

TO: Clearing Member Firms
Back Office Managers

DATE: March 12, 2021

FROM: CME Clearing

NOTICE #: 21-087

SUBJECT: **Modifications to Discounting and Price Alignment for Emerging Markets Interest Rate Swaps (“IRS”) and Over the Counter Foreign Exchange (“OTC FX”) Products to Transition to the Secured Overnight Financing Rate (“SOFR”) and Euro Short Term Rate (“€STR”)**

Background

In July 2020, Chicago Mercantile Exchange Inc. (“CME” or “CME Clearing”) completed the transition of CME cleared OTC Euro (“EUR”) denominated IRS products from EONIA¹ price alignment and discounting (“PA/Discounting”) to the Euro Short Term Rate (“€STR”). In October 2020, CME completed the transition of CME cleared U.S. Dollar (“USD”) IRS products from Effective Federal Funds Rate (“EFFR”) PA/Discounting to the Secured Overnight Financing Rate (“SOFR”).² In each case, the relevant transition was coordinated with wider industry initiatives.

CME clears a range of OTC FX and OTC IRS in emerging market currencies that have not yet transitioned to SOFR or €STR PA/Discounting. As a result, in order to support the ongoing derivative market transition from EONIA to €STR and the ongoing transition to SOFR in USD cash and derivative markets, effective March 26, 2021, and pending all relevant Commodity Futures Trading Commission (“CFTC”) regulatory review periods, CME will update the PA/Discounting protocol for CME cleared OTC FX and for remaining CME cleared IRS and Non-Deliverable IRS to SOFR or to €STR, as applicable (the “Transition”), to take effect at close of business on March 26, 2021 (the “Transition Date”).

Transition to SOFR PA/Discounting

In 2017 the Alternative Reference Rates Committee (“ARRC”), convened by the Federal Reserve Board and the Federal Reserve Bank of New York, selected SOFR to serve as a robust and transaction-based alternative reference rate to the USD London Interbank Offered Rate benchmark rate (“LIBOR”).³ SOFR is administered by the Federal Reserve Bank of New York and provides a broad measure of the cost of

¹ EONIA is the European Money Markets Institute (“EMMI”) Euro overnight index average.

² Price alignment is the adjustment used to reflect the overnight cost of funding collateral for a bilateral OTC swap contract to mitigate the basis risk between cleared and uncleared swaps. The discounting rate is used for the discount curve to calculate swap value.

³ The LIBOR rate is administered by ICE Benchmark Administration Limited, which is regulated and supervised by the UK Financial Conduct Authority (“FCA”) as administrator of the relevant benchmark. The LIBOR rate is designed to provide an average rate at which certain international banks can borrow funds for certain tenors in the wholesale unsecured funding market. On March 5, 2021, the FCA announced the dates that panel bank submissions for all LIBOR settings will cease, after which representative LIBOR rates will no longer be available, with 1-week and 2-month USD LIBOR settings to end immediately after December 31, 2021 and remaining USD LIBOR settings immediately after June 30, 2023. See: <https://www.fca.org.uk/news/press-releases/announcements-end-libor>.

borrowing USD cash overnight collateralized by Treasury securities, based on observable transactions in the active and liquid USD Treasury repo market.

The ARRC's Paced Transition Plan for the phasing-in of SOFR as the alternative reference rate to LIBOR anticipates that by Q2 2021 central counterparties should cease to accept for clearing new swap contracts utilizing the EFFR for calculating price alignment (the adjustment used to reflect the overnight cost of funding collateral for a bilateral swap contract to mitigate the basis risk between cleared and uncleared swaps) and for the applicable discounting rate (used for the discount curve to calculate swap value). The ARRC anticipates that updating the PA/Discounting environment for cleared swaps from EFFR to SOFR will foster additional liquidity across the entire SOFR curve and thereby promote the adoption of SOFR and the transition away from LIBOR in USD derivatives and other financial contracts. On October 16, 2020, as part of an industry wide transition for USD IRS, CME completed the successful transition of the PA/Discounting protocol for CME cleared USD interest rate swap products from EFFR to SOFR (the "USD IRS PA/Discounting Transition").⁴ Following the USD IRS PA/Discounting Transition, all CME cleared USD interest rate swap products have been subject to SOFR PA/Discounting.

