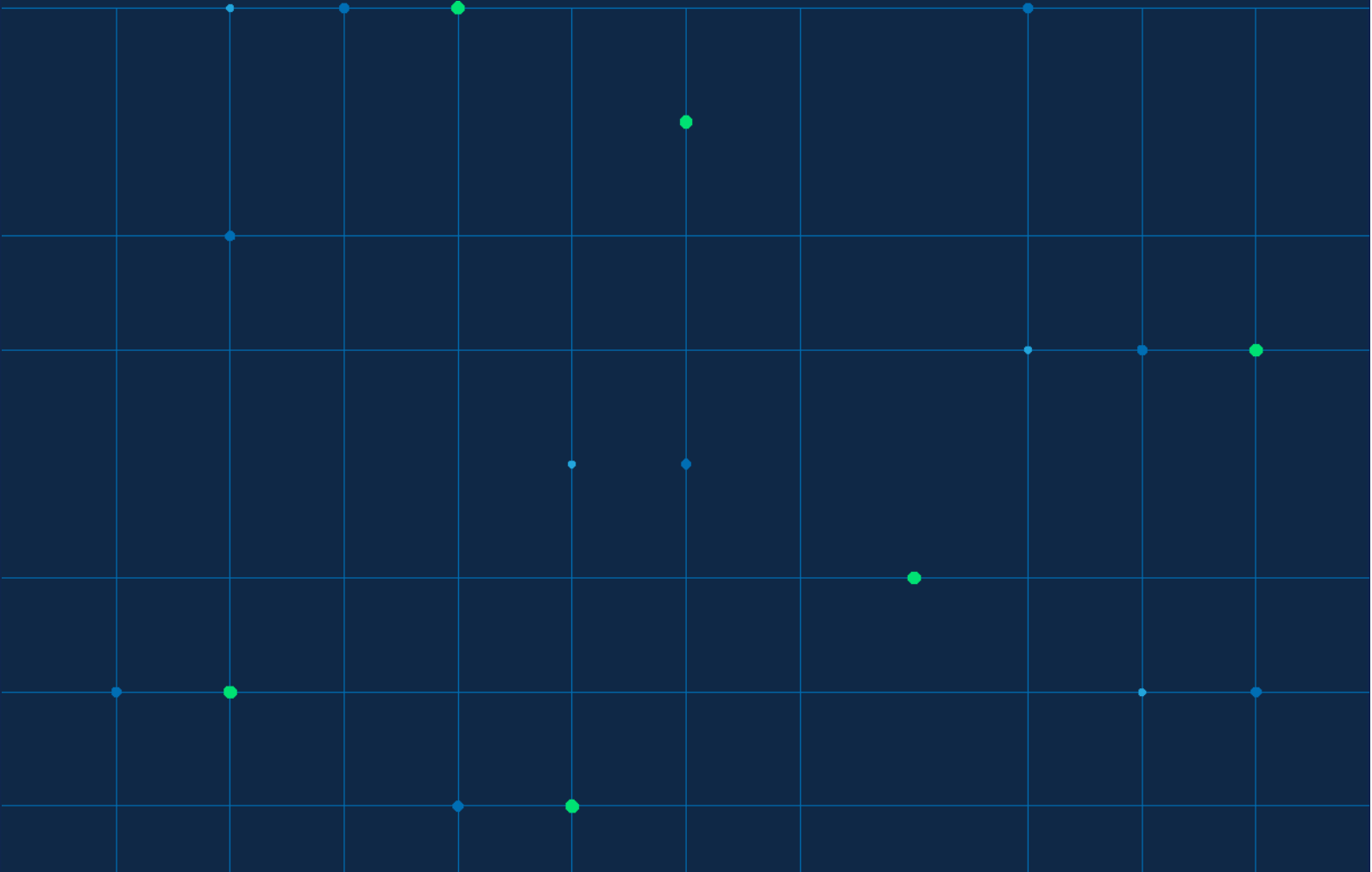


# CME EUR/USD Cross Currency Basis Index (XEURBI) Methodology

CME Group Benchmark Administration Limited

Version 1.0

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## Version Control

VERSION	KEY CHANGES	APPROVAL DATE
1.0	<ul style="list-style-type: none"><li>Initial version</li></ul>	July 29th 2024

