

# 5th Meeting of the Working Subgroup on Derivative Instruments referenced to the ON TIE Funding rate of the GTTR August 21st 2023



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# Topics

**1 International Transition**

**2 Transition in Mexico**

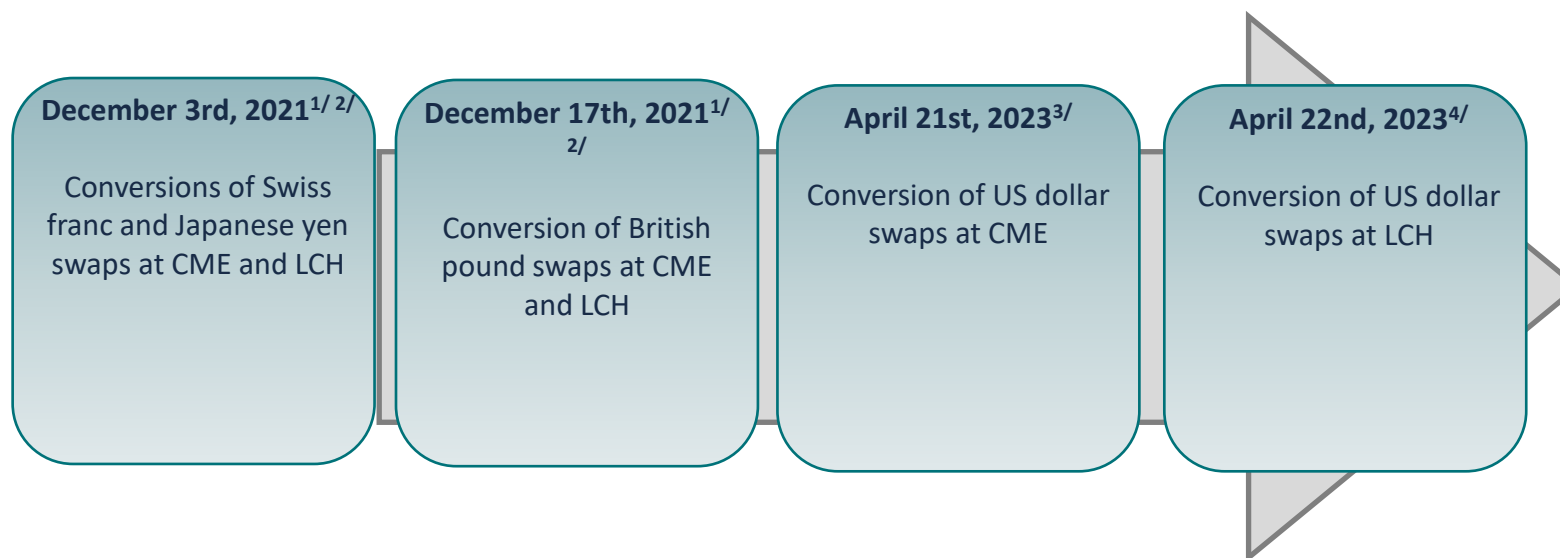
**3 Next Steps in the Transition**

# International Experience Regarding the Change of References in the Swaps Market



At the international level, in order to facilitate the transition away from LIBOR rates in the derivatives market, some clearing houses have proposed converting LIBOR-linked swaps contracts to OIS contracts linked to RFRs (Risk-Free Rates).

- For example, the Chicago Mercantile Exchange (CME) and the London Clearing House (LCH) have carried out conversions of existing IBOR-linked swaps exposures to RFR-based OIS products.
- This approach provides market participants the assurance that both legacy and new contracts can be fungible, promoting the development of RFRs.



