

## Singapore Overnight Rate Average (“SORA”) Key Features and Calculation Methodology

Key features	Description
Definition	SORA is the volume-weighted average rate of borrowing transactions in the unsecured overnight interbank SGD cash market in Singapore between 8.00am and 6.15pm.
Benchmark Administrator	The Monetary Authority of Singapore (“MAS”) is the administrator of SORA.
Reporting Banks	<p>The list of reporting banks is set out in the <b>Annex</b>. The reporting banks are the most active market participants in the underlying unsecured overnight interbank SGD cash market.</p> <p>MAS will review the list of reporting banks periodically to ensure that SORA continues to be a representative and robust benchmark.</p>
Eligible Transactions	<p>On each business day in Singapore, reporting banks provide data on all transactions that meet the following criteria:</p> <ul style="list-style-type: none"> <li>(a) Unsecured overnight interbank SGD borrowing transactions (i.e. where a reporting bank borrows SGD cash on an overnight basis from another bank);</li> <li>(b) Traded with onshore banks<sup>1</sup> and booked in the window between 8.00am and 6.15pm (both timings inclusive);</li> <li>(c) Booked in Singapore or outside of Singapore (under central-booking arrangements approved by MAS);</li> <li>(d) Settled on the trade date; and</li> <li>(e) At least S\$1 million.</li> </ul> <p>For avoidance of doubt, transactions done on behalf of a foreign branch/head-office are excluded as these are not transactions of the reporting bank. Transactions between the reporting bank and its affiliates, are also excluded as only arms-length transactions are used in the computation of SORA.</p>
Calculation Methodology	Volume-weighted average
No. of Decimal Places	4
Day/Time of Benchmark Publication	<p>SORA for a given business day in Singapore is published by 9.00am on the next business day in Singapore.</p> <p>Alongside the daily publication of SORA, the following information is also published:</p> <ul style="list-style-type: none"> <li>(a) Aggregate volume</li> <li>(b) Highest and lowest transacted rates</li> <li>(c) Calculation method: Normal or Contingency (see “Data Sufficiency Conditions and Short-Term Contingency Arrangements” section below)</li> </ul>

<sup>1</sup> Onshore banks refer to any bank in Singapore or merchant bank in Singapore, including foreign bank branches.

	<p>and whether the rate is a republished rate (see “Republication Policy” section below)</p> <p>(d) SORA Index<sup>2</sup></p> <p>(e) 1-month, 3-month and 6-month Compounded SORA<sup>3</sup></p>
Publication Pages	<p>SORA will be published daily on the <a href="#">Statistics</a> page of the MAS website. General information on SORA is available <a href="#">here</a>.</p> <p>SORA data is redistributed by:</p> <p>(a) Bloomberg – Ticker: SIBCSORA Index</p> <p>(b) Refinitiv – Screen: SORA=MAST</p>
Data Sufficiency Conditions and Short-Term Contingency Arrangements	<p>SORA is computed from reporting banks’ concluded arms-length Eligible Transactions. If Eligible Transactions are insufficient or not available on a given day, SORA will be produced using contingent data sources, as outlined below.</p> <p><u>Conditions for data sufficiency (all conditions to be met)</u></p> <p>(a) Minimum number of reporting banks with Eligible Transactions: 5</p> <p>(b) Minimum number of Eligible Transactions: 10</p> <p>(c) Minimum volume of Eligible Transactions: S\$500 million</p> <p><u>Contingency arrangements</u></p> <p>If any one of the above conditions is not met, SORA will not be computed using the normal calculation methodology, and a contingency process will be triggered (“Contingency SORA”).</p> <p>Contingency SORA will be computed by first calculating the difference between the reference rate of MAS’ Standing Facility<sup>4</sup> (“SF reference rate”) on trade date and that of the previous business day. This difference will then be added to the previous business day’s SORA to get the Contingency SORA rate, subject to a floor of zero.</p> <p>Contingency SORA for day T =</p> <p>SORA on day T-1 + (SF reference rate on day T – SF reference rate on day T-1), subject to a floor of zero</p> <p>In the event that the contingency arrangements are activated, this will be indicated on the MAS website.</p>

<sup>2</sup> The [SORA Index](#) is a daily data series representing the returns from earning compounded interest each day at the daily SORA rate. The SORA Index aims to simplify the calculation of compounded interest rates in a standardised manner. Hence, the change in the SORA Index for any reference period (i.e. between any two dates) can be used to calculate the compounded SORA over that period.

