the Trade Day / calculation of Daily Settlement Price for cash movements of Daily Settlement Amounts.			
<b>Exchange Delivery Settlement Price (EDSP)</b>	The EDSP is established on the Last Trading Day at 11:30 London time based on the volume weighted average price of all trades during the final five minutes of trading provided that more than five trades occurred during this time, otherwise the volume weighted average price of the last five trades of the day, provided that these are not older than 60 minutes. If there is insufficient trading data available, the EDSP will be established using a Fair Value model. In the event that a price cannot be determined, the Exchange will determine the EDSP in accordance with the rules of the London Stock Exchange Derivatives Market.			
<b>Delivery Day</b>	The tenth calendar day of the respective quarterly month, if this day is a Trading Day; otherwise, the Trading Day immediately succeeding that day.			
<b>Last Trading Day</b>	Two Trading Days prior to the Delivery Day of the relevant delivery month. Trading will cease at 11:30 London time.			

<sup>5</sup> List of Deliverable Bonds can be found on LSEDM website

## 2.3 Bund Futures

Parameter	Description			
<b>Contract Underlying</b>	EUR 100,000 nominal value notional Bund with 6% coupon <sup>6</sup>			
<b>Type of Contract</b>	Physically settled Futures Contracts with Daily Cash Settlement			
<b>Central Counterparty</b>	LCH			
<b>Trading Hours (London time)</b>	Opening auction	Continuous trading	Manual Trade Reporting (Block Trades / Basis Trades / Exchange of Future for Swap)	Electronic Trade Reporting (Block Trades / Basis Trades / Exchange of Future for Swap)
	06.30 - 07.00	07:00 - 21:00	07:00 - 20:30	07:00 - 21:00
<b>Currency</b>	EUR, Euro, €			
<b>Quotation display</b>	Percentage of par value			
<b>Tick Size and Tick Value</b>	<b>Tick Size</b>		<b>Tick Value</b>	
	0.005		EUR 5	
<b>Settlement style</b>	Physical Settlement. Delivery of a bond selected from the basket of approved deliverable bonds of the Federal Republic of Germany as published by LSEDM.			
<b>Deliverable Bond Standards</b>	<p>Deliverable Bonds will have the following characteristics: be Debt Securities issued by the Federal Republic of Germany; have an original term of no longer than 11 years; have a remaining period to redemption at delivery within the maturity range 8½ - 10½ years; have any coupon range; bear interest at a single fixed rate; have no terms permitting or requiring early redemption; have both principal and interest denominated in Euros; not be callable; and have an aggregate principle amount outstanding of not less than €5 billion.</p> <p>Deliverable bonds should satisfy the above standards and be identified as deliverable by LSEDM not less than ten Trading Days prior to the Delivery Date.</p>			
<b>Listing Day</b>	First Trading Day following the Last Trading Day			
<b>Contract Lifetimes and Expiration Months</b>	The three nearest quarterly months of the March, June, September and December cycle			
<b>Daily Settlement Price (DSP)</b>	The DSP will be calculated at 16:15 London time and disseminated shortly afterwards. It will be derived from the volume weighted average of the prices of all transactions during the minute before 16:15 London time, provided that five or more trades are transacted within this period. If there is insufficient trade data available for an expiry month, the DSP will be established using a Fair Value model. In the event that a price cannot be determined, the Exchange will determine the DSP in accordance with the Rules of the London Stock Exchange Derivatives Market.			
<b>Daily Cash Settlement</b>	One Bank day after the Trade Day / calculation of Daily Settlement Price for cash movements of Daily Settlement Amounts.			
<b>Exchange Delivery Settlement Price (EDSP)</b>	The EDSP is established on the Last Trading Day at 11:30 London time based on the volume weighted average price of all trades during the final five minutes of trading provided that more than five trades occurred during this time, otherwise the volume weighted average price of the last five trades of the day, provided that these are not older than 60 minutes. If there is insufficient trading data available, the EDSP will be established using a Fair Value model. In the event that a price cannot be determined, the Exchange will determine the EDSP in accordance with the rules of the London Stock Exchange Derivatives Market.			
<b>Delivery Day</b>	The tenth calendar day of the respective quarterly month, if this day is a Trading Day; otherwise, the Trading Day immediately succeeding that day.			
<b>Last Trading Day</b>	Two Trading Days prior to the Delivery Day of the relevant delivery month. Trading will cease at 11:30 London time.			