1/ For more information, refer to: [CHF, EUR, GBP and JPY LIBOR – Floating Rate Conversion Notice | LCH Group](#)

2/ For more information, refer to: [CME IBOR Conversion Process for CHF, JPY, and GBP Cleared Swaps \(cmegroup.com\)](#)

3/ The conversion took place on April 21, 2023, with a secondary conversion on July 3. For more information, refer to: [CME Conversion for USD LIBOR Cleared Swaps \(cmegroup.com\)](#) y [Modification of Cleared Over-the-Counter USD LIBOR Interest Rate Swap Products and Limitation of Acceptance for Clearing - Effective April 21, 2023 - CME Group](#)

4/ The conversion took place on April 22, 2023, with a secondary conversion on May 20. For more information, refer to: [LCH USD LIBOR ConversionQuickGuide\\_A4\\_030123-04.pdf](#)

# Topics

**1** International Transition

**2** Transition in Mexico

**3** Next Steps in the Transition

# CME swap conversion process

# Proposal for CME Cleared MXN 28D TIE Swaps

## 28D TIE Rate Modification

In December 2022, pursuant to various recommendations issued by the Financial Stability Board and the International Organization of Securities Commissions, the Bank of Mexico issued a [press release](#) announcing that:

- The use of 28-day term TIE for new agreements would be prohibited from January 1, 2025, onwards
- Following January 1, 2025, financial institutions will only be allowed to use the TIE de Fondo (Funding TIE / F-TIE) as a benchmark rate
- The Bank of Mexico will modify the methodology for calculating TIE greater than 1 banking day so that current agreements that use such reference rates will not require to be adjusted via amending agreements

## Considerations

- CME has successfully guided the industry through transitions of GBP, JPY, CHF and USD LIBOR rates. CME successfully converted cleared IBOR swaps into market-standard cleared risk-free rate swaps, including a cash adjustment to compensate for any changes in valuation. Most recently, CME executed the conversion of USD LIBOR swaps to SOFR using the ISDA fallback pricing methodology during Q2 2023
- Based on feedback received thus far, there is a strong preference amongst the TIE trading community to avoid bifurcating liquidity to the best extent possible across multiple indices
- The transition of liquidity to F-TIE will be taking place over a compressed timeline, with the 28D TIE prohibited in new transactions from January 1, 2025, onwards
- Participants prefer to keep the cleared F-TIE product specifications closely aligned with the current 28D TIE

This conversion of MXN 28D TIE swaps would benefit the marketplace by:

- ✓ Creating a single transparent liquidity pool for trading F-TIE OIS swaps
- ✓ Providing participants certainty that “legacy” cleared and “new” contracts would be fungible with one another upon transitioning liquidity to F-TIE

# Proposal for CME Cleared MXN 28D TIIE Swaps

## Conversion Pricing Methodology

CME believes that it is in the market's best interest to leverage the **ISDA fallback pricing protocol** for 28 TIIE swaps pricing during conversion. For conversion pricing, **CME will use the fixed spread corresponding to ISDA fallback pricing protocol calculated by The Bank of Mexico** for the purpose of converting legacy cleared 28D TIIE swaps.

This approach would offer the following benefits:

- It is consistent with new F-TIIE trade calculations, making it possible to hedge legacy 28D TIIE swap positions with the new index
- Industry is familiar with the ISDA fallback pricing mechanism, which will help accelerate timelines for adoption and readiness

## CME Proposal

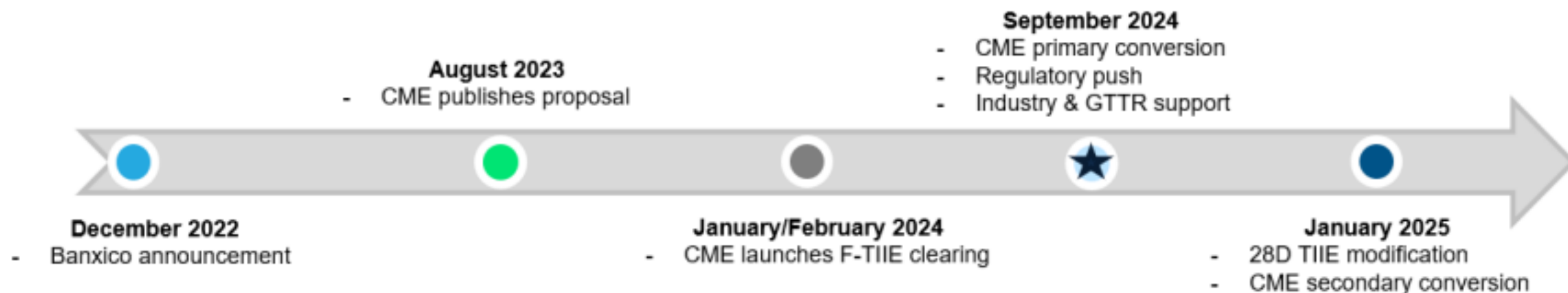
**CME intends to use a similar approach as utilized for the conversion of CME cleared USD LIBOR swaps.**