CME continues to accept for clearing a number of other OTC interest rate swap products (including Mexican Peso IRS and Non-Deliverable IRS across a number of emerging market currencies in the Latin America and Asia-Pacific regions) and also a range of OTC FX products, which each utilize the EFFR for PA/Discounting⁵. As a result, in order to further support the market adoption of SOFR, and consistent with the wider industry initiative to support the relevant milestones of the ARRC Paced Transition Plan to help promote the further development of SOFR liquidity, CME will implement a transition process for these remaining CME cleared interest rate swap and OTC FX products that utilize EFFR PA/Discounting to SOFR PA/Discounting on the basis set out in this Clearing Advisory Notice.

Transition to €STR PA/Discounting

In September 2018 the European Central Bank ("ECB") convened a private sector working group on Euro risk free rates (the "ECB Working Group"),⁶ which determined that €STR should replace EONIA as the new EUR risk free rate for all cash and derivative market products and contracts, with EONIA due to be discontinued on January 3, 2022. €STR is calculated by the ECB and provides a broad measure of the cost of borrowing unsecured EUR cash on an overnight basis in wholesale markets based on a large number of banks contributing data and a significant transaction volume.⁷ The ECB Working Group has recommended that cleared derivatives contracts should transition from discounting methodology utilizing EONIA to €STR as early as possible.⁸ The ECB Working Group anticipates that updating the PA/Discounting environment for cleared swaps from EONIA to €STR will help promote liquidity in €STR cash and derivative contracts and prepare the market for discontinuation of EONIA in January 2022.

On July 24, 2020, as part of an industry-wide transition for EUR IRS, CME completed the transition of the PA/Discounting protocol for CME cleared EUR interest rate swap products from EONIA to €STR (the "EUR

⁴ See CME Clearing Advisory, October 16, 2020 confirming successful completion of the transition to SOFR PA/Discounting for CME cleared USD IRS: <https://www.cmegroup.com/content/dam/cmegroup/notices/clearing/2020/10/Chadv20-402.pdf>

⁵ CME did not transition Mexican Peso IRS and Non-Deliverable IRS alongside USD IRS in October 2020, based on feedback received from a diverse cross-section of market participants recommending a later transition for non-USD IRS.

⁶ The ECB Working Group was also convened by the Financial Services and Markets Authority ("FSMA"), the European Securities and Markets Authority ("ESMA") and the European Commission.

⁷ Further details on the administration of €STR are available on the ECB website at www.ecb.europa.eu.

⁸ See ECB Working Group Report "On the impact of the transition from EONIA to the €STR on cash and derivative products" (August 19, 2019): <https://www.ecb.europa.eu/press/pr/date/2019/html/ecb.pr190819~9d8e3c0ce6.en.html>. The report goes on to note that the switch to €STR PA/Discounting would mean that cleared derivatives will become subject to a new discounting regime and that "compensation schemes should be devised to counter adverse price effects on derivatives subject to the transition."

IRS PA/Discounting Transition"). Following the transition, all CME cleared EUR interest rate swap products have been subject to €STR PA/Discounting. However, CME continues to accept for clearing a small number of OTC FX products that utilize EONIA for PA/Discounting. As a result, in order to further support the transition to €STR ahead of January 2022, CME will implement a transition process for these remaining CME cleared OTC FX products that utilize EONIA PA/Discounting to €STR PA/Discounting on the basis set out in this Clearing Advisory Notice.

Summary of Transition Process

CME cleared IRS products and OTC FX products that currently utilize either EONIA or SOFR for PA/Discounting will transition to €STR or SOFR PA/Discounting as applicable, the Transition, to take effect on the Transition Date, the close of business on March 26, 2021.

As part of the "single day" approach to the Transition and to mitigate the economic effects of the change in PA/Discounting protocol, "legacy" contracts in affected products will be subject to a mandatory cash adjustment process on the date of the Transition. As part of that process, CME will implement an offsetting cash adjustment mechanism under which a cash amount equal and opposite to the change in net present value of each cleared trade affected by the change to SOFR or €STR discounting (as applicable) will be applied to the relevant position holder account to ensure that net cash flows for position holders impacted by the change to SOFR or €STR discounting (as applicable) are zero on the date of the Transition. As with the USD IRS PA/Discounting Transition and the EUR IRS PA/Discounting Transition, the cash adjustment will be settled as part of the usual settlement variation (variation margin) cycle, calculated on the following clearing day after the Transition Date (in this case, Monday March 29, 2021) and will be settled the following morning.