<sup>3</sup> The [Compounded SORA](#) rates for the 1-month, 3-month and 6-month tenors aim to provide standardised reference rates for SGD financial products.

<sup>4</sup> The [MAS Standing Facility](#) is a discount window that allows eligible counterparties to borrow SGD on an overnight and collateralised basis, or deposit SGD on an overnight basis. The SF reference rate is the volume-weighted average of successful bids for MAS’ S\$500 million overnight clean borrowing conducted during money market operations on the same day, rounded to two decimal places.

Reporting Process	<p>Reporting banks provide information on all Eligible Transactions, in the manner and form as specified by MAS, from 6.15pm to 7.15pm on every business day in Singapore.</p> <p>MAS performs the necessary data validation checks on the reported transactions to ensure the accuracy of SORA. Reporting banks are expected to rectify any errors (including incomplete data fields or omission of trades) and re-send the data file to MAS as soon as practicable so that the rectified trades can be included in the calculation of SORA for publishing at 9am.</p>
Republication Policy	<p>Any erroneous trade inadvertently included by the reporting banks into the SORA published at 9am must be highlighted to MAS by 11.30am on the day, for SORA to be republished.</p> <p>SORA will be republished on a given day if the recalculated benchmark is two or more basis points away from the rate published at 9.00am.</p> <p>Republication will be no later than 12.00pm on the same day. MAS will only republish SORA once for a given day.</p> <p>Once the republication deadline has passed, no amendment will be made.</p>
Oversight Committee	<p>An Oversight Committee comprising members of MAS' senior management, oversees the administration of SORA, including the SORA methodology and control framework.</p> <p>The Oversight Committee's key responsibilities include:</p> <ul style="list-style-type: none"> <li>(a) Periodic review of the definition and methodology of SORA</li> <li>(b) Oversight of any changes to the methodology</li> <li>(c) Review of key SORA publication statistics and occurrences of error</li> <li>(d) Following up on internal audit findings related to the SORA administration process</li> <li>(e) Investigation of complaints or inquiries regarding the administration of SORA</li> <li>(f) Review of the policies and approach in consulting relevant stakeholders on benchmark cessation should this become relevant</li> <li>(g) Oversight of measures to identify and mitigate risks in the benchmark administration process</li> </ul>
Contact	<p>General queries regarding the administration of SORA can be made directly to the Monetary and Domestic Markets Management Department (MDD) by emailing <a href="mailto:sgddiv@mas.gov.sg">sgddiv@mas.gov.sg</a> or calling 6229 9150.</p> <p>Any complaints on the administration of SORA can be made directly to MAS through the <a href="#">feedback form</a> or by calling 6225 5577.</p>
Terms and Conditions Governing the Use of SORA	<p>SORA, SORA-related statistics, the 1-month, 3-month and 6-month Compounded SORA rates, and the SORA Index, are provided on an "as is" basis, without warranties of any kind. MAS shall not be liable for any damage or loss, which may arise from reliance on such data obtained from the MAS website. Please refer to the <a href="#">Terms of Use</a> on accessing and using any part of the MAS website.</p>

## Annex: List of reporting banks

*(As of 25 May 2023)*

- 1 ABN AMRO Bank N.V. Singapore Branch
- 2 Australia and New Zealand Banking Group Limited, Singapore Branch
- 3 Barclays Bank PLC, Singapore Branch
- 4 BNP Paribas, Singapore Branch
- 5 Chang Hwa Commercial Bank Limited, Singapore Branch
- 6 CIMB Bank Berhad, Singapore Branch
- 7 Citibank N.A., Singapore Branch
- 8 Commerzbank AG Singapore Branch
- 9 Credit Agricole Corporate & Investment Bank, Singapore Branch
- 10 DBS Bank Limited
- 11 Deutsche Bank AG, Singapore Branch
- 12 HL Bank, Singapore Branch
- 13 Industrial and Commercial Bank of China Limited, Singapore Branch
- 14 ING Bank N.V., Singapore Branch
- 15 KBC Bank N.V. Singapore Branch
- 16 Malayan Banking Berhad, Singapore Branch
- 17 Mizuho Bank Limited, Singapore Branch
- 18 MUFG Bank Limited, Singapore Branch
- 19 National Australia Bank Limited, Singapore Branch
- 20 Natixis, Singapore Branch
- 21 Oversea-Chinese Banking Corporation Limited
- 22 Royal Bank of Canada, Singapore Branch
- 23 Standard Chartered Bank (Singapore) Limited
- 24 The Hongkong and Shanghai Banking Corporation, Singapore Branch
- 25 United Overseas Bank Limited