

€STR OIS Clearing and EONIA OIS Conversion CME OTC Clearing

August 2021

CME OTC Clearing – Product Scope

€STR OIS & €STR/EURIBOR Basis Swaps

€STR Rate Overview



- Publication of €STR by the ECB began on October 2, 2019. Under the reformed methodology, EONIA is calculated as €STR plus a fixed spread of 8.5 basis points.
- €STR reflects the wholesale euro unsecured overnight borrowing costs of banks located in the euro area.
- €STR is transaction based and is published daily at 8 a.m. CET for the previous business day.
- Euro Risk-Free Rates Working Group has recommended that publication of EONIA will be discontinued on January 3, 2022, and the marketplace must shift to reference €STR in OTC swaps.

EONIA to €STR Conversion

- Market participants are slowly moving towards €STR in anticipation of the EONIA discontinuation.
- It is important to transition products referencing EONIA to €STR before the end of 2021.
- In order to support the transition, CME and Clearing Members must support the clearing of €STR swaps prior to the mandatory conversion of EONIA to €STR OIS by CME on October 15, 2021.

€STR OIS & €STR-EURIBOR Basis Swaps

Product Scope

Product Attribute	€STR OIS	€STR-EURIBOR Basis Swap
Maximum Maturity	51 years	51 years
Floating Rate Index	EUR-EuroSTR-COMPOUND	EUR-EuroSTR-COMPOUND EUR-EURIBOR-Reuters
Floating Index Tenor	1D	1M, 3M, 6M Euribor
Price Alignment Rate	€STR	€STR
Settlement Currency & Convention	EUR (T+1)	EUR (T+1)
Variation, Coupons and Fees	EUR	EUR
Fixing Calendar	TARGET calendar (EUTA)	TARGET calendar (EUTA)
Fixing Offset	0D	0D(€STR), -2D(Euribor)
Day Count	ACT/360	ACT/360(€STR), 30/360(Euribor)
Payment Calendar	EUTA required, others optional	EUTA required, others optional
Payment Frequency	1M, 3M, 6M, 1Y, 1T	1M, 3M, 6M, 1Y, 1T
Payment Offset	1D	1D, 0D/1D(Euribor)
Variable Notional, Spreads, Stubs	Yes; supported	Yes; supported

EONIA and €STR Curve Building Methodologies

Valuation & Curve Construction

- EONIA cleared swaps currently leverage a **dual-curve** valuation methodology:
 - The forecasting curve is constructed using Fixed-Float OIS instruments for tenors specified in the table below.
 - The discounting curve is constructed using €STR-EONIA basis instruments with a fixed 8.5 bps spread on the €STR leg.
- EONIA curve quotes are sourced at 4:00 p.m. London time.
- €STR cleared swaps leverage a **single-curve** valuation methodology using the existing €STR curve, as shown below.

Instruments & Tenors

Curve Type	Curve Inputs
EONIA	OIS: 3M, 6M, 1Y, 18M, 2Y-5Y, 7Y, 10Y, 12Y, 15Y, 20Y, 25Y, 30Y, 40Y, 50Y
€STR	€STR/EONIA: 3M, 6M, 1Y, 18M, 2Y-5Y, 7Y, 10Y, 12Y, 15Y, 20Y, 25Y, 30Y, 40Y, 50Y

Index: EONIA, €STR EUR Fixing

Instruments used for curve construction reflect the most liquid instruments traded in the marketplace and are subject to change based on liquidity.

Conversion Process Plan

EONIA to €STR OIS Cleared Swaps

Single-Step Conversion of EONIA to €STR OIS



Ahead of the scheduled discontinuation of EONIA in January 2022, subject to regulatory review, CME will employ a single-step mandatory conversion with a cash compensation mechanism to convert EONIA OIS to €STR OIS. The non-EONIA leg of the swap and key economic terms will remain unchanged.

Scope: Cleared EUR EONIA overnight index swaps

Conversion Date: Close of Business on October 15, 2021

Conversion Process: CME will convert all outstanding EONIA OIS to €STR OIS where:

- a) Each EONIA OIS is terminated and replaced with a corresponding €STR OIS swap;
- b) No spread nor fixed rate adjustment is applied (€STR flat);
- c) A cash compensation is applied as an upfront fee to resultant €STR OIS

Cash Compensation: To neutralize the value transfer from the conversion process, CME will process cash compensation in the form of upfront fees on the newly established €STR OIS cleared swaps that are equal and opposite to the NPV change on each trade in all accounts.