The Transition shall apply to all open positions in cleared swap contracts in affected products outstanding on the Transition Date. Following the Transition, all CME cleared transactions in affected products will be subject to SOFR or €STR discounting, as applicable, including existing cleared "legacy" swap contracts outstanding on the Transition Date and "new" contracts submitted for clearing after the Transition Date. Trades in affected products submitted for clearing after the Transition Date shall not be subject to the cash adjustment mechanism.

Further details on the Transition process are provided below.

CME has consulted with a diverse cross-section of market participants to obtain feedback on the design and implementation of operational processes for the Transition. A summary of CME's proposals for the Transition was provided to market participants and made publicly available on December 18, 2020 and further details were provided by CME to market participants in January 2021, followed by operational testing and support provided by CME to the date of implementation.⁹ Following the successful USD IRS PA/Discounting Transition and the EUR IRS PA/Discounting Transition in 2020, market participants are familiar with CME's approach and methodology for implementation of changes in PA/Discounting and the relevant operational processes have been tested in both test and production environments.

Based on feedback from market participants, the Transition includes a cash adjustment mechanism designed to mitigate valuation changes for market participants arising from the change in discounting environment from EONIA to €STR or from EFRR to SOFR (as applicable),¹⁰ further details of which are set

⁹ See: <https://www.cmegroup.com/trading/interest-rates/files/emerging-market-discounting-transition-proposal-dec-2020.pdf> for December 2020 proposal and <https://www.cmegroup.com/trading/interest-rates/files/emerging-market-discounting-and-price-alignment-transition-detailed-deck.pdf> for January 2021 operational detail deck.

¹⁰ Valuation changes will be determined by the discounting risk for the portfolio and the relative levels of the EONIA and €STR forward curves / the relative levels of the EFRR and SOFR forward curves (as applicable) on the Transition Date in each case.

out in this Advisory Notice. Unlike the October 2020 USD IRS PA/Discounting Transition, the Transition does not include a mechanism to account for or to compensate for changes to the original risk profile of position holders caused by the transition to €STR / SOFR PA/Discounting. In the case of EONIA discounted products, market participants have deemed such a mechanism unnecessary due to the fixed nature of the spread between €STR and EONIA. In the case of the products which utilize EFRR PA/Discounting, CME determined that the size of the discounting risk carried in the relevant contracts, together with the risk weighting towards the short end of the curve, is such that risk compensation is not appropriate for the Transition for these contracts.

This Advisory Notice sets out the binding rules and operational processes under which CME Clearing will implement the transition of the price alignment and discounting protocols from EONIA to €STR or from EFRR to SOFR (as applicable) with respect to open cleared trades in affected CME cleared products at the Transition Date, and for the calculation of price alignment and discounting in relation to such products following the Transition.

Terms used but not defined in this Advisory Notice shall have the meaning set out in the rules of CME (the “Rulebook”).

CME Cleared Contracts Subject to the Transition and this Advisory Notice

The Transition will apply to the following CME cleared products, each of which currently utilizes EONIA or EFRR for PA/Discounting as indicated below (the “Affected Contracts”):

IRS Products

IRS products in the following currencies that currently utilize EFRR or EFRR-based PA/Discounting:

- Interest Rate Swaps in the following currencies:
 - Mexican Peso (“MXN”) (Fixed / Float IRS only)
- Non-Deliverable Interest Rate Swaps (“NDIRS”)¹¹ in the following currencies:
 - Brazilian Real (“BRL”)
 - Chilean Peso (“CLP”)
 - Colombian Peso (“COP”)
 - South Korean Won (“KRW”)
 - Indian Rupee (“INR”)
 - Chinese Yuan (“CNY”)

OTC FX Products

- Non-Deliverable Forwards (“NDFs”) in the following currency pairs, utilizing USD as settlement currency and EFRR PA/Discounting:
 - USD BRL
 - USD CNY
 - USD KRW
 - USD Russian Ruble (“RUB”)
 - USD CLP

¹¹ Note that all payments in respect of Non-Deliverable Interest Rate Swaps are made in USD (including any settlement variation payment, price alignment amount, coupon payments, option and upfront payments).