<sup>6</sup> List of Deliverable Bonds can be found on LSEDM website



## 2.4 Long Gilt Futures

Parameter	Description			
<b>Contract Underlying</b>	GBP 100,000 nominal value notional Gilt with 4% coupon <sup>7</sup>			
<b>Type of Contract</b>	Physically settled Futures Contracts with Daily Cash Settlement			
<b>Central Counterparty</b>	LCH			
<b>Trading Hours (London time)</b>	Opening auction	Continuous trading	Manual Trade Reporting (Block Trades / Basis Trades / Exchange of Future for Swap)	Electronic Trade Reporting (Block Trades / Basis Trades / Exchange of Future for Swap)
	06.30 - 08.00	08:00 - 18:00	08:00 - 18:00	08:00 - 18:00
<b>Currency</b>	GBP, British Pounds, £			
<b>Quotation display</b>	Percentage of par value			
<b>Tick Size and Tick Value</b>	<b>Tick Size</b>		<b>Tick Value</b>	
	0.005		GBP 5	
<b>First Notice Day</b>	Two Trading Days prior to the first calendar day of the delivery month			
<b>Last Notice Day</b>	First Trading Day after the Last Trading Day			
<b>Settlement style</b>	Physical Settlement. Delivery of a bond selected from the basket of approved deliverable Gilts as published by LSEDM.			
<b>Deliverable Bond Standards</b>	<p>Deliverable Bonds will have the following characteristics: be issued by the UK Debt Management Office for HM Treasury in the United Kingdom; have a remaining period to redemption at delivery within the maturity range 8½ - 13 years; provide for semi-annual coupon payments; pay a fixed rate coupon in the range 1% - 7%; have no terms permitting or requiring early redemption; have both principal and interest denominated in GBP; not be in convertible or bearer form; be fully paid on or prior to the Last Notice Day for the Delivery Month; and have an aggregate principle amount outstanding of not less than £1.5 billion which shall be fungible.</p> <p>Deliverable bonds should satisfy the above standards and be identified as deliverable by LSEDM not less than ten Trading Days prior to the First Notice Day of the Delivery Month.</p>			
<b>Listing Day</b>	First Trading Day following the Last Trading Day			
<b>Contract Lifetimes and Expiration Months</b>	The three nearest quarterly months of the March, June, September and December cycle.			
<b>Daily Settlement Price (DSP)</b>	The DSP will be calculated at 16:15 London time and disseminated shortly afterwards. It will be derived from the volume weighted average of the prices of all transactions during the minute before 16:15 London time, provided that five or more trades are transacted within this period. If there is insufficient trade data available for an expiry month, the DSP will be established using a Fair Value model. In the event that a price cannot be determined, the Exchange will determine the DSP in accordance with the Rules of the London Stock Exchange Derivatives Market.			
<b>Daily Cash Settlement</b>	One Bank day after the Trade Day / calculation of Daily Settlement Price for cash movements of Daily Settlement Amounts.			
<b>Exchange Delivery Settlement Price (EDSP)</b>	The EDSP is established on the second Trading Day prior to the Delivery Day at 11:00 London time based on the volume weighted average price of all trades during the final five minutes of trading provided that more than five trades occurred during this time, otherwise the volume weighted average price of the last five trades of the day, provided that these are not older than 60 minutes. If there is insufficient trading data available, the EDSP will be established using a Fair Value model. In the event that a price cannot be determined, the exchange will determine the EDSP in accordance with the Rules of the London Stock Exchange Derivatives Market.			

<sup>7</sup> List of Deliverable Gilts can be found on the LSEDM website

<b>Delivery Day</b>	Any Trading Day in delivery month (at seller's choice).
<b>Last Trading Day</b>	Two Trading Days prior to the last Delivery Day in the delivery month. On the Last Trading Day, trading in the front delivery month will cease at 11:00 London time.

