



Benchmark Determination Methodology for EURIBOR

EURIBOR Governance Framework

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History

Version	Date applicable	Summary of Changes
D0016A-2019	11/2019	Initial version
D0016B-2019	19/04/2021	<p>Clarified the EURIBOR Underlying Interest to include former EU and EFTA countries;</p> <p>Reduced the minimum size threshold eligible transactions from EUR 20 million to EUR 10 million;</p> <p>Included T+3 settlement amongst eligible transactions;</p> <p>Increased the lookback period of usable historical Level 1 contributions by one day;</p> <p>Rolling forward the quarterly Euribor® futures used in Level 2.3 calculations one TARGET day earlier;</p> <p>Replaced references to 'Steering Committee' with 'Oversight Committee'.</p>

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Definitions and conventions

- BMR** Regulation (EU) 2016/1011 of the European Parliament and of the Council of 8 June 2016 on indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investments funds and amending Directives 2008/48/EC and 2014/17/EU and Regulation (EU) No 596/2014.
- RTS** Commission Delegated Regulation (EU) 2018/1637-1646 of 13 July 2018 supplementing Regulation (EU) 2016/1011 of the European Parliament and of the Council.
- GCC** The EURIBOR Governance Code of Conduct sets out the governance arrangements and control framework established by EMMI, in its role as administrator of EURIBOR, for the provision of the benchmark.

Reference to regulatory requirements

For ease of reference, next to each paragraph in all documents of the EURIBOR Governance Framework, EMMI includes an explicit mention to the applicable EU BMR requirement, e.g.

BMR 5, 3(c) Refers to article 5, paragraph 3, point (c) in the EU BMR.

Furthermore, in case the requirement arises from a regulatory technical standard (RTS) developed by ESMA, EMMI refers to the RTS by indicating the article for which it provides further specification, e.g.

RTS 5, 2.1 Refers to article 2.1 on the RTS further specifying the requirements in EU BMR article 5 on procedures and characteristics of the oversight function.

In case the corresponding RTS includes an annex complementing its main text, reference to the annex will be made applying the same logic, e.g.

Annex 5, 1 Refers to article 1 in the annex to the RTS article further specifying the requirements of EU BMR article 5.

1. Euribor specification

1.1. EURIBOR specification

- BMR 3, 14**
BMR 3, 22
RTS 13, 2.1(a)
RTS 13, 2.1(b)
1. The “Underlying Interest” for EURIBOR is stated as: “The rate at which wholesale funds in euro could be obtained by credit institutions in current and former EU and EFTA countries in the unsecured money market.”
 2. There are five “Defined Tenors” for EURIBOR, being 1 week, 1 month, 3 months, 6 months and 12 months.

2. Determination methodology overview

2.1. EURIBOR Panel

- RTS 13, 2.1(e)**
3. The Benchmark Determination Methodology for EURIBOR relies on contributions from a panel of credit institutions (“Panel Banks”) that are active participants in the euro money markets.
 4. For this purpose “credit institution” has the meaning as specified in Article 4(1)(1) of Regulation (EU) No. 575/2013, an undertaking whose business is to receive deposits or other repayable funds from the public and to grant credits for its own account.
- BMR 11, 1(d)**
RTS 13, 2.1(e)
5. The composition of the panel should be sufficient to constitute a representative sample for the purposes of determining an average rate and to reflect the activity in the unsecured euro money market, including its geographic diversity. Conversely, the panel size should remain at a level that is operationally manageable and efficient.
- RTS 13, 2.1(e)**
6. A bank may qualify for panel membership if it has the capacity to handle significant volumes in euro-interest rate related instruments, in particular in the money market.
- RTS 13, 2.1(e)**
7. More specifically, the following items will be considered in assessing the levels of activity and expertise of a potential Panel Bank in the euro money markets:
 - a. On-balance sheet interbank items:
 - i. Assets
 - ii. Loans up to one year
 - iii. Short Term Securities (e.g. Certificate of Deposits and Commercial Paper)
 - iv. Reverse repurchase agreements
 - v. Liabilities
 - vi. Deposits up to one year
 - vii. Repurchase agreements

and also, the following:

- b. Off-balance sheet items:
 - i. Derivatives referring to EURIBOR as the underlying, and denominated in euro (EUR) (OTC and exchange traded);
 - ii. Foreign exchange swaps and cross-currency basis swaps (one leg denominated in euro (EUR))
- RTS 13, 2.1(e)**
8. The EURIBOR Oversight Committee defines and reviews the size and composition of the panel, monitors the adequacy of the criteria to qualify for and stay on the panel, and defines the procedure for selecting Panel Banks and decides on individual applications, as per the EURIBOR Oversight Committee Terms of Reference.
 9. Banks wishing to join the panel must disclose all relevant information on the items considered for the selection. As a matter of convenience, the applicants may present figures notified to the national competent authorities or central banks, or other regulatory or supervisory bodies.
 10. When considering an application, only consolidated figures shall be accepted. In considering market participation levels, internal transactions within non-consolidated networks will be excluded if market conditions are not applied to such transactions.
 11. Non-public information presented to the EURIBOR Oversight Committee in respect of an application will be treated on a strictly confidential basis.

2.2. Calculation hierarchy

12. EURIBOR is grounded, to the extent possible, in euro money market transactions that reflect the Underlying Interest. To ensure robustness in the absence of transactions in the Underlying Interest, the Benchmark Determination Methodology for EURIBOR follows a hierarchical approach consisting of three levels. These levels should be employed progressively and in the order specified below.
 - BMR 11, 1(a)**
 - BMR 12, 1(a)**
 - BMR 12, 2**
 - RTS 12, 2.1(c)**
 - RTS 13, 2.1(d)**
 - BMR 15, 2(a)**
 - RTS 15, 1(d)**
13. Level 1 consists of contributions based solely on transactions in the Underlying Interest at the Defined Tenor from the prior TARGET¹ day, using a formulaic approach provided by The European Money Markets Institute (hereafter “EMMI”).
 - BMR 11, 1(c)**
 - BMR 12, 2(c)**
 - RTS 13, 2.1(d)**
14. Level 2 consists of contributions based on transactions in the Underlying Interest across the money market maturity spectrum and from recent TARGET days, using a defined range of formulaic calculation techniques provided by EMMI.
 - BMR 11, 1(c)**
 - BMR 12, 2(c)**
 - RTS 13, 2.1(d)**
15. Level 3 consists of contributions based on transactions in the Underlying Interest and/or other data from a range of markets closely related to the unsecured euro money market, using a combination of modelling techniques and/or the Panel Bank’s judgment.
 - BMR 11, 1(c)**
 - BMR 12, 1(b)**
 - BMR 12, 2(c)**
 - RTS 13, 2.1(d)**

¹ TARGET is the Trans-European Automated Real-time Gross settlement Express Transfer System. The Eurosystem maintains TARGET2, which is the second generation of TARGET and is a real-time gross settlement system. Throughout this document, references to “TARGET” should be read with respect to the euro system’s TARGET2 system.

3. Level 1 contributions

3.1. Level 1 eligible transactions

- RTS 13, 2.1(b)**
RTS 15, 1(a)
16. Only transactions exclusively directly denominated in euro are eligible².
- RTS 13, 2.1(c)**
RTS 15, 1(a)
17. Only transactions executed³ on TARGET day T are eligible for a Level 1 contribution on TARGET day T+1.
- BMR 12, 2(b)**
RTS 13, 2.1(c)
RTS 15, 1(a)
18. Only borrowing (i.e. cash receiving) transactions conducted in the wholesale unsecured money markets at arm's length are eligible. Intragroup transactions are not eligible.
- RTS 13, 2.1(c)**
RTS 15, 1(a)
19. Only transactions with a fixed rate, or floating rate transactions referenced to the unsecured euro overnight interest rate where the Panel Bank is able to report to EMMI a fixed rate equivalent, are eligible⁴.
- RTS 13, 2.1(c)**
RTS 15, 1(a)
20. For the purpose of measuring wholesale funds, only transactions with the following counterparty types⁵ are eligible:
- a. Deposit-taking corporations except the central bank (S122);
 - b. Money Market Funds (MMFs) (S123);
 - c. Non-MMF investment funds (S124);
 - d. Other financial intermediaries, except insurance corporations and pension funds (S125);
 - e. Financial auxiliaries (S126);
 - f. Captive financial institutions and money lenders (S127);
 - g. Insurance corporations (ICs) (S128);
 - h. Pension funds (S129);
 - i. Central bank (S121)⁶;
 - j. General government (S13).
- RTS 13, 2.1(c)**
RTS 15, 1(a)
BMR ANNEX I, 1
21. Only transactions with the following instruments are eligible:
- a. Unsecured deposits;
 - b. Commercial paper (CPs);
 - c. Certificates of deposit (CDs);

² In particular, borrowing transaction in Euro through the foreign exchange market are not eligible.