CME will execute the following steps in order to achieve the transition of 28D TIIE swaps to F-TIIE swaps:

- CME's aim is to launch F-TIIE swap clearing by the end of 2023 in the new release (testing) environment, and in production by January/February 2024
- CME would run a mandatory conversion on September 6, 2024, converting all legacy 28D TIIE swaps that contain fixings beyond the January 1, 2025, modification date
- Following the September 2024 primary conversion event, CME would continue to clear 28D TIIE swaps through the end of 2024
- On the first good business day of 2025, January 2nd, CME would run a secondary conversion to convert any outstanding 28D TIIE swaps, at which point CME would no longer support the clearing of new 28D TIIE swaps

# Proposal for CME Cleared MXN 28D TIIE Swaps

## Timeline





# Proposal for CME Cleared MXN 28D TIIE Swaps

## Background on Conversion

**Scope:** All CME cleared MXN 28D TIIE swaps with fixings beyond January 1, 2025

**Target Primary Conversion Timing:** September 6, 2024

**Conversion Process:** CME plans to convert all CME cleared MXN 28D TIIE swap products to short-dated 28D TIIE swaps and F-TIIE replacement overnight index swaps (OIS) where:

- ✓ Each 28D TIIE swap is converted into corresponding **short-dated 28D TIIE and F-TIIE replacement swaps**;
- ✓ Key economics will be copied over to both the short-dated 28D TIIE and F-TIIE replacement swaps;
- ✓ Fixed spread adjustment (calculated by The Bank of Mexico for conversion) is applied to the floating leg of the F-TIIE replacement swap;
- ✓ A cash compensation is applied as an upfront fee to the F-TIIE replacement swap;
- ✓ CME will maintain the 28D TIIE coupons which resets before Jan 1, 2025, through the conversion process, restating these accrual periods as short-dated 28D TIIE replacement swaps

**Pricing MXN 28D TIIE Swaps on Conversion Date:** Price the MXN 28D TIIE swaps using the conversion pricing methodology for 28D TIIE (consistent with ISDA fallback pricing protocol used for USD LIBOR swaps)

**Process for Determining Cash Compensation:**

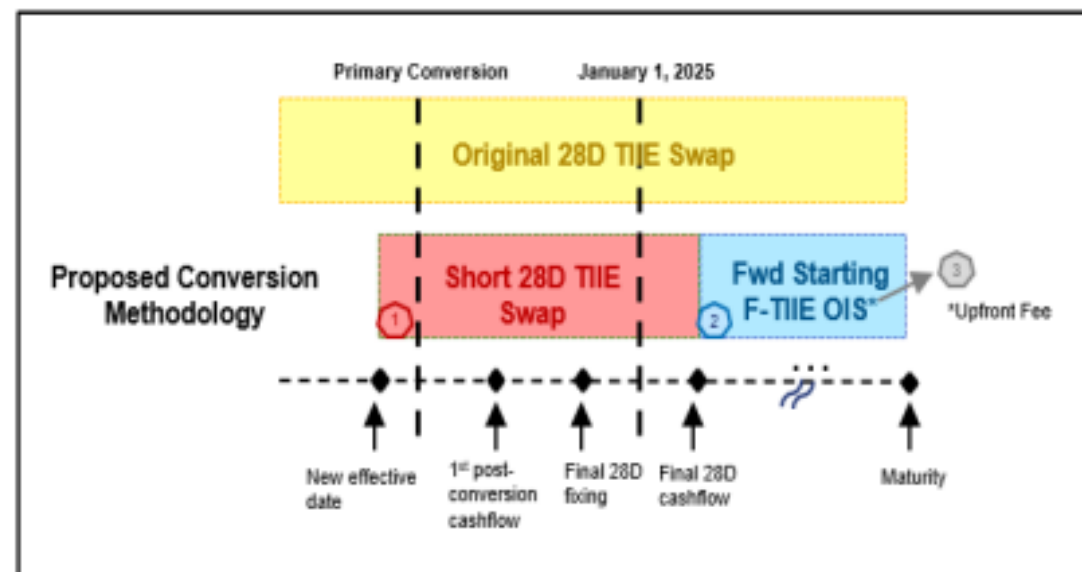
$$\text{Cash Compensation} = \text{Adj NPV}^* \text{ of legacy 28D TIIE Swap} - \text{Adj NPV}^* \text{ of all Replacement Swaps}$$