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## 1. Introduction

### 1.1. CME Group and CME Group Benchmark Administration Limited

As a leading and diverse derivatives market operator, CME Group is the parent of four U.S.-based designated contract markets (DCMs): Chicago Mercantile Exchange Inc. (CME), Board of Trade of the City of Chicago, Inc. (CBOT), New York Mercantile Exchange, Inc. (NYMEX), and the Commodity Exchange, Inc. (COMEX) (collectively, the “CME Group Exchanges”). These exchanges offer a wide range of products available across all major asset classes, including futures and options based on interest rates, equity indexes, foreign exchange, energy, metals, and agricultural commodities.

CME Group Benchmark Administration Limited (CBA) capitalises on CME Group’s wealth of electronic transaction-based data in the calculation of its indices and benchmarks. CBA is authorised and regulated by the UK Financial Conduct Authority (FCA), for the administration of the CME EUR/USD Cross Currency Basis Index. The CME EUR/USD Cross Currency Basis Index is a benchmark, designed on the basis of industry best practices and the IOSCO Principles for Financial Benchmarks.

The CME EUR/USD Cross Currency Basis Index (XEURBI) is available to licence for use as a benchmark under the UK Benchmark Regulation (BMR)<sup>1</sup>.

CBA is the Benchmark Administrator of the CME EUR/USD Cross Currency Basis Index, with Chicago Mercantile Exchange Inc. (CME Inc.) providing calculation agent and distribution services.

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<sup>1</sup> <https://www.fca.org.uk/markets/benchmarks/regulation>

## 2. CME EUR/USD Cross Currency Basis Index

### 2.1. Introduction

The CME EUR/USD Cross Currency Basis Index (XEURBI) represents the basis point deviation from the [covered interest parity](#) implied forward FX price. This is established by calculating the difference between the next ESTR quarterly IMM futures interest rate and the implied ESTR interest rate from the next Euro FX and SOFR quarterly IMM futures.

### 2.2. What is Cross-Currency Basis?

The cross-currency basis is defined as the difference in value between i) the exchange price of a FX forward contract and ii) the theoretical price of the same FX forward contract according to **covered interest parity (CIP)**.

The covered interest parity specifies how spot and forward foreign exchange rates differ by the ratio of the nominal interest rates in the two currencies.

The classic formulation for the calculation of forward foreign exchange is the following:

$$F = S \cdot \frac{1+r_d}{1+r_f}$$

Where  $r_d$  and  $r_f$  are the domestic and foreign interest rates, S the Foreign Exchange Spot price and F the Foreign Exchange forward price.

Cross-currency basis is typically expressed in terms of basis points on the interest rate of the non-dollar currency. The CME EUR/USD Cross Currency Basis Index conforms to this norm. For example, if cross currency basis in a specified period for EUR/USD is quoted at -22bp, the forward FX swap points, known as pips, are equal to the pips implied by the benchmark USD interest rate and the benchmark EUR interest rate less 22bp for that specified period.

### 3. Input Data

#### 3.1. Futures Contract Specifications

The CME EUR/USD Cross Currency Basis Index Methodology uses the 4pm London Markers of [three-month ESTR Futures \(ESTR\)](#), [three-month SOFR Futures \(SR3\)](#) and [EUR/USD FX Futures \(Euro FX\)](#) contracts, traded on the CME Inc. Designated Contract Market (DCM), to calculate the Index.

#### 3.2. Futures Contract Selection

If the pricing date is more than 2 business days away from the next IMM date:

- Use the first and second quarterly Euro FX Futures contracts.
- Use the second quarterly SR3 and ESTR Futures contracts.

If the pricing date is less (or equal) than 2 business days away from the next IMM date:

- Use the second and third quarterly Euro FX Futures contracts.
- Use the third quarterly SR3 and ESTR Futures contract.

#### 3.3. Use of Expert Judgement

No discretion or expert judgement is applied in the determination of the CME EUR/USD Cross Currency Basis Index; input data is used as described below in [Calculation of the CME EUR/USD Cross Currency Basis Index](#).