³ TARGET2 is open every working day from 7AM to 6PM CET. Further details on the operational day in TARGET2 can be found on the ECB's website.

⁴ EMMI's Guidelines for the Conversion of Floating Rate Transactions can be found in Section 12 of the Code of Obligations for Panel Banks.

⁵ The counterparty classification used for the specification of counterparties follows the definitions of institutional sectors and subsectors described by the European System of Accounts (ESA 2010) developed by the European Union's Eurostat group.

⁶ Transactions related to tender operations and standing facilities, or, in more general terms, any transaction conducted with Central Banks for the implementation of monetary policy, should be excluded from the file communicated to EMMI.

- d. Floating rate notes (FRN), provided they are referenced to the unsecured euro overnight interest rate and the Panel Bank is able to report to EMMI a fixed rate equivalent;
 - e. Other short-term securities⁷.
- RTS 13, 2.1(c)** **RTS 15, 1(a)** 22. Only transactions with standard value date (settlement date) of T, T+1, T+2 and T+3 are eligible.
- RTS 13, 2.1(c)** **RTS 15, 1(a)** 23. Only transactions with maturity date falling into one of the following maturity date windows are eligible:
- a. 1 week +/- 2 TARGET days;
 - b. 1 month +/- 5 TARGET days;
 - c. 3 months +/- 10 TARGET days;
 - d. 6 months +/- 15 TARGET days;
 - e. 12 months - 15 TARGET days⁸.
- RTS 13, 2.1(c)** **RTS 13, 2.1(h)** **RTS 15, 1(c)** 24. Only transactions with notional volume of EUR 10 million or more are eligible.

3.2. Level 1 contribution eligibility

- RTS 15, 1(c)** 25. A Panel Bank's contribution at a given tenor shall be made using the Level 1 methodology when the bank has at least one Eligible Transaction at that tenor for the respective day.

3.3. Level 1 contribution rate

26. The contribution rate is the volume-weighted average rate ("VWAR") of the set of Eligible Transactions for the Defined Tenor. It is calculated as:

$$\text{Contribution Rate} = \frac{\sum_i (r_i \cdot Vol_i)}{\sum_i Vol_i},$$

where r_i and Vol_i are the borrowing rate and size of the Eligible Transaction i , respectively.

4. Level 2 contributions

- RTS 15, 1(d)** 27. Where a Panel Bank has insufficient Eligible Transactions for a Level 1 contribution to be calculated for a given tenor, but nonetheless has had transactions in nearby maturities or recently, the Panel Bank's contribution can be calculated using a further range of calculation techniques in order to make a Level 2 contribution for

⁷ Call account/call money and Asset-backed commercial paper instruments are not eligible.

⁸ Trades with maturities over 366 days may be influenced by dynamics of the euro capital markets, hence not being fully reflective of the behaviour of longer-term end of the money market curve. The 12-month maturity window is therefore restricted to strictly 12 months on the upper side.

that tenor. EMMI permits three Level 2 contribution techniques. These techniques should be employed progressively and in the order specified below:

- a. Level 2.1: adjusted linear interpolation from adjacent Defined Tenors;
- b. Level 2.2: Transactions at non-Defined Tenors;
- c. Level 2.3: Eligible transactions from prior dates.⁹

4.1. Level 2.1. Adjusted Linear Interpolation from Adjacent Defined Tenors

RTS 13, 2.1(n) 28. This technique applies to contributions for the 1 Month, 3 Months and 6 Months
BMR ANNEX I, 2 tenors only. A Panel Bank's contribution should be determined using this technique only when the Panel Bank's does not have a Level 1 contribution at the central tenor and has a Level 1 contribution at both adjacent tenors:

- a. 1 month: Level 1 contributions for 1 week and 3 month tenors
- b. 3 month: Level 1 contributions for 1 month and 6 month tenors
- c. 6 month: Level 1 contributions for 3 month and 12 month tenors

RTS 13, 2.1(n) 29. The Panel Bank's contribution rate should be calculated as the sum of two components:

- a. The linearly interpolated rate at the contribution tenor using the Level 1 contribution rates at the adjacent tenors; and
- b. The Spread Adjustment Factor (SAF), which seeks to incorporate the curvature of the money market yield curve

RTS 13, 2.1(n) 30. The linear interpolation between the adjacent tenors should be based on the respective number of days over the spot settlement date applying to each tenor.