\* Adjusted NPV = NPV of Swap – Present Value of any fees or coupons due to bank the following business day

# Proposal for CME Cleared MXN 28D TIE Swaps

CME proposes the following conversion methodology, whereby any legacy cleared 28D TIE swaps that have fixings beyond January 2025 would be terminated and replaced with the following:

- 1) A short-dated 28D TIE replacement swap that is designed to capture any 28D TIE fixings scheduled to occur prior to the January 2025 modification (legacy swap economics would carry over)
- 2) A forward starting F-TIE replacement overnight index swap (OIS) that would maintain the legacy swap's fixed rate, replace the 28D floating rate with daily compounding F-TIE plus the fallback spread, and would apply a 2D payment offset to both the fixed and floating legs. This swap would become effective once the short-dated 28D TIE replacement swap expires, and its maturity would match the original legacy swap
- 3) A cash adjustment in the form of an upfront fee would be included on the forward starting F-TIE replacement OIS to account for any NPV differences between the legacy 28D TIE swap (valued under methodology consistent with the ISDA fallback pricing protocol used for USD LIBOR swaps) and the corresponding replacement swaps booked by CME



# MexDer swap conversion process

# MexDer swaps conversion proposal

## Characteristics of the ON TIE Funding rate Swap

- The exchange of money flows from the comparison between:
  - 28-day fixed rate at which operations in the market are carried out; and the
  - 28-day compound of the ON TIE Funding rate, published by Banco de Mexico.

Contract size: \$100,000  
mexican pesos

Available nodes: 2  
coupons up to 390  
coupons

Ticker: 2F1 up to 390F1

Quotation unit: Fixed  
rate with up to 4  
decimals

Bid: One hundredth of  
a basis point (0.0001)

Settlement: cash

Trading hours: 7:30  
a.m. to 3:00 p.m.

Effective date: Two Business  
Days after the celebration  
date of the operation (t+2)