## 3.0 Appendix

### 3.1 Long Gilt Futures Conversion Factor calculation

For each Deliverable Gilt, which has to be fully paid, the Conversion Factor (CF) will be calculated in accordance with the formula:

$$CF = \frac{1}{\left(1 + \frac{x}{2}\right)^{f_e}} \left[ d_1 + \frac{d_2}{\left(1 + \frac{x}{2}\right)} + \frac{c}{x} \left( \frac{1}{\left(1 + \frac{x}{2}\right)} - \frac{1}{\left(1 + \frac{x}{2}\right)^n} \right) + \frac{1}{\left(1 + \frac{x}{2}\right)^n} \right] - AI$$

where:

*DD*: Delivery date

*NCD*: Next quasi-coupon date after the first day of the delivery month

*1NCD*: 1 quasi-coupon period after NCD

*NCD1*: 1 quasi-coupon period before NCD

*NCD2*: 2 quasi-coupon periods before NCD

*e*:  $NCD1 - DD$

*b<sub>e</sub>*: If  $e < 0$ ,  $b_e = NCD - NCD1$

If  $e \geq 0$ ,  $b_e = NCD1 - NCD2$

*f<sub>e</sub>*:  $1 + \frac{e}{b_e}$

*d<sub>1</sub>*: The fraction of the coupon *c* due on NCD.

$d_1 < c/2$  if the first day of the delivery month occurs in a short first coupon period

$d_1 = 0$  if the first day of the delivery month occurs in the first quasi-coupon period of a long first coupon period;

$d_1 = 0$  if the first day of the delivery month occurs in the ex-dividend period;

$d_1 > c/2$  if the first day of the delivery month occurs in the second quasi-coupon period of a long first coupon period.

*d<sub>2</sub>*: The fraction of the coupon *c* due on 1NCD

$d_2 > c/2$  if the first day of the delivery month occurs in the first quasi coupon period of a long first coupon period;  
otherwise:

$d_2 = c/2$

*x*: Notional coupon as specified in contract specifications (e.g.  $x = 0.04$  for a 4% notional coupon).

*c*: Annual coupon (e.g.  $c = 0.02$  for a Bond paying 2% coupon).

*n*: Number of full coupon periods between the following quasi-coupon date and the redemption date.

*AI*: Accrued interest per £1 nominal of the Gilt calculated using the formula set out below.

### Accrued Interest

The accrued interest (AI) in the formula set out above will be calculated in accordance with the following formulae:

**A. If the first day of the delivery month occurs in a standard coupon period, and:**

- the first day of the delivery month occurs on or before the ex-dividend date:

$$AI = \frac{t}{s} \times \frac{c}{2}$$

- the first day of the delivery month occurs after the ex-dividend date:

$$AI = \left( \frac{t}{s} - 1 \right) \times \frac{c}{2}$$

**B. If the first day of the delivery month occurs in a short first coupon period, and:**

- the first day of the delivery month occurs on or before the ex-dividend date:

$$AI = \frac{t^*}{s} \times \frac{c}{2}$$

- the first day of the delivery month occurs after the ex-dividend date:

$$AI = \left( \frac{t^* - r}{s} \right) \times \frac{c}{2}$$

**C. If the first day of the delivery month occurs in a long first coupon period, and:**

- the first day of the delivery month occurs during the first quasi-coupon period:

$$AI = \frac{t^*}{s_1} \times \frac{c}{2}$$

- the first day of the delivery month occurs during the second quasi-coupon period on or before the ex-dividend date:

$$AI = \left( \frac{r_1}{s_1} + \frac{r_2}{s_2} \right) \times \frac{c}{2}$$

- the first day of the delivery month occurs during the second quasi-coupon period and after the ex-dividend date:

$$AI = \left( \frac{r_2}{s_2} - 1 \right) \times \frac{c}{2}$$

where:

*AI*: accrued interest per £100 nominal of the Gilt

*c*: Annual coupon (e.g.  $c = 0.02$  for a Bond paying 2% coupon).