RTS 13, 2.1(n) 31. The SAF is determined based on the prior five days of published EURIBOR fixing rates at each of the tenors. It is calculated as follows:

- a. For each of the last five fixings, the linearly interpolated rate at the contribution tenor is calculated based on the fixing rates at the two adjacent tenors.
- b. The spread of these linearly interpolated rates to the actual fixing rates is taken.
- c. The SAF is the arithmetic mean of these spreads over the past five fixings.

4.2. Level 2.2. Transactions at Non-Defined Tenors

RTS 13, 2.1(n) 32. A Qualifying Non-Standard Maturity Transaction is a transaction that satisfies all
BMR ANNEX I, 2 of the conditions for being an Eligible Transaction (as outlined in Section 4 Level 1 eligible transactions), except that its maturity date falls between 1 Week and 12 Months but lies outside of the maturity date windows specified for Eligible

⁹ Examples of calculations of contributions under each of the different Level 2 methodologies can be found on [EMMI's website](#).

Transactions (Paragraph 23). A Level 2.2 contribution can be determined for all Defined Tenors.

- RTS 13, 2.1(n)** 33. A Panel Bank's contribution should be calculated using this technique when it could not be determined as a Level 1 or Level 2.1 contribution at a particular Defined Tenor, and:
- a. The Panel Bank has at least one Qualifying Non-Standard Maturity Transaction; and
 - b. The transaction volume ascribed to the Defined Tenor from the Qualifying Non-Standard Maturity Transaction is at least EUR 10 million.
- RTS 13, 2.1(n)** 34. The volume of the Qualifying Non-Standard Maturity Transaction is split between the two closest Defined Tenors based on the linearly interpolated weights derived from the days over spot of the Qualifying Non-Standard Maturity Transaction and the two closest Defined Tenors.
- RTS 13, 2.1(n)** 35. The linearly interpolated rate at the non-standard maturity date is calculated using the prior TARGET day published EURIBOR fixings at the two closest Defined Tenors and the weights defined in Paragraph 34. The spread between the linearly interpolated rate and the Qualifying Non-Standard Maturity Transaction rate is calculated. The ascribed rate at the two closest Defined Tenors is calculated as the sum of this spread and the prior TARGET day published EURIBOR fixings at the two closest Defined Tenors.
- RTS 13, 2.1(n)** 36. The final Level 2.2 contribution rate is calculated as the VWAR of all ascribed Level 2.2 rates based on the volumes ascribed to that tenor, if the ascribed volume of each transaction exceeds the threshold set out in Paragraph 33.b.

4.3. Level 2.3. Historical Level 1 contributions

37. This technique should be applied when a contribution rate for a Panel Bank for a specific Defined Tenor could not be determined using Level 1, Level 2.1 or Level 2.2, and when the Panel Bank has made a Level 1 contribution within the previous five or seven TARGET days directly preceding the current contribution day. Level 2.3 applies to all Defined Tenors except the 1 week tenor.
38. Specifically, the Panel Bank's contribution on TARGET date T+1 in respect of TARGET date T should be calculated using this technique when a Level 1 contribution was made on:
- a. 1 month days T to T-4
 - b. 3 month: days T to T-4
 - c. 6 month: days T to T-4
 - d. 12 month: days T to T-6

The contribution made under this technique is based only on the most recent Level 1 contribution within the above time frames.