## 4. Calculation of the CME EUR/USD Cross Currency Basis Index

### 4.1. Calculation Methodology

#### First step of calculation

- Calculate the SOFR and ESTR interest rates ( $r_{SOFR}$  and  $r_{ESTR}$ ) implied by the futures contracts.
- Calculate the difference between the 2 FX Futures contracts ( $\Delta_{FXFutures}$ ).
- Calculate the number of days between the two IMM Dates (NbDays).

#### Final step of calculation

- Calculate the implied ESTR rate.

$$ESTR_{Implied} = \frac{(1 + r_{SOFR} \frac{NbDays}{360})}{(FXFutures1 + \Delta_{FXFutures})} - 1$$

- Calculate the basis.

$$XCCY_{Basis} = ESTR_{Implied} - r_{ESTR}$$

### 4.2. Unavailability of Input Data

If the 4pm London Markers for the ESTR, SOFR or Euro FX Futures markets are unavailable for use in the calculation, the Administrator will re-publish the prior day's Index level.

In the event that the previous day CME EUR/USD Cross Currency Basis Index is republished for more than 3 (three) consecutive Business Days, the Administrator must promptly convene the Oversight Committee to assess available remedial actions.

## 5. Publication and Error Policy

### 5.1. Benchmark Publication

The CME EUR/USD Cross Currency Basis Index is calculated and published each Business Day by 5pm London time.

The CME EUR/USD Cross Currency Basis Index is calculated and published in basis points to two (2) decimal places.

In addition, CBA may, with notification to the market, choose not to publish the CME EUR/USD Cross Currency Basis Index on any given Business Day, in accordance with the [CME Globex Trading Schedule](#).

The CME EUR/USD Cross Currency Basis Index is published on the CME Group website and on licensed data vendor platforms.

### 5.2. Error Policy

If the Administrator identifies an incorrect publication prior to the publication of the next day's rate, the CME EUR/USD Cross Currency Basis Index will be republished if the error is greater than 0.1 basis points. In the event that there is an error in the publication that requires a re-publication of the rate, users will be informed via the CME Globex system utilising the [GCC System Alerts](#).

### 5.3. Publication Alerts

In the event of disruptions to the standard CME EUR/USD Cross Currency Basis Index's publication process, CBA, where deemed necessary, will release publication alerts with respect to issues impacting the availability of the index. Publication alerts will be made available via the CME Globex system utilising the [GCC System Alerts](#).

### 5.4. Consultations and Notices

CBA will inform the users and stakeholders of any announcements relating to republication, restatements or consultations via the [CBA Notice Page](#).

In addition, CBA may, at its discretion, release information notices with respect to issues impacting the availability of the CME EUR/USD Cross Currency Basis Index, via the [CBA Notice Page](#).



## 6. Governance

The Administrator operates under a comprehensive Risk and Control Framework, providing clear policies on Governance, Oversight, Benchmark Design and Calculation, Outsourcing, Operations, Reporting of Infringements and Business Continuity.

CBA has in place a "Three Lines of Defence" model, enabling close cross-monitoring of the governance process - this being business, compliance and audit who all have a key role in ensuring that CBA meets its regulatory requirements.

### 6.1. Oversight Committee

An Oversight Committee is appointed by the Administrator to review the integrity of the benchmark, in accordance with the CBA Terms of Reference for Oversight Committees.

The Oversight Committee will provide independent oversight of, and challenge to the Administrator on all aspects of the Benchmark determination process. The Oversight Committee will escalate to the CBA Board if required.

### 6.2. Review of the Methodology

The Administrator constantly monitors the Benchmark Methodology and its consistency with the stated objectives. The Benchmark Methodology is reviewed annually by the Administrator and the Oversight Committee.

The Oversight Committee approves proposed changes to the Calculation Methodology including, but not limited to, the structure of the Benchmark, input data used and all aspects of the Calculation Methodology.

The Oversight Committee may direct the Administrator to consult on any changes to the methodology with stakeholders and the wider market.

### 6.3. Consultation Process

The Administrator will engage relevant stakeholders and end users on material changes to the Benchmark Methodology, if required by regulation or where the Oversight Committee requests such consultation.

Changes to the Methodology are deemed material on the basis of an assessment conducted by the Administrator and submitted to the Oversight Committee for advice and feedback.

