

CANADIAN OVERNIGHT REPO RATE AVERAGE (CORRA)

METHODOLOGY GUIDE

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1 INTRODUCTION

1.1 CORRA OVERVIEW

- The Canadian Overnight Repo Rate Average (“CORRA”) is a measure of the average cost of overnight collateralized funding.
- CORRA is defined as the volume weighted average rate of overnight repo transactions, conducted on-screen through designated inter-dealer brokers (“IDBs”), which involve general (non-specific) Government of Canada Collateral.
- CORRA is widely used as the reference for overnight indexed swaps and related futures.

1.2 PURPOSE OF DOCUMENT

- This document, issued by Thomson Reuters in its capacity as Administrator for CORRA, specifies the Methodology of CORRA.

1.3 INTENDED READERSHIP

- This document is intended for Stakeholders of the Benchmark.

1.4 DOCUMENT PUBLICATION

- This document will be Published through a Thomson Reuters portal or Made Available to Stakeholders upon request.

1.5 DOCUMENT REVIEW

- The Methodology will be subject to review by the Administrator at least annually.

2 METHODOLOGY OVERVIEW

1.1 OVERVIEW

- CORRA is set daily as the volume weighted average rate of overnight repo transactions conducted on-screen through designated IDBs between 6:00 and 16:00 Eastern Time (“ET”), on the specified date as reported to the Administrator by the IDBs.
- CORRA is limited to repo transactions that involve general (non-specific) collateral. In the event that less than CAD\$500 million in eligible overnight trades are reported in aggregate, CORRA is set at the Bank of Canada's target for the overnight rate.
- All participants transacting on the designated IDBs would have their Government of Canada general collateral Repo transactions included in the CORRA calculation, including those cleared through the Canadian Derivatives Clearing Corporation’s central counterparty system, provided the transactions are in excess of CAD\$500 million in aggregate. The Participant screens therefore provide a primary source of price discovery throughout the day.
- For each specified Business Day, CORRA is calculated and published by the Administrator on the following Business Day at 09.00 ET.

2.1 CONTRIBUTORS

- As of the Effective Date of this document the Contributors are:
 - Freedom International Brokerage Company
 - Shorcan Brokers Limited
 - Tullett Prebon Canada Limited.
- This list may be updated from time to time. Changes to Contributors are available on request from Thomson Reuters Customer Zone: <https://customers.reuters.com/crmcontactus/support.asp>

2.2 PROCEDURES AND PUBLICATION TIME

- Contributions are made by the IDBs between 16:00 and 17:59:59 ET. On early market closes, Contributions are made between 13:00 ET and 6:59:59 ET the following Business Day.
- Contributors can make changes to their Contributions as many times as required up until 17:59:59 ET (or 6:59:59 ET on early market closes). Any new Contribution will overwrite the previous one if sent before 17:59:59 ET.
- The Administrator will use reasonable efforts to include in the calculation any Contribution, or change to a Contribution, made after 17:59:59 ET (or 6:59:59 ET on early market closes).
- The Benchmark will be published at 09:00 ET each Business Day, subject to any delay as set for in Section 2.4 below. A Business Day means any day on which Schedule 1 banks under the Bank Act (Canada) are open for business in Toronto, Ontario, Canada.

2.3 DELAYED RELEASE

- In the event the Administrator becomes aware, before the 09:00 ET publication of the Benchmark, of an error committed by the Contributor in its Contribution, the Administrator may, in its discretion, delay publication of the Benchmark up until 09:30 ET at the latest. This delay will allow the Contributor to complete a revised Contribution, and the Administrator to calculate and publish the Benchmark.
- In the event one or more Contributor(s) does not make its Contribution available to the Administrator before the 9:00 ET publication of the Benchmark, the Administrator will use reasonable efforts to contact the Contributor, as well as to enable the completion of the Contribution through alternative means if the standard contribution mechanism is experiencing an operational failure. The Administrator can delay the publication of the Benchmark up until 11:00 ET, to the extent this delay allows for all Contributions to be effectively completed by the Contributors and communicated to the Administrator.
- In the event of a delay in publication of the Benchmark, the Administrator will initiate its standard process for alerting market participants, which includes publishing an alert on the FIXALERT page.
- In the event one or more Contributor(s) does not make its Contribution(s) available to the Administrator, even after reasonable efforts are used by the Administrator, and if the CAD\$500 million threshold is met by

the remaining Contribution(s), then the Administrator will calculate the Benchmark subject to consulting with the Bank of Canada. In the event one or more Contribution(s) are not made available to the Administrator, even after reasonable efforts are used by the Administrator, and if the CAD\$500 million threshold is not met by the remaining Contribution(s), the Benchmark will be set at the Bank of Canada's target for the overnight rate.

2.4 MINIMUM CONTRIBUTIONS NEEDED

- The Benchmark is calculated by the Administrator only if the trade volume represented by the Contribution(s) meets or exceeds CAD \$500 million in aggregate eligible overnight trades. If the CAD \$500 million threshold is not met by the Contribution(s), the Benchmark is set at the Bank of Canada's target for the overnight rate.

2.5 REFIX POLICY

- If Thomson Reuters becomes aware of any error that has any effect on the final calculated benchmark within fifteen minutes of the 09:00 ET publication time, an alert will be released as soon as possible, and the rate will be recalculated. This is the case for both participant submission error and calculation error.
- In addition, if Thomson Reuters becomes aware of an error that has a two basis points or greater effect on the final calculated benchmark before 09:45 ET on the day of calculation, an alert will be released as soon as possible and the rate will be recalculated. This is the case for both submitter error and calculation error.
- If Thomson Reuters becomes aware of an error after 09:45 ET on the day of calculation, no matter the cause or magnitude, there will be no recalculation.
-

	ORIGINAL RATE	REFIX RATE	NET CHANGE	REFIX?
Example 1	0.5276	0.5776	+0.05	YES
Example 2	0.5136	0.5236	+0.01	NO

- In the event of an error being reported, Thomson Reuters will alert clients that the rates are suspect through a message on the Thomson Reuters <FIXALERT> page. CORRA participants will also be informed via email. During the investigation into the rates, updates will continue on the <FIXALERT> page every 30 minutes, including confirmation of any refix. The <FIXALERT> page is also available via other vendors.