- BMR ANNEX I, 2** 39. The Panel Bank's contribution rate for a given Defined Tenor is determined as the sum of:

- a. The contribution rate of the most recent Level 1 contribution within the preceding five or seven days; and
 - b. The Market Adjustment Factor (MAF). This factor seeks to correct for the overall movement in interest rates between the date of the contribution in a. and the current date.
40. The MAF is determined using the closing prices of the ICE Three Month EURIBOR Futures for the quarterly months (March, June, September and December). The closing price dates are aligned with the transaction trade dates used for a particular contribution day, therefore the MAF is calculated as the difference in closing prices between the day preceding the last Level 1 contribution day and the day preceding the current contribution day. The sign of the difference is then reversed to convert the price differential into a yield differential.
41. The futures contracts used to calculate the MAF for the eligible Defined Tenors are as follows:
- a. 1 Month: change in near-quarter contract
 - b. 3 Months: change in near-quarter contract
 - c. 6 Months: arithmetic average change in the first two near-quarter contracts
 - d. 12 Months: arithmetic average change in the first four near-quarter contracts

Futures contracts may be used up to their penultimate full day of trading. Where the period over which the market change is being calculated straddles a futures roll date, the next near-quarter contract(s) should be used so that the market change is calculated consistently using the same contracts.

5. Level 3 contributions¹⁰

- BMR 11, 1(a)**
BMR 11, 1(c)
BMR 12, 1(b)
RTS 13, 2.1(d)
RTS 13, 2.1(i)
BMR 15, 2(a)
RTS 15, 1(a)
42. Where a Panel Bank's contribution at a given Defined Tenor cannot be made using either a Level 1 or Level 2 methodology, the Panel Bank must make a Level 3 contribution. Such contributions may be based on two sources of data:
- a. Additional transactions in the Underlying Interest that were excluded from Level 1 and Level 2 contributions; and/or
 - b. Other data from a range of markets closely related to the unsecured euro money market.
- BMR 12, 1(b)**
BMR 15, 2(a)
43. Panel Banks should determine a Level 3 contribution using the data in Paragraph 42 through the application of a combination of modelling techniques and/or the Panel Bank's judgement. A Panel Bank's Level 3 contribution should reflect the average rate of borrowing by the Panel Bank over the TARGET day preceding the day of publication.
- BMR 12, 1(b)**
44. The two broad categories in Paragraph 42 are not mutually exclusive, that is Panel Banks may use both additional transactions in the Underlying Interest as well as

¹⁰ Additional requirements and guidance regarding the Level 3 contribution process can be found in the EURIBOR Code of Obligations of Panel Banks.

data from other markets together to inform a Level 3 contribution for a particular Defined Tenor.

- BMR 12, 1(b)**
BMR 15, 2(a)
45. While EMMI does not mandate that Panel Banks employ a particular model or type of analysis in using data from these other markets, in making such determinations, each Panel Bank should reflect its own particular circumstances, business patterns, funding and liquidity management, and the differentiation in market drivers between each Defined Tenor, while observing the General Principles given below.
- BMR 12, 1(b)**
RTS 11, 2.1
46. Where a Panel Bank has a range of available methods for making a Level 3 contribution, the Panel Bank should seek to ensure that a particular method is applied consistently over time.
- BMR 12, 1(b)**
RTS 11, 2.1
47. Every Level 3 contribution must include a rationale explaining the data source(s) used to derive the contribution rate.
- BMR 12, 1(b)**
RTS 11, 2.1
48. Panel Banks should provide information on their Level 3 determination methods, including methodology descriptions, performance and independent review reports, on request, to EMMI and the corresponding national competent authorities. Any changes in a Bank's Level 3 determination methodology should be brought to EMMI's attention.
- BMR 11, 1(b)**
BMR 12, 1(b)
BMR 12, 1(e)
RTS 15, 1(a)
RTS 15, 1(h)
49. Where data other than those used in Level 1 and Level 2 determinations are used as inputs for Level 3 contributions, these data should, where feasible:
- a. be publicly available (subject to a possible subscription arrangement);
 - b. be sourced from regulated markets, trading venues or entities; or
 - c. possess or otherwise be amenable to an audit trail.

EMMI permits the use of data from prior days, including a Panel Bank's prior contributions, provided that such data are appropriately adjusted to take account of market movements or changes in the Panel Bank's relative borrowing costs from the time of the original contribution to the current reference period.