*t*: The number of calendar days from and including the previous quasi-coupon date up to but excluding the first day of the delivery month

*s*: The number of calendar days in the full quasi-coupon period in which the first day of the delivery month occurs

*t\**: The number of calendar days from and including the issue date up to but excluding the first day of the delivery month;

*r*: The number of calendar days from and including the issue date up to but excluding the next quasi-coupon date

*s*<sub>1</sub>: The number of calendar days in the full quasi-coupon period in which the issue date occurs;

*s*<sub>2</sub>: The number of calendar days in the next full quasi-coupon period after the quasi-coupon period in which the issue date occurs;

*r*<sub>1</sub>: The number of calendar days from and including the issue date up to but excluding the next quasi-coupon date;

*r*<sub>2</sub>: The number of calendar days from and including the quasi-coupon date after the issue date up to but excluding the first day of the delivery month which falls in the quasi-coupon period after the quasi-coupon period in which the issue date occurs.

### 3.2 German Bonds Futures Conversion Factor calculation

For each Deliverable German Bond, the Conversion Factor (CF) will be calculated in accordance with the formula:

$$CF = \frac{1}{(1+x)^{f_e}} \left[ c * f_l + \frac{c}{x} \left( 1 - \frac{1}{(1+x)^n} \right) + \frac{1}{(1+x)^n} \right] - AI$$

where:

*DD*: Delivery date

*NCD*: Next coupon date after delivery date

*NCD1*: 1 year before next coupon date

*NCD2*: 2 years before next coupon date

*LCD*: If *DD* is in the first coupon period, *LCD* = Issue date; otherwise

*LCD* = last coupon date before delivery date

*x*: Notional coupon as specified in contract specifications (e.g.  $x = 0.06$  for a 6% notional coupon).

*c*: Annual coupon (e.g.  $c = 0.02$  for a Bond paying 2% coupon).

*n*: Number of full coupon periods between the following coupon date and the redemption date.

*e*:  $NCD1 - DD$

*b<sub>e</sub>*: If  $e < 0$ ,  $b_e = NCD - NCD1$

If  $e \geq 0$ ,  $b_e = NCD1 - NCD2$

*f<sub>e</sub>*:  $1 + \frac{e}{b_e}$

*l*:  $NCD1 - LCD$

*b<sub>l</sub>*: If  $l < 0$ ,  $b_l = NCD - NCD1$

If  $l \geq 0$ ,  $b_l = NCD1 - NCD2$

*f<sub>l</sub>*:  $1 + \frac{l}{b_l}$

*AI*: Accrued interest per €1 nominal of the Bond calculated using the formula:  $c * (f_l - f_e)$

### 3.3 CurveGlobal® Three month SONIA Futures EDSP Calculation

The EDSP shall be calculated by reference to the Sterling Overnight Index Average rate as calculated and published by the Bank of England in respect of each London Banking Day (on a T+1 basis) during the Accrual Period.

$$\text{EDSP} = 100 - R$$

Where  $R$  is calculated as:

(a) EDSP Rate

$$R = \left\{ \frac{365}{d} \left[ \prod_{i=1}^X (F_i) - 1 \right] \right\} * 100$$

where

$d$ = the total number of calendar days in the Accrual Period;

$X$ = the total number of SONIA fixings that are determined in the Accrual Period, i.e. the number of London Banking Days in the relevant Accrual Period;

$i$ = is a series of whole numbers from 1 to  $X$ , each representing the relevant London Banking Days in chronological order from, and including, the first London Banking Day in the relevant Accrual Period;

$F_i$ = the overnight factor of return that applies to the  $i^{\text{th}}$  SONIA rate of the Accrual Period determined as

(b) Accrual Factor

$$F_i = \left( 1 + \frac{\text{SONIA}_i * n_i}{365} \right)$$

rounded to 8 decimal places, where

$\text{SONIA}_i$  = the SONIA reference rate published by the Bank of England which applies to any day  $i$  in the relevant Accrual Period and will be published on next London Banking Day;

$n_i$ = the number of calendar days that the  $\text{SONIA}_i$  rate applies to. It represents the number of days between one SONIA fixing and the next. On dates which are not London Banking Days, the SONIA rate that corresponds to the most recent prior London Banking Day will also apply over the following sequence of consecutive non-London Banking Days.  
E.g. Friday's rate (published on the Monday) will apply to Friday, Saturday and Sunday, in this calculation.

**Disclaimer:**

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