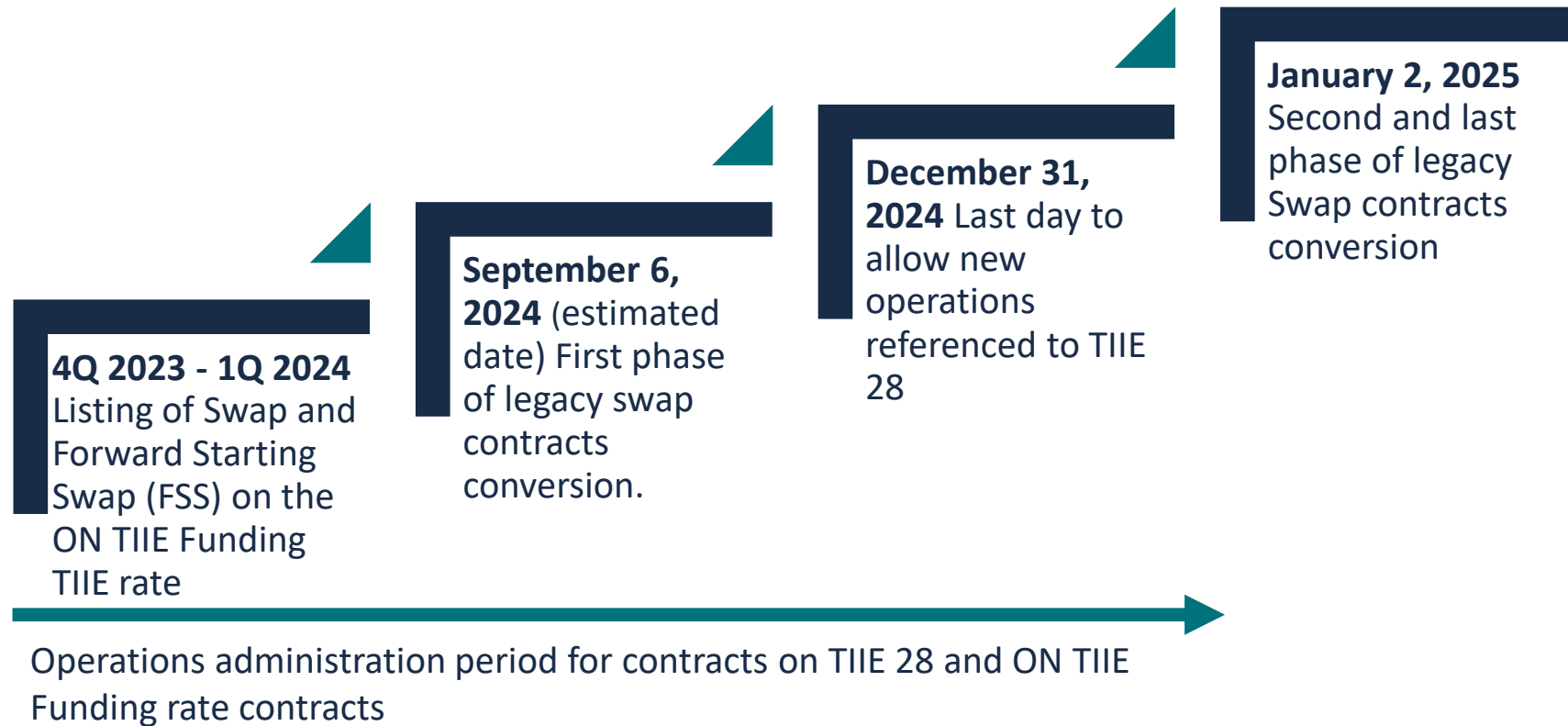
Variable rate for each coupon: The one resulting from the  
compounding of the ON TIE Funding rates published by Banxico for  
the 28 days of the period comprising the Periodic Settlement

## Comparison of TIE 28 Swap vs. ON TIE Funding rate Swap

Swap TIE28 (NX1)		IRS and FSS TIEF1D (NF1)
Underlying: TIE28	✗	Underlying: Daily compound interest rate of 28 days
Effective date 1 business day after the date of Concertation	✗	Effective date 2 business days after the date of Concertation (or k days for the FSS)
Periodic settlement in t	✗	Periodic settlement in t+2
Variable rate of the current coupon fixed 1 day before the effective date	✗	Current variable coupon rate built with TIEF1D daily observations
NA	✗	Composition starts on current coupon's start date
NA	✗	Rate composition on non-business days $(1+i(n/360))$
Coupon size can increase due to non-business days, and decrease the following	✓	Coupon size can increase due to non-business days, and decrease the following
Future variable coupons, built with forward rates	✓	Future variable coupons, built with forward rates

# Conversion Strategy

- Relevant transition dates



## Replacement of Swaps on TIIE 28 traded before January 2025 by:

- **1 Short-Term Swap on TIIE 28**

Includes the original swap coupons that set rate before January 1, 2025

- **1 Forward Starting Swap on ON TIIE Funding rate + Spread\***

It will include the remaining coupons of the original Swap not included in the short-term swap that sets rate before January 1, 2025

- **Cash flow**

Due to the differential in the NPV of the original Swap vs. the conversion strategy

**Original TIIE 28 Swap**

**Short-Term TIIE 28 Swap**

**Until Dec 31, 2024**

- Last rate to set coupon of the short-term swap

**VPN + Cash flow**

**Before 31 Jan, 2025**

- The last coupon of the short-term Swap expires
- Effective date of the FSS on ON TIIE Funding rate

**FSS on ON TIIE Funding rate**

**Jan 2nd 2025**

- Conversion date

### Considerations:

There will be no conversion for Swaps whose last coupon sets a rate before January 1, 2025.