Additional Transactions in the Underlying Interest

- BMR 11, 1(a)**
BMR 12, 1(e)
BMR 12, 2(c)
50. EMMI requires that the determination of EURIBOR be anchored to the greatest extent possible in transactions in the Underlying Interest.
- BMR 15, 2(a)**
RTS 15, 1(a)
51. Panel Banks are expected to consider additional transactions that may have not been used for Level 1 or Level 2 contributions for a Level 3 contribution, provided that these transactions accurately¹¹ reflect the individual Panel Bank's unsecured wholesale borrowing costs and are conducted in competitive markets at arm's

¹¹ For the purpose of Level 3 contributions, as considered here, Panel Banks are permitted to exclude individual transactions or classes of transactions from their calculations if such transactions can reasonably be considered to be conducted at rates that do not reflect the bank's wholesale unsecured funding costs. Specifically, transactions with special pricing arrangements or with special structural terms can be so excluded.

length. Specifically, Panel Banks may incorporate into their Level 3 contributions data derived from:

- a. Transactions that would be classed as Level 1 Eligible Transactions, except that they fall below the Minimum Size threshold;
- b. Qualifying Non-Standard Maturity Transactions whose volumes allocated to Defined Tenors are below the tenor threshold; and
- c. Transactions with Non-Financial Corporations, where such Corporations are not categorised as small business customers in the Basel III LCR regulations. These transactions should be otherwise Level 1 Eligible Transactions or be Qualifying Non-Standard Maturity Transactions for the purposes of Level 2, but without restrictions on the notional volume.

Data from Other Markets

BMR 15, 2(a) 52. In determining Level 3 contributions Panel Banks may also use data from markets
BMR ANNEX I, 1 that reflect or are closely correlated with the Underlying Interest of EURIBOR. EMMI considers that the markets and instrument types listed below generally fulfil this criterion.

- a. Futures contracts referencing EURIBOR;
- b. Forward Rate Agreements (FRAs), Fixed/Floating Interest Rate Swaps, and Basis Swaps referencing EURIBOR;
- c. Overnight Index Swaps referencing the unsecured euro overnight interest rate or other short-term euro interest rates; and
- d. Overnight and term securities financing transactions¹² in euro.

BMR 12, 2(c) 53. Where a choice of such data exists for the particular market or set of instruments
RTS 13, 2.1(d) above, the following hierarchy of preferences should apply:
BMR 15, 2(a)
RTS 15, 1(d)
BMR ANNEX I, 1

- a. Data grounded¹³ in actual transactions, where appropriate;
- b. Data based on executable quotes;
- c. Indicative prices, rates or quotes, with no firm commitment for execution;
- d. Data reliant primarily on the expert judgment of the Panel Bank.

In considering this hierarchy of preferences, a Panel Bank should take account of the particular micro-structure of the specific market and the Panel Bank's role and level of activity in this market.

RTS 15, 1(h) 54. For certain instruments and markets Panel Banks should make due provisions to account for the particular characteristics of those instruments and markets. For instance:

- a. If a Panel Bank makes use of repo or similar secured rates as input data, the bank should consider how to adjust for any special characteristics of the underlying collateral. The bank might also choose to restrict the repos to be considered as inputs for Level 3

¹² For this purpose "securities financing transaction" has the meaning as specified in Article 3(11) of Regulation (EU) No. 2015/2365.

¹³ Closing reference prices on regulated markets and trading venues are considered to be so grounded.

contributions to those whose collateral is in pre-defined classes such as "General Collateral".

- b. Where a Panel Bank uses futures or swaps as inputs to construct a funding curve, the bank should consider how the margin arrangements for such contracts affect the predicted funding rates.

RTS 13, 1(i) 55. EMMI restricts the use of the following inputs for Level 3 contributions:

- a. Foreign Exchange Forwards should not be used to derive a Level 3 contribution rate, given the high volatility of the basis between actual and implied interest rates derived from such products, the possible lack of an interest rate benchmark in the counter-currency and the use of collateralisation in some jurisdictions. Panel Banks may nonetheless consider the availability of euro funding through the foreign exchange market as a general environmental factor when exercising their expert judgment.

6. Calculation and publication

Calculation

RTS 15, 1(f) 56. Panel Banks will submit their contribution data on every TARGET day during the specified Contribution Windows. The contribution rates of individual Panel Banks will be rounded to two decimal places following the symmetric arithmetic rounding convention: "half away from zero"¹⁴.

RTS 15, 1(g) 57. The contribution window for transactions data is from 06:00 a.m. (CET) to 08:30 a.m. (CET) and the contribution window for Level 3 data is from 08:00 a.m. (CET) to 10:00 a.m. (CET).