- USD INR
 - USD Philippine Peso (“PHP”)
 - USD Indonesian Rupiah (“IDR”)
 - USD New Taiwan Dollar (“TWD”)
 - USD COP
 - USD Peruvian Soles (“PEN”)
- Cash Settled Forwards (“CSFs”) in the following currency pairs, utilizing USD as settlement currency and EFR PA/Discounting:
 - Australian Dollar (“AUD”) USD
 - EURUSD
 - British Pound (“GBP”) USD
 - New Zealand Dollar (“NZD”) USD
 - USD Czech Koruna (“CZK”)
 - USD Danish Krone (“DKK”)
 - USD Hong Kong Dollar (“HKD”)
 - USD Hungarian Forint (“HUF”)
 - USD Israeli New Shekel (“ILS”)
 - USDMXN
 - USD Norwegian Krone (“NOK”)
 - USD Poland zloty (“PLN”)
 - USD Swedish Krona (“SEK”)
 - USD Singapore Dollar (“SGD”)
 - USD Thai Baht (“THB”)
 - USD Turkish lira (“TRY”)
 - USD South African Rand (“ZAR”)
 - Cash Settled Forwards in the following currency pairs, utilizing EUR as settlement currency and EONIA PA/Discounting:
 - EURAUD
 - EUR Swiss Franc (“CHF”)
 - FX Options in the following currency pairs, utilizing USD as settlement currency and EFR PA/Discounting:
 - AUDUSD
 - EURUSD
 - GBPUSD

Any Affected Contract accepted for clearing by CME after the Transition will be subject to €STR or SOFR PA/Discounting (as applicable) from acceptance by the Clearing House and will not be subject to the cash adjustment process.

Terms and Operation of Transition Process

Affected Contracts subject to EONIA PA/Discounting:

1. At the close of business (“COB”) on the Transition Date, where an Affected Contract is subject to EONIA PA/Discounting CME Clearing will subject each open cleared trade in that Affected Contract to the following Transition process to update the EONIA PA/Discounting protocol of such contract to €STR PA/Discounting:

- (a) CME Clearing will calculate the net present value (“NPV”) utilizing EONIA (at closing curve levels on the Transition Date) for valuation and calculation of discounting and price alignment amount for each cleared trade in such Affected Contract. CME Clearing will then conduct an additional calculation to calculate the NPV utilizing €STR (at closing curve levels on the Transition Date) for valuation and calculation of discounting and price alignment amount for each cleared trade in such Affected Contract (the “€STR Transition Calculation”).
 - (b) CME Clearing will determine settlement variation for each cleared trade in such Affected Contract on the Transition Date utilizing EONIA (at closing curve levels on the Transition Date) for valuation and calculation of discounting and price alignment amount for the end of day clearing cycle on the Transition Date.
2. At the next end of day clearing cycle following the Transition Date, for each cleared trade in such Affected Contract, CME Clearing will:
 - (a) determine settlement variation utilizing €STR for valuation and calculation of discounting and price alignment amount;
 - (b) apply to each position in a cleared trade in such Affected Contract an offsetting cash adjustment that is equal and opposite to the change in such position’s NPV resulting from the change from EONIA to €STR discounting, as determined by CME Clearing during the €STR Transition Calculation (“€STR Cash Adjustment”); and
 - (c) settle outstanding exposures and payments from the end of day clearing cycle (including for the avoidance of doubt, settlement variation and the €STR Cash Adjustment) in accordance with CME Rule 814. The relevant €STR Cash Adjustment will offset the change in NPV for each position arising from the discounting change such that the net cash flow in respect of the discounting change will be zero for each cleared trade in such Affected Contract per account.
3. Following the Transition Date, CME Clearing will apply €STR PA/Discounting to cleared trades in such Affected Contracts. The €STR Cash Adjustment process will apply only to open cleared trades in relevant Affected Contracts at COB on the Transition Date. Any trade in such Affected Contract accepted for clearing by CME after the Transition Date will be subject to €STR PA/Discounting.