- *EONIA swaps maturing the day of conversion will not be eligible for conversion*
- *EONIA being calculated as €STR plus a fixed spread of 8.5 basis points makes it unnecessary to perform any additional processing*

Single-Step Conversion of EONIA to €STR OIS

Conversion Processing Steps:

- 1) Terminate each cleared EONIA OIS and send termination messages to clearing firms.
- 2) For each original EONIA OIS, book a corresponding €STR OIS where:
 - a) Each €STR OIS will retain the key economic terms of the original EONIA swap.
 - b) No spread nor fixed rate adjustment is applied.
 - c) A T+1 settling Upfront Fee is added to the €STR OIS to move the cash compensation.
- 3) Send clearing confirmed messages for new €STR OIS to clearing firms.

Original EONIA OIS	
Currency	EUR
Notional	57400000
Fix Side	Payer
Cleared Date	9/15/2020
Trade Date	9/15/2020
Effective Date	9/15/2020
Maturity Date	9/15/2022
Fixed Rate	1.14409%
Floating Rate Index	EUR-EONIA-OIS Compound
Float Leg Payment Freq.	PA
Float Leg Day count	ACT/360
Float Leg Pay BusDay Adj Conv	MOD FOLLOWING
Float Leg Pay Adj Calendar	EUTA
Date Roll	15
Status	TERMINATED



New €STR OIS	
Currency	EUR
Notional	57400000
Fix Side	Payer
Cleared Date	10/15/2021
Trade Date	9/15/2020
Effective Date	9/15/2020
Maturity Date	9/15/2022
Fixed Rate	1.14409%
Floating Rate Index	EUR-EuroSTR-OIS Compound
Float Leg Payment Freq.	PA
Float Leg Day count	ACT/360
Float Leg Pay BusDay Adj Conv	MOD FOLLOWING
Float Leg Pay Adj Calendar	EUTA
Date Roll	15
Status	CLEARED

Note: Floating Rate Options (FROs) referenced throughout the conversion slides are the ISDA 2021 Definition names

Single-Step Conversion of EONIA to €STR OIS

Clearing Firm Messaging (Key fields)

For each EONIA swap, a termination message will be sent to clearing firms along with a clearing confirmed message for the resultant €STR swap.

EONIA Swap Termination: Key Elements

- Trade IDs

```
<partyTradeIdentifier>
  <partyReference href="clearing_service"/>
  <tradeId tradeIdScheme="cme_trade_id">13232817</tradeId>
  <tradeId tradeIdScheme="client_trade_id">57812791-2</tradeId>
  <tradeId tradeIdScheme="platform_trade_id">57812791</tradeId>
  <tradeId tradeIdScheme="platform_side_id">57812873</tradeId>
  <tradeId tradeIdScheme="block_trade_id">57812791</tradeId>
</partyTradeIdentifier>
```

- Index

```
<floatingRateCalculation>
  <floatingRateIndex>EUR-EONIA-OIS Compound</floatingRateIndex>
</floatingRateCalculation>
```

- Event

```
<cme:terminatingEvent>INDEX_CONVERSION</cme:terminatingEvent>
```

- Status

```
<cme:status>TERMINATED</cme:status>
```

- Linkage

```
<cme:history>
  <cme:replacementTradeId tradeIdScheme="cme_trade_id">13226473</cme:replacementTradeId>
  <cme:originalTradeId tradeIdScheme="cme_trade_id">13232817</cme:originalTradeId>
</cme:history>
```

€STR Swap Clearing Confirmed: Key Elements

- Trade IDs

```
<partyTradeIdentifier>
  <partyReference href="clearing_service"/>
  <tradeId tradeIdScheme="cme_trade_id">13226473</tradeId>
  <tradeId tradeIdScheme="client_trade_id">57812791-2</tradeId>
  <tradeId tradeIdScheme="platform_trade_id">57812791</tradeId>
  <tradeId tradeIdScheme="platform_side_id">57812873</tradeId>
  <tradeId tradeIdScheme="block_trade_id">57812791</tradeId>
</partyTradeIdentifier>
```