58. The final contribution rate of each Panel Bank is determined using the hierarchical approach defined above. The final contribution rate is determined with Level 1 when possible, then Level 2.1, 2.2 or 2.3 and finally, if no other level is possible, with Level 3.

RTS 13, 2.1(f) 59. The Calculation Agent shall, for each EURIBOR tenor, eliminate the highest and lowest 15% of the final contribution rates of all Panel Banks. The remaining rates will be arithmetically averaged and rounded to three decimal places following the symmetric arithmetic rounding convention: "half away from zero".

60. The published EURIBOR rates follow euro money market conventions, that is, spot settlement (T+2)¹⁵, the TARGET2 calendar, an Actual/360 day count convention, and modified following business day with month-end adjustment convention.

¹⁴ Applying this convention to the EURIBOR contributions, in this instance the second decimal shall be rounded up to the nearest integer if the third decimal is more or equal to 5 and down if it is less than 5. This method applies symmetrically to negative rates. The same logic applies for the third decimal in the final EURIBOR rate (see Paragraph 59).

¹⁵ As noted in Paragraph 17, the underlying interest is measured in relation to the day preceding publication. The T+2 convention should therefore be understood as applying to the date preceding the publication date.

61. For the purpose of calculation, EMMI measures the Underlying Interest as the average rate of borrowing by credit institutions over the TARGET day preceding the day of publication.

Fallback provisions

- BMR 12, 3** 62. If more than 50% of Panel Banks fail to provide their data by 11:00 a.m. (CET), the Calculation Agent shall delay the calculation of the EURIBOR until 50% of the Panel Banks have quoted. This convention is applied to each Defined Tenor separately.
- BMR 12, 3** 63. If at 11:15 a.m. (CET) fewer than 12 Panel Banks have provided data (quorum 1), or if the Panel Banks, which have provided data, are from fewer than 3 countries (quorum 2), the calculation agent shall delay the calculation of the EURIBOR for that day until 12 or more Panel Banks from 3 or more countries have provided data. The Calculation Agent, at 11:15 a.m. (CET), informs the authorised data vendors of the delay. The data vendors in turn should make this information available to their end users. This convention is applied to each Defined Tenor separately.
- BMR 12, 3** 64. If at 12:30 p.m. (CET) fewer than 12 Panel Banks have provided data (quorum 1), or **RTS 13, 2.1(i)** if the Panel Banks, which have provided data, are from fewer than 3 countries (quorum 2), EURIBOR rates of the previous TARGET day will be republished at 12:30 p.m. (CET) and will be used as the EURIBOR rates for that day. Any republished rates from the previous business day will be identified as such by EMMI on its webpage. This convention is applied to each Defined Tenor separately.
- BMR 12, 3** 65. In the event described in Paragraph 64, the EURIBOR Oversight Committee shall be convened in a special session as soon as practicable on notification of a contingency event, in order to devise a resolution strategy preserving the continuity of EURIBOR. This strategy should be implemented within a period no longer than 3 fixing days of the prior fixing established under the regular process. The prior fixing may be re-published as the fixing for the days in this period.
- BMR 12, 3** 66. Calculation of the rates may also be delayed up to 11:15 a.m. (CET) to allow the Calculation Agent to re-confirm Panel Bank contributions, which have been flagged based on the execution of pre-calculation checks designed to detect potential data errors. If this is not possible before 11:15 a.m. (CET) and the exclusion of the Panel Bank contribution results in quorum 1 or quorum 2 not being reached, the process described in Paragraph 63 is followed. Otherwise the Panel Bank contribution is excluded and EURIBOR is published at 11:15 a.m. (CET). This convention is applied to each Defined Tenor separately.

Publication

67. EURIBOR is published daily on every TARGET day, at or shortly after 11 a.m. CET for each of the Defined Tenors. The rates will be made available to all its subscribers and authorised data vendors.
68. Historical data for EURIBOR is also made publically available on a delayed basis on EMMI's official website, as per Paragraph 70.f.

69. The EURIBOR Oversight Committee has adopted the EURIBOR Intraday Re-fixing Policy that defines the circumstances under which EURIBOR may be re-fixed.