Affected Contracts subject to EFRR PA/Discounting:

4. At the COB on the Transition Date, where an Affected Contract is subject to EFRR PA/Discounting CME Clearing will subject each open cleared trade in that Affected Contract to the following Transition process to update the EFRR PA/Discounting protocol of such contract to SOFR PA/Discounting:
 - (a) CME Clearing will calculate the NPV utilizing EFRR (at closing curve levels on the Transition Date) for valuation and calculation of discounting and price alignment amount for each cleared trade in such Affected Contract. CME Clearing will then conduct an additional calculation to calculate the NPV utilizing SOFR (at closing curve levels on the Transition Date) for valuation and calculation of discounting and price alignment amount for each cleared trade in such Affected Contract (the “SOFR Transition Calculation”).
 - (b) CME Clearing will determine settlement variation for each cleared trade in such Affected Contract on the Transition Date utilizing EFRR (at closing curve levels on the Transition Date) for valuation and calculation of discounting and price alignment amount for the end of day clearing cycle on the Transition Date.

5. At the next end of day clearing cycle following the Transition Date, for each cleared trade in such Affected Contract, CME Clearing will:
 - (a) determine settlement variation utilizing SOFR for valuation and calculation of discounting and price alignment amount;
 - (b) apply to each position in a cleared trade in such Affected Contract an offsetting cash adjustment that is equal and opposite to the change in such position's NPV resulting from the change from EFFR to SOFR discounting, as determined by CME Clearing during the SOFR Transition Calculation ("SOFR Cash Adjustment"); and
 - (c) settle outstanding exposures and payments from the end of day clearing cycle (including for the avoidance of doubt, settlement variation and the SOFR Cash Adjustment) in accordance with CME Rule 814. The relevant SOFR Cash Adjustment will offset the change in NPV for each position arising from the discounting change such that the net cash flow in respect of the discounting change will be zero for each cleared trade in such Affected Contract per account.
6. Following the Transition Date, CME Clearing will apply SOFR PA/Discounting to cleared trades in such Affected Contracts. The SOFR Cash Adjustment process will apply only to open cleared trades in such Affected Contracts at COB on the Transition Date. Any trade in such Affected Contract accepted for clearing by CME after the Transition Date will be subject to SOFR PA/Discounting.

All Affected Contracts

7. Coupon payments on Affected Contracts are not affected by the Transition and will remain linked to the relevant original interest rate index.
8. The terms of this Advisory Notice and the Transition process are binding on Clearing Members and position holders in all Affected Contracts, effective March 26, 2021. To the extent that there is any conflict between the Rulebook and the terms of this Advisory Notice with respect to the Transition process, this Advisory Notice shall prevail.

The relevant SOFR Cash Adjustment / €STR Cash Adjustment process is a mandatory process. The Transition and the relevant Cash Adjustment will therefore apply to all positions in cleared trades in Affected Contracts on the Transition Date. Market participants should consider the terms and impact of the Transition as set out in this Advisory Notice and take appropriate action prior to the Transition Date. Position holders that do not wish to participate in the Transition must close out any positions in Affected Contracts prior to the Transition Date.

Operational Information

CME Clearing will update the relevant information on the applicable PA/Discounting rate applicable to Affected Contracts in each case:

- In the case of IRS products, in the:
 - end of day operational reports (PAA Report and Trade Register report) made available by the Clearing House only to IRS clearing members via an sFTP site;
 - CME OTC IRS Bookkeeping document, made available to IRS Clearing Members and their customers on request; and
 - IRS Discounting Transition Report made available by the Clearing House only to IRS Clearing Members via an sFTP site on the Transition Date, illustrating the revised NPV for trades in Affected Contracts under the new discounting methodology and the relevant cash adjustment at the trade level for each position account;

- In the case of OTC FX products, in the:
 - end of day operational reports (PAA Report and Trade Register report) made available by the Clearing House only to OTC FX clearing members via an sFTP site;
 - CME OTC FX Operational Handbook document, made available to OTC FX Clearing Members and their customers on request; and
 - OTC FX Discounting Transition Report made available by the Clearing House to Clearing Member and client FTP folders on the Transition Date, illustrating the revised mark-to-market for trades in Affected Contracts under the new discounting methodology and the cash adjustment at the trade level for each position account.

Details of the €STR / SOFR curves utilized for the purposes of discounting calculations for the Affected Contracts will also be made available by the Clearing House via an sFTP site.

Additional details regarding the Transition may be viewed in [CME Submission No. 21-125](#).

Inquiries regarding the aforementioned may be directed to:

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