The Administrator will publish notice of the consultation on its website, inviting feedback from stakeholders and the wider market. Notice of a consultation will be posted at least 1 (one) month prior to the deadline for responses. The notice will include the details of the proposed material change, the timeline and the rationale for the change.

Findings of the consultation process and proposed changes to the Benchmark Methodology, recommended as a result of the consultation, will be presented by the Administrator to the Oversight Committee for its consideration.

Feedback to a consultation is considered confidential, however the Administrator will publish an anonymized summary with its conclusions, as soon as is practical, but before implementation of any changes.

## 6.4. Cessation

The Administrator constantly monitors the representativeness of the Benchmark. If the Benchmark is deemed to be unrepresentative of the underlying economic reality due to paucity of input data or systemic changes in the related markets, the Administrator will engage the Oversight Committee at the earliest opportunity. These cessation arrangements are designed to mitigate cessation and transition risks.

The Oversight Committee may direct the Administrator to consult with stakeholders as described in the [Consultation Process](#) section.

As a last resort, if no alternative arrangements are feasible, the Oversight Committee may advise the Administrator to discontinue the Benchmark, providing stakeholders at least 6 (six) months' notice and assistance to explore alternative reference instruments.

The Administrator will endeavour to identify alternative benchmarks; however, this might not always be possible due to regulations, market conditions or suitable alternatives.

Users of the Benchmark are recommended to ensure that they have adequate fallback policies and procedures in the event of the Benchmark becoming unrepresentative of its economic interest.

## 6.5. Records Retention

The Administrator has in place policies for the retention of any relevant evidence and documentation related to the determination and dissemination of the Benchmark, either in paper or in electronic format, for at least the mandatory term of 5 (five) years.

## 6.6. Auditing

An internal audit process will be undertaken regularly, to ensure adherence to the stated Methodology, the IOSCO principles and regulatory requirements.

## 6.7. Data Licensing and Distribution

The Benchmark is made available subject to execution of an Information License Agreement (ILA) together with the appropriate Schedules. Market participants that intend to subscribe to the Benchmark should contact the Administrator at the following email address: [CMEDataSales@cmegroup.com](mailto:CMEDataSales@cmegroup.com).

## 6.8. Complaints Procedure

The [CME Group EMEA / APAC Complaints Procedure](#) sets out details on the management of customer complaints to ensure that they are handled fairly and effectively, in a prompt and transparent manner and in accordance with applicable regulatory requirements.

Complaints will be dealt with by a senior member of staff not directly involved with the benchmark calculation and dissemination. Information related to complaints will be stored in a restricted access area and kept for a period of at least 5 (five) years following the date when the complaint was first lodged. Complaints can be submitted at [internationalcompliance@cmegroup.com](mailto:internationalcompliance@cmegroup.com)

## Appendix I – Key Terms & Definitions

TERM	DESCRIPTION
<b>Administrator</b>	CME Group Benchmark Administration Limited
<b>BMR</b>	Benchmark Regulation
<b>bp</b>	Basis Point (1 basis point = 0.01%)
<b>Business Day</b>	Business Day in accordance with the CME Globex Trading Schedule
<b>CBA</b>	CME Group Benchmark Administration Limited
<b>DCM</b>	Designated Contract Market
<b>ESTR</b>	Euro Short Term Rate
<b>FCA UK</b>	Financial Conduct Authority (UK)
<b>IMM</b>	International Money Market day-count convention
<b>IOSCO</b>	International Organization of Securities Commissions
<b>SOFR</b>	Secured Overnight Financing Rate
<b>SR3</b>	Three-month SOFR Futures
<b>VWAP</b>	Volume Weighted Average Price
<b>XEURBI</b>	CME EUR/USD Cross Currency Basis Index

## Appendix II – ESG Disclosures

Explanation of how ESG Factors are Reflected in the Key Elements of the Benchmark Methodology		
<b>Item 1</b>	Name of the benchmark administrator.	CME Group Benchmark Administration Limited
<b>Item 2</b>	Type of benchmark or family of benchmarks.	Other
<b>Item 3</b>	Name of the benchmark or family of benchmarks.	CME EUR/USD Cross Currency Basis Index
<b>Item 4</b>	Does the benchmark methodology for the benchmark or family of benchmarks take into account ESG factors?	No