7. Transparency

- BMR 13, 1** 70. The following information on the EURIBOR governance and rate-setting process shall be publicly disclosed on the EMMI website:
- a. The EURIBOR Governance Framework, including this BDM, the EURIBOR Code of Obligations of the Panel Banks (“COPB”), the EURIBOR Code of Obligations of Calculation Agent (“COCA”) and the EURIBOR Governance Code of Conduct including the EURIBOR Oversight Committee Terms of Reference;
 - b. The procedures for consulting on any proposed material change in the EURIBOR methodology and the rationale for such changes, including a definition of what constitutes a material change to the EURIBOR benchmark and the circumstances in which EMMI should notify users, as determined on the EMMI Benchmarks Consultation Policy;
 - c. The list of Panel Banks contributing to EURIBOR and, when applicable, any change in the composition of the panel, as well as the list of Panel Banks that have declared their adherence to the COPB;
 - d. Membership of the EURIBOR Oversight Committee along with declarations of conflicts of interest;
 - e. The minutes of the Oversight Committee; and
 - f. The EURIBOR daily rate, monthly and yearly averages on a delayed basis. EMMI will also publish transparency indicators on a monthly basis including aggregate volume, and the frequency of each of the methodology level used.

8. Periodic review of the methodology

8.1. Assessment of Underlying Market and Methodology

71. Given the definition of the Underlying Interest in Paragraph 1, the “Underlying Market” of EURIBOR is defined as the unsecured wholesale euro bank funding market, where wholesale has the similar meaning as in Paragraph 20.
- BMR 11, 1(a)**
BMR 11, 2(c)
BMR 11, 3(a)
BMR 12, 2(a) 72. As part of the EURIBOR Data Integrity Program, EMMI prepares a quarterly report on the Underlying Market, using data collected directly from EURIBOR Panel Banks and complemented with other sources, most notably the Money Market Statistical Reporting (“MMSR”) dataset of the European Central Bank (“ECB”). This enables an

analysis of the activity, liquidity, size and representativeness of the input data collected from the Panel Banks.

- BMR 12, 1(c)**
BMR 13, 1(b)
RTS 13, 3.1
73. In addition to the quarterly reporting, EMMI performs an annual assessment of the EURIBOR methodology. This entails a data collection exercise, where Panel Banks are required to report all data in the unsecured segment of the euro money market. This exercise enables the analysis of the effects of including currently ineligible instrument types, counterparty sectors or adjusting the methodology parameters, such as the maturity windows or eligible settlement conventions.
- BMR 13, 1(b)**
RTS 13, 3.1
74. In conjunction with the annual assessment of EMMI, the EURIBOR Oversight Committee performs a review of the benchmark's definition and methodology at least annually, and makes recommendations to EMMI's Governing Bodies (as per the EURIBOR Oversight Committee Terms of Reference).

8.2. Criteria for Implementing Changes to the Methodology

- BMR 11, 4**
RTS 13, 2.1(k)
75. Based on the assessment above, EMMI will decide annually on any changes to the EURIBOR methodology. Potential changes include, but are not limited to, changes to the eligibility of different input data, changes to the formulaic calculation mechanisms of Level 2, changes to the methodology parameters (for instance the Spread Adjustment Factor and Market Adjustment Factor of Level 2), changes to the use of external data (for instance the use of the 3M EURIBOR Futures for the Market Adjustment Factor) or hierarchy of the input data or the calculation methodologies.
- BMR 11, 4**
RTS 13, 2.1(c)
RTS 13, 2.1(k)
76. The objective of any change to the methodology is to ensure that the input data and methodology represent the market and economic reality EURIBOR seeks to measure. Further objectives are to ensure the reliance on actual transactions in the calculation of EURIBOR to the greatest extent possible, while ensuring that the benchmark remains reflective of the Underlying Interest, responsive to events and developments in the Underlying Market and that the methodology itself does not contribute to artificial volatility that does not stem from market events.
77. Where a proposed change to the methodology would constitute a material change to the benchmark, EMMI will follow the due process set out in the EURIBOR Consultation Policy. The EURIBOR Oversight Committee ultimately defines what constitutes a material change of the benchmark.
- BMR 11, 4**
RTS 13, 3.1(c)
78. Any proposed changes to the methodology are overseen, monitored and approved for implementation by the EURIBOR Oversight Committee and the guiding principles are as set out in the EMMI Benchmarks Changes and Cessation Policy.