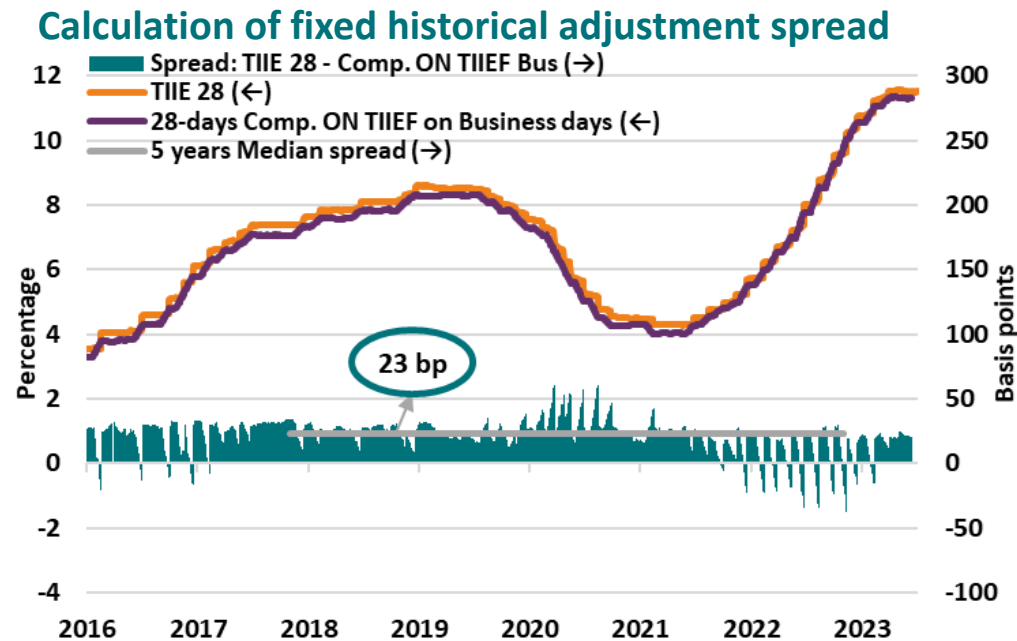
\*Estimated spread between TIIE 28 and the ON TIIE Funding rate, determined by BdM and will be the same for all swaps.

## Adjustment spread for the conversion process.

As mentioned earlier, an adjustment spread based on the ISDA Fallback methodology is necessary to carry out the valuation of contracts on the conversion day.

The **adjustment spread** is defined as the **five years historical median** (November 1st, 2017 – October 31st, 2022) of **daily differences between the 28-day TIE and the 28-day compounded ON TIE Funding rate in arrears with capitalization only on business days** (refer to Annex 1 for more details).<sup>1/</sup>

Banco de México has performed this calculation, resulting in an **adjustment spread of 23 basis points** (bps). This spread can be utilized by clearing houses to conduct the conversion process.



Source: Banco de México.

<sup>1/</sup> The time window is the same as that used to calculate the spread differential in the new methodology of the term TIE rates.



# Topics

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**2** Transition in Mexico

**3** Next Steps in the Transition

## Transition progress: discussion topics

- The conversion of legacy contracts to OIS contracts linked to the ON TIIE Funding rate is fundamental to facilitate the transition process and make it smoother and more robust. Therefore, if any questions regarding the conversion process arise, it is important to contact the clearing houses or Banco de México in order to solve them.
- On another topic, do you think that a futures contract that starts on monetary policy decision dates could help develop the futures market linked to the ON TIIE Funding rate?



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## Annex 1: 28-day compounded ON TIE Funding rate *in arrears*

- For a given publication date, the 28-day compounded ON TIE Funding rate *in arrears* with capitalization only on business days incorporates all published values of the ON TIE Funding rate during the given publication day and the following 27 calendar days.
- The formula to calculate the 28-day compounded ON TIE Funding rate *in arrears* with capitalization only on business days is as follows:

$$28 - \text{day compounded ON TIE Funding rate} = \left[ \prod_{i=1}^{d_h} \left( 1 + \frac{TIEF_i \times d_i}{36000} \right) - 1 \right] \times \frac{36000}{28},$$

Where:

$TIEF_i$  = ON TIE Funding rate published on day  $i$  expressed in percentage points,

$d_h$  = number of business days within the interest calculation period,

$d_i$  = number of calendar days for which the ON TIE Funding rate published on day  $i$  is applicable.