- Index

```
<floatingRateCalculation>
  <floatingRateIndex>EUR-EuroSTR-OIS Compound</floatingRateIndex>
</floatingRateCalculation>
```

- Event

```
<cme:originatingEvent>INDEX_CONVERSION</cme:originatingEvent>
```

- Status

```
<cme:status>CLEARED</cme:status>
```

- Linkage

```
<cme:history>
  <cme:originalTradeId tradeIdScheme="cme_trade_id">13232817</cme:originalTradeId>
</cme:history>
```

Single-Step Conversion of EONIA to €STR OIS

IRS Trade Register (Key fields)

- Multiple IDs may be used to link the original EONIA swap with the new €STR swap.
 - **Platform ID:** Platform assigned identifier for the bilateral trade
 - **Client ID:** Client assigned identifier for their side of the cleared trade
 - **CONVERTED_TRADE_ID (New):** CME Cleared Trade identifier for the original trade that was converted (**primary link**)
- A new “INDEX_CONVERSION” trade event will be reported on both swaps to denote this conversion.
- An upfront fee will be added to the resultant €STR swap.

	Position Account ID	Cleared Trade ID	Platform ID	Client ID	CONVERTED_TRADE_ID	PRODUCT_TYPE	LEG2_INDEX	LEG2_PAYMENT_DAYS_OFFSET	ORIGINATING_EVENT	TERMINATING_EVENT	Status	FEE_TYPE	FEE_AMOUNT
Original EONIA Swap	PA445	12345	KL654	TS551		OIS	EUR-EONIA-OIS Compound	1D		INDEX_CONVERSION	TERMINATED		
New €STR OIS	PA445	678910	KL654	TS551	12345	OIS	EUR-EuroSTR-OIS Compound	1D	INDEX_CONVERSION		CLEARED	UPFRONT_FEE	-5,000.00

Variation Margin & Cash Compensation

EONIA to €STR OIS Cleared Swaps

Variation Margin and Cash Compensation

Composition of Cash Compensation

The cash compensation amount is comprised of two key components:

- a) Current Accrual Period: The current EONIA coupon period, where some EONIA fixings may be known, will be adjusted to reference €STR fixings.
- b) Projected (Forward) Periods: The new €STR curve will be used to project future cash flows.

Computing Cash Compensation

Cash compensation will be computed using CME's closing curve marks on October 15th, leveraging the curve construction and inputs as shown on slide 5.

- a) **Step 1**: CME will compute the NPV of each EONIA OIS, prior to terminating the swap.
 - i. *Note: The present value of any fee due to bank the following business day will be removed*
- b) **Step 2**: CME will compute the NPV of each replacement €STR OIS that is created during the conversion process.
- c) **Step 3**: Cash compensation will be calculated as EONIA swap NPV minus €STR swap NPV.

Note: As part of cash compensation, there will be no spread nor fixed rate adjustment (€STR flat).

Variation Margin and Cash Compensation

Cash Flow Example (IRSTR View)

Value Date	Cleared Trade ID	Floating Rate Index	Status	NPV	NPV Adj.	Previous NPV Adj.	Variation	FEE_TYPE	FEE_AMOUNT	FEE_PAYMENT_DATE
10/15/2021	12345	EUR-EONIA-OIS Compound	TERMINATED	0	0	769,000.00	-769,000.00			
10/15/2021	67891	EUR-EuroSTR-OIS Compound	CLEARED	770,000.00	775,000.00	0	775,000.00	UPFRONT FEE	-5,000.00	10/18/2021

Cash Compensation	EONIA Swap Valuation (10/15)*	770,000.00	PnL Change	5,000.00	Compensation Amount	-5,000.00
-------------------	-------------------------------	------------	------------	----------	---------------------	-----------

Value Date	Cleared Trade ID	Floating Rate Index	Status	NPV	NPV Adj.	Previous NPV Adj.	Variation	FEE_TYPE	FEE_AMOUNT	FEE_PAYMENT_DATE
10/18/2021	67891	EUR-EuroSTR-OIS Compound	CLEARED	778,000	778,000.00	775,000.00	3,000.00			