2.6 REVIEW OF THE BENCHMARK AND CONTRIBUTORS

- The Administrator will carry out a review of the Benchmark on an at least an annual basis. This review will include analysis of the underlying market the Benchmark seeks to represent, performance and appropriateness of the current Contributors, and analysis of other potential Contributors.
- The aim of the review will be to ensure that the Benchmark is still representative of the underlying market, that the Contributors are the optimum grouping to provide Contributions to represent the underlying interest, and that the current Contributors have been submitting in an accurate and timely manner. The Independent Oversight Committee will provide input into the review.

2.7 REVIEW OF THE METHODOLOGY

- The Administrator will conduct a review of the Methodology at least annually.
- The independent Oversight Committee will at least annually review the Methodology and ensure it remains optimal, and reflective of all relevant regulation and guidance.

2.8 EXERCISE OF EXPERT JUDGMENT BY THE ADMINISTRATOR

- The Administrator will not exercise Expert Judgement.

2.9 CHANGES TO THE METHODOLOGY

- Methodology changes suggested by the Administrator will be presented for review by the independent Oversight Committee.
- Except in cases of force majeure, the Administrator expects to consult with Stakeholders in relation to material methodology changes. This consultation will be, in the first instance, with the independent Oversight Committee.

2.10 IDENTIFICATION OF POTENTIAL LIMITATIONS OF THE BENCHMARK

- The ability of Contributors to provide Contributions relies on there being a liquid market in overnight repo transactions in the Canadian market. If any on-going constraint or fragmentation to liquidity in this market is identified or foreseen, the Administrator will consult with Stakeholders as well as the independent Oversight Committee. As a matter of general policy, the Administrator believes that Contributions representing a significant share of transaction volume in the Canadian overnight repo market are needed with respect to determination of the Benchmark.

2.11 ENQUIRIES REGARDING THE METHODOLOGY

- Please address any enquiries regarding the CORRA Methodology to:
CDOR_CORRA@thomsonreuters.com

3 DEFINITION OF KEY TERMS

- Capitalized terms used in this document but not otherwise defined are defined in the following table. Definitions are sourced from IOSCO Principles for Financial Benchmarks¹

GLOSSARY OF DEFINED TERMS & ACRONYMS	
TERM	DEFINITION
Administration	Includes all stages and processes involved in the production and dissemination of a Benchmark, including: a) Collecting, analysing and/or processing information or expressions of opinion for the purposes of the determination of a Benchmark; b) Determining a Benchmark through the application of a formula or another method of calculating the information or expressions of opinions provided for that purpose; and c) Dissemination to users, including any review, adjustment and modification to this process.
Administrator	An organisation or legal person that controls the creation and operation of the Benchmark Administration process, whether or not it owns the intellectual property relating to the Benchmark. In particular, it has responsibility for all stages of the Benchmark Administration process, including: a) The calculation of the Benchmark; b) Determining and applying the Benchmark Methodology; and c) Disseminating the Benchmark.
Benchmark	Prices, estimates, rates, indices or values that are: a) Made available to users, whether free of charge or for payment; b) Calculated periodically, entirely or partially by the application of a formula or another method of calculation to, or an assessment of, the value of one or more underlying Interests; c) Used for reference for purposes that include one or more of the following: • determining the interest payable, or other sums due, under loan agreements or under other financial contracts or instruments; • determining the price at which a financial instrument may be bought or sold or traded or redeemed, or the value of a financial instrument; and/or • measuring the performance of a financial instrument. For purposes of this methodology document, any reference to the term "Benchmark" shall be a reference to CORRA.
Calculation Agent	A legal entity with delegated responsibility for determining a Benchmark through the application of a formula or other method of calculating the information or expressions of opinions provided for that purpose, in accordance with the Methodology set out by the Administrator.
Contribution(s)	Data provided by a Contributor to an Administrator or Calculation Agent for the purposes of determining a Benchmark.
Contributor	A legal person providing information to an Administrator or Calculation Agent required in connection with the determination of a Benchmark.
Expert Judgment	Refers to the exercise of discretion by an Administrator or Contributor with respect to the use of data in determining a Benchmark. Expert Judgment includes extrapolating values from prior or related transactions, adjusting values for factors that might influence the quality of data such as market events or impairment of a buyer or seller's credit quality, or weighting firm bids or offers greater than a particular concluded transaction.
Market Participants	Legal entities involved in the production, structuring, use or trading of financial contracts or financial instruments used to inform the Benchmark, or which reference the Benchmark.
Methodology	The written rules and procedures according to which information is collected and the Benchmark is determined.
Publish or Make Available	Refers to the expectation that a party such as an Administrator should provide a document or notice to Stakeholders. The means by which such notice is made should be proportionate to the breadth and depth of Benchmark use by Stakeholders, as determined by the Administrator on a "best efforts" basis. Ordinarily, posting a document or notice on the Administrator's website will meet this expectation.
Stakeholder	Refers to Subscribers and other persons or entities who own contracts or financial instruments that reference a Benchmark.
Subscriber	A person or entity that purchases Benchmark determination services from an Administrator.

¹ <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD415.pdf>