- The number of calendar days for which the last considered ON TIE Funding rate is applicable can be adjusted to satisfy that  $\sum_{i=1}^{d_h} d_i = 28$ .
- In the end, the adjustment spread is defined as the five years historical median (November 1st, 2017 – October 31st, 2022) of the daily differences between the 28-day TIE and the 28-day compounded ON TIE Funding rate *in arrears*.

# Appendix

# Conversion Pricing Approach for CME Cleared MXN 28D TIE Swaps

## ISDA Fallback Pricing Protocol: *Computing all-in conversion fallback Rate*

*This mechanism will be used for computing the projected 28D TIE Forward Rate on conversion date*

The conversion fallback reference rate  $FF$ , with respect to a 28D TIE tenor  $f$  and Record/Fixing Date  $t$  is computed as:

$$FF_{f,t} = ARR_{f,t} + SA_{f,t}$$

where  $ARR_{f,t}$  is the Adjusted Risk-Free Rate ( $F$ -TIE),  $SA_{f,t}$  is the spread fixed (for conversion) by Bank of Mexico for 28D TIE tenor

$$ARR_{f,t} = \frac{DayCount_I}{DayCount_{RR}} \times \frac{1}{\delta_{S_{f,t}, E_{f,t}}} \times \left[ \left( \prod_{u \in AP_{f,t}} (1 + RFR_u \times \delta_{u,u+1}) \right) - 1 \right]$$

where:

$DayCount_I$  is day-count convention for 28D TIE index

$DayCount_{RR}$  is day-count convention for  $F$ -TIE rate index

$S_{f,t}$  is the accrual start date for 28D TIE tenor

$E_{f,t}$  is the accrual end date for 28D TIE tenor

$\delta_{A,B}$  is the day count fraction for the  $F$ -TIE Rate

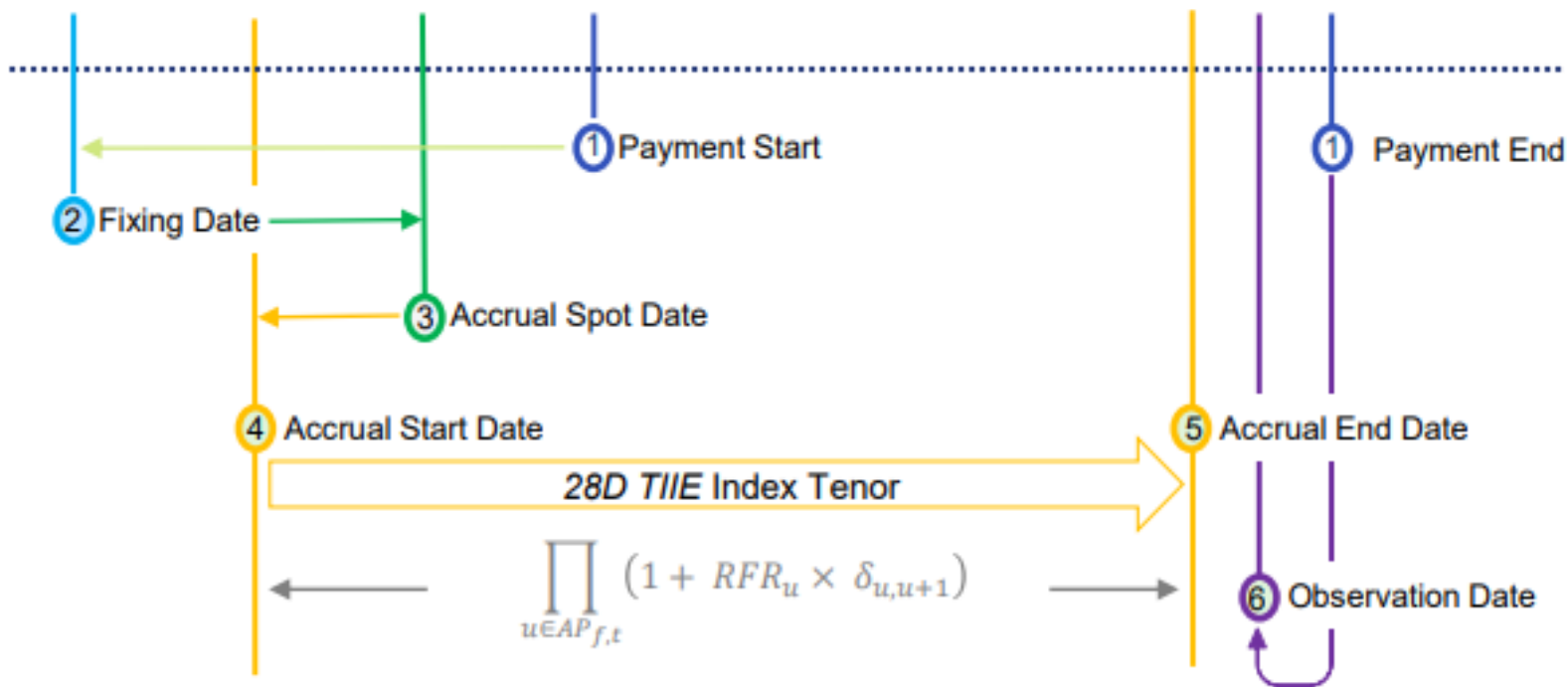
$AP_{f,t}$  is the Accrue Period for  $F$ -TIE compounding;