Calculation Breakdown (10/15)

$EONIA\ Swap\ VM = NPV\ Adj. - Previous\ NPV\ Adj.$

$$= 0 - 769,000.00 = -769,000.00$$

$PnL\ Change = NPV\ Adj.\ (\text{€STR OIS}) - NPV\ Adj.\ (\text{EONIA OIS})$

$$= 775,000.00 - 770,000.00 = 5,000.00$$

$Compensation\ Amount = NPV\ Adj.\ (\text{EONIA OIS}) - NPV\ Adj.\ (\text{€STR OIS})$

$$= 770,000.00 - 775,000.00 = -5,000.00$$

$NPV\ Adj.\ (\text{€STR OIS}) = NPV - FEE_AMOUNT$

$$= 770,000.00 - (-5,000.00) = 775,000.00$$

- NPV and NPV Adj. reflect the same value unless a fee/coupon payment(s) is to be made the following business day (these cash flows would be removed from NPV Adj.)
- VM and IM computed for €STR OIS will be banked on Monday, 10/18

Variation Margin and Cash Compensation

Additional Considerations

- Any EONIA swap coupon due to bank **on** the Monday following Conversion Date (Oct 18th) will **not** be settled on the original trade. Instead, CME will calculate the ESTR-based coupon and move this amount on the new €STR swap.
 - Note that any difference between the original (EONIA) and new (€STR) coupons will be accounted for as part of the cash compensation.
- Any EONIA swap coupon due to bank **after** October 18th will be calculated and paid on the €STR swap.
- Any upfront fee on the EONIA swap due to bank **on** the business day following conversion will be settled on the original trade.
- Any upfront fee on the EONIA swap due to bank **after** the business day following conversion will be carried over to the €STR swap.

Indicative Analysis Reporting: Production

EONIA To €STR Cash Compensation Report

- Report provides NPV for each EONIA OIS, the revised NPV for each €STR OIS and the cash compensation at the trade level for each position account **in production only**.
- Published daily beginning on **Monday, September 20, 2021**, until Thursday, October 14, 2021.
- File name:
IRS_IDXCONV_FFF_YYYYMMDD_EOD.csv
- CSV report delivered to firm and client sFTP folders
 - All parties receiving Trade Registers today, who have EONIA OIS exposure, will receive this report.

Column Header	Description	Sample Value	Type
Value Date	Business Date	9/15/2021	Date
Position Account ID	Position Account	3TTNN7	VARCHAR(8)
Cleared Trade ID	CME Trade ID of EONIA Index	9355844	Integer
Platform ID	SEF/Platform ID	7897868G9H	VARCHAR(255)
Client ID	Client ID	1423523IS	VARCHAR(255)
REG_TRADE_ID	USI	CCCIRS9355844	VARCHAR(255)
Firm ID	3 digit clearing firm ID	998	VARCHAR(3)
ORIGIN	HOUS or CUST	CUST	VARCHAR(4)
PRODUCT_TYPE	type of swap	OIS	VARCHAR(5)
Currency	3 digits currency code	EUR	VARCHAR(3)
NPV_NEW_INDEX	NPV of €STR OIS	2,266.34	Float
NPV_PRIOR_INDEX	NPV of EONIA OIS	2,244.28	Float
NPV_ADJ_NEW_INDEX	ADJ NPV of €STR OIS	2,266.34	Float
NPV_ADJ_PRIOR_INDEX	ADJ NPV of EONIA OIS	2,244.28	Float
NPV_ADJ_DIFF	€STR ADJ NPV minus EONIA ADJ NPV	22.06	Float
OFFSET_ADJ_AMT	Cash compensation amount / EONIA ADJ NPV minus €STR ADJ NPV	-22.06	Float

Please Note:

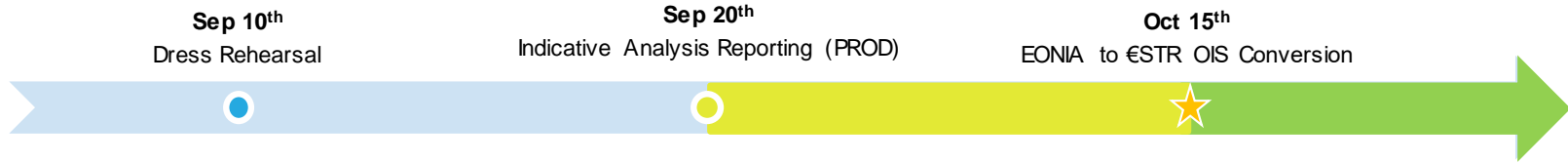
- Indicative analysis reporting will **not** be made available on the conversion date
- The **OFFSET_ADJ_AMT** may not always be equal and opposite to the **NPV_ADJ_DIFF** due to coupon(s) banking the following business day on the €STR swap

EONIA to €STR Conversion EOD Timeline: Estimated

Friday – Oct 15th, 2021

- **7:00 pm ET:** End-of-Day Close
- **7:10 pm ET:** Netting/Blending process begins
- **7:15 pm ET:** FpML Confirms published for Netting/Blending
- **7:20 – 7:30 pm ET:** Conversion process to terminate EONIA OIS and establish €STR OIS
 - *Compute cash compensation to neutralize the value transfer*
- **7:35 – 8:00 pm ET:** FpML Confirms published for terminated EONIA OIS and newly established €STR OIS
- **8:00 – 8:30 pm ET:** EOD IRS Trade Registers are published on sFTP

EONIA to €STR Conversion Testing and Readiness Timeline



Dress Rehearsal – September 10th

- CME will conduct a single dress rehearsal to simulate the conversion date processing (Oct 15th)
- All open EONIA trades in New Release will be converted to €STR OIS on this date
- CME will provide the ability to upload an **optional** EONIA test portfolio to NR position accounts prior to the dress rehearsal
- The NR IRSTR EOD file on Sept 10th will provide trade data for the terminated EONIA swaps and newly established €STR OIS
- Post the dress rehearsal, CME will not be accepting EONIA trades for clearing in the New Release environment

Indicative Analysis Reporting in Production – September 20th

- CME will publish an indicative analysis report for **production** portfolios from Sep 20th to Oct 14th
 - *File name: IRS_IDXCONV_FFF_YYYYMMDD_EOD.csv*
- This report will be published **daily** and reflect indicative NPVs for each EONIA OIS, the revised NPV for each €STR OIS and the cash compensation at the trade level for each position account

EONIA to €STR Conversion – October 15th

- CME will employ a single-step mandatory conversion with a cash compensation mechanism to convert EONIA OIS to €STR OIS
- Corresponding clearing firm messaging and EOD Trade Register reporting will provide the results of this conversion
- Post-conversion, CME will not be accepting EONIA trades for clearing



Disclaimer

Neither futures trading nor swaps trading are suitable for all investors, and each involves the risk of loss. Swaps trading should only be undertaken by investors who are Eligible Contract Participants (ECPs) within the meaning of Section 1a(18) of the Commodity Exchange Act. Futures and swaps each are leveraged investments and, because only a percentage of a contract's value is required to trade, it is possible to lose more than the amount of money deposited for either a futures or swaps position. Therefore, traders should only use funds that they can afford to lose without affecting their lifestyles and only a portion of those funds should be devoted to any one trade because traders cannot expect to profit on every trade.

CME Group, the Globe Logo, CME, Globex, E-Mini, CME Direct, CME DataMine and Chicago Mercantile Exchange are trademarks of Chicago Mercantile Exchange Inc. CBOT is a trademark of the Board of Trade of the City of Chicago, Inc. NYMEX is a trademark of New York Mercantile Exchange, Inc. COMEX is a trademark of Commodity Exchange, Inc. All other trademarks are the property of their respective owners.

The information within this communication has been compiled by CME Group for general purposes only. CME Group assumes no responsibility for any errors or omissions. Additionally, all examples in this communication are hypothetical situations, used for explanation purposes only, and should not be considered investment advice or the results of actual market experience. All matters pertaining to rules and specifications herein are made subject to and superseded by official CME, CBOT, NYMEX and COMEX rules. Current rules should be consulted in all cases concerning contract specifications.

Copyright © 2021 CME Group. All rights reserved.