

Benchmark Determination Methodology (BDM)

Version	Approval date	Approval Body	Reference
Version 1	12 April 2017	General Assembly	D0043A-2017



EONIA® GOVERNANCE FRAMEWORK

Benchmark Determination Methodology

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1. OBJECTIVES

The European Money Markets Institute (EMMI), as Administrator for the Eonia[®] benchmark, has a responsibility to specify the determination methodology for the calculation of Eonia[®]. The determination methodology is defined in this document: the **Eonia[®] Benchmark Determination Methodology (BDM)**. The BDM is an integral component of the **Eonia[®] Governance Framework**.

The BDM describes the technical features of Eonia[®], including the nature and sources of data, and the calculation methods, under both normal and contingency circumstances.

As provided in Section 2 of the **Eonia[®] Governance Code of Conduct (GCC)**, the Euribor-Eonia[®] Steering Committee (the Steering Committee) shall design and review the benchmark's definition and methodology at least annually, as well as review and recommend fallback procedures and contingency arrangements in the event that the Eonia[®] benchmark cannot be published.

2. DEFINITIONS

For reference, as specified in the **Eonia® Governace Framework** document, the Underlying Interest for Eonia® is stated as:

Eonia® represents the rates at which banks of sound financial standing in the European Union and European Free Trade Area (EFTA) lend funds in the overnight, interbank money markets in euro.

As part of the Determination Methodology of Eonia®, the following definitions will apply:

- (a) **Eligible Transactions** means overnight unsecured lending transactions in the interbank market, undertaken by Panel Banks in the European Union and European Free Trade Association (EFTA) countries. Intra-group transactions are not considered as eligible transactions;
- (b) **Overnight** means from the TARGET day for which the benchmark is calculated (i.e. day on which the Trans-European Automated Real-Time Gross-Settlement Express Transfer system is open) to the next TARGET day;
- (c) **Transactions** means those initiated during the TARGET day (i.e. before the closing of the TARGET system at 6:00 p.m. Brussels time);
- (d) An **interbank transaction** means a transaction between two credit institutions. For clarification, transactions with government agencies such as the Bank of International Settlements (BIS), Central Banks, or State Treasuries should not be included. All credit institutions, irrespective of credit quality or location, are to be included;
- (e) **Intra-group transactions** means transactions between two entities (e.g. branches or subsidiaries) within the same overall financial group.

3. CALCULATION OF EONIA

3.1 Calculation Process

1. Eonia[®] is calculated every TARGET¹ day by the Calculation Agent.
2. The Calculation Agent shall aim to calculate the Eonia[®] reference rate and aggregate volume, in accordance with the input received, by 7 p.m. Brussels time on the same evening.
3. If after 6.30 p.m. Brussels time, there are reasons to believe that a contribution will not arrive on time for publishing Eonia[®] by 7 p.m. Brussels time, the Calculation Agent staff overseeing the Eonia[®] calculation process will proceed with the calculation on the basis of the data available, even if incomplete. Contributions and corrections thereof made by Panel Banks after 6.30 p.m. Brussels time will be considered on a best effort basis and as long as their processing would not endanger the timely publication of the computed rate by 7 p.m. Brussels time.
4. Should the Calculation Agent have reasons to believe that a Panel Bank's contribution has certain computational errors and such contribution cannot be confirmed or amended by the Panel Bank on time before publication, the Calculation Agent will discard this contribution when computing Eonia[®].
5. The Calculation Agent will undertake control measures to assess the quality of Eonia[®] and will report to the Steering Committee on the performance of individual Panel Banks.

3.2 Calculation Method

1. As specified in Section 5.4 of the Eonia[®] Code of Obligations of Panel Banks (COPB), on each TARGET day, Panel Banks shall report to the Calculation Agent:
 - The total volume of eligible transactions for that day;
 - The volume-weighted, average interest rate for these transactions.
2. Eonia[®] is then computed as the volume-weighted average interest rate across all of the submitted rates from the Panel Banks. The modified calculation under contingency circumstances is described further below.
3. Eonia[®] is reported and calculated on an Actual/360 day count convention and is displayed to three decimal places.

¹ TARGET stands for 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 Eurosystem's TARGET2 system.

4. DETERMINATION METHODOLOGY UNDER CONTINGENCY CIRCUMSTANCES

1. The need for fall-back arrangements as part of the Eonia[®] determination methodology is inherent to the nature of any transaction-based benchmark. For Eonia, the fall-back arrangements consist of:
 - a contingency trigger, defining when a contingency is deemed to have occurred; and
 - a modified calculation method, to be applied during a contingency.
2. Upon breach of the contingency trigger, the Steering Committee shall be promptly informed by the EMMI Secretariat. In this event, the Steering Committee shall be convened in special session within a period no longer than four fixing days in order to devise a resolution strategy.
3. The contingency trigger is specified based on the number of Panel Banks providing non-zero volume reports on a given TARGET day. If the number of non-zero volume Panel Bank contributors to the daily determination of the Eonia[®] benchmark is less than or equal to four, then a contingency is deemed to have occurred.
4. During a contingency, Eonia[®] shall be calculated using a modified method. Under such circumstances, Eonia[®] will be computed as the volume weighted average of:
 - the current day's rate, calculated under the standard method; and
 - the prior day's rate, calculated under the applicable contingency or standard method, according to whether the prior day was a contingency or not.

In formulaic terms, Eonia[®] is therefore calculated as:

$$E_t = \frac{r_t v_t + E_{t-1} v_{t-1}}{v_t + v_{t-1}}$$

where:

t is the current TARGET day and $t-1$ is the prior TARGET day;

E_t is the published Eonia[®] rate on day t ;

v_t is the actual volume on day t ;

r_t is the Eonia[®] rate calculated according to the standard method on day t ;

E_{t-1} is the published Eonia[®] rate on day $t-1$;

v_{t-1} is the published Eonia[®] volume on day $t-1$.

5. During a contingency, the volume accompanying the publication of the Eonia[®] rate will be the sum of volumes submitted by the Panel Banks on that day.

6. During a contingency, the dissemination of the benchmark will include an annotation indicating that a contingency has been invoked.

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