$u$  is the business day within Accrue Period defined by  $F$ -TIE Rate holiday calendar

$RFR_u$  is the daily  $F$ -TIE rate

# Fallback Pricing Approach for CME Cleared MXN 28D TIE Swaps

## ISDA Fallback Pricing Protocol: *Determining Accrual period for RFR compounding*



Details of the Fallback Rate adjustment: [https://assets.bbhub.io/professional/sites/10/IBOR-Fallback-Rate-Adjustments-Rule-Book\\_V4.1\\_Jun2023.pdf](https://assets.bbhub.io/professional/sites/10/IBOR-Fallback-Rate-Adjustments-Rule-Book_V4.1_Jun2023.pdf)

- 1 Compute the Payment Start Date and Payment End Date based on trade attributes
- 2 Compute 28D TIE Fixing date from Payment Start Date using fixing offset, calendar and business convention from trade attributes
- 3 Compute Accrual Spot Date as Spot Lag number of business days from Fixing Date using calendar and Following convention
- 4 Compute Accrual Start Date as 2 business days before Accrual Spot Date on RFR calendar using Preceding convention
- 5 Compute Accrual End Date by adding 28D TIE Index tenor from Accrual Start Date
- 6 Compute Observation Date as 2 business days before Payment Date on trade payment calendar using Preceding convention. Ensure the Accrual End date is on or before Observation Date. If not, then adjust the Fixing Date backward until the condition is satisfied

# Request for Feedback and Contact Information

Please contact us at [ClearedSwapConversion@cmegroup.com](mailto:ClearedSwapConversion@cmegroup.com) by **September 15, 2023**, if you would like to raise any questions or provide feedback on the following key considerations:

1. Is your firm supportive of the approach outlined in this proposal?
2. Is September 6, 2024, a reasonable date to run this coordinated conversion?
3. Is your firm comfortable with CME utilizing a fallback methodology similar to the ISDA fallback methodology used for the recent USD LIBOR conversions and a Bank of Mexico-published fallback spread to perform the conversion?
4. Are there any additional items your firm would like to comment on or request further clarity on?



## Disclaimer

The contents of this document are for informational purposes only and provide an overview of CME's proposal to facilitate the transition from 28D TIIE to TIIE de Fondo (F-TIIE) in the cleared MXN interest rate swap market. The proposal is subject to change at any time without prior notice. Any implementation of a final proposal based on the points discussed is subject to regulatory review and to any necessary internal and external approvals.