

THOMSON REUTERS

Methodology

Canadian Dollar Offered Rate (CDOR)

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CONTENTS

1	- Introduction	3
2	- Methodology Overview	4
3	- Definition of Key Terms	9

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1 - Introduction

1.1 CDOR Overview

- The Canadian Dollar Offered Rate (“CDOR”) was originally developed to establish a daily benchmark reference rate for bankers acceptance borrowings (“BAs”) since it allowed an average rate to be determined for the market without the need of each borrower to contact individual institutions.
- CDOR is the recognized benchmark index for BAs with a term to maturity of one year or less.

1.2 Purpose of Document

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

1.3 Intended Readership

- This document is intended for Stakeholders of the Benchmark.

1.4 Document Publication

- This document will be Published on a Thomson Reuters public website 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

2.1 Overview

- CDOR is determined daily from a survey of bid-side rates provided by Canadian financial institutions that routinely accept BAs issued by borrowers and are market-makers in BAs either directly or through an affiliate (“the Submitters”).
- CDOR is calculated as the arithmetic average of the rates submitted by each Submitter for primary BA market issuances prior to 10:15 am Eastern Time (“ET”) on each Business Day with terms of maturity of approximately 1, 2, 3, 6 and 12 months after removing the highest and lowest Submissions.
- The rates submitted to the Calculation Agent by each Submitter represent the rate at which the Submitter would be willing to lend (offer) funds against primary BA market issuances to clients with existing credit facilities that reference CDOR plus a fee.

2.2 Panel

As of the Effective Date of this document, the Submitters are:

- Bank of Montreal
- The Bank of Nova Scotia
- Canadian Imperial Bank of Commerce
- National Bank of Canada
- Royal Bank of Canada
- The Toronto-Dominion Bank

This list may be updated from time to time. Changes to Submitters are available on request from Thomson Reuters Customer Zone: <https://customers.reuters.com/crmcontactus/support.asp>

2.3 Procedures and Publication Time

- Submitters must submit their rates between 9:40 am and 10:14:59 am ET.
- Submitters can make changes to their Submissions as many times as required up until 10:14:59 am ET. Any new Submission will overwrite the previous Submission.
- Submissions or changes after 10:14:59 am ET will be not be included in the Benchmark calculation and excluded from compilation of the final results.
- Submissions must be numeric and to no more than 3 decimal places.
- At 10:15 am ET the Submissions for each maturity will be ranked and the highest and lowest discarded.
- If one or more of the highest Submissions are identical values, one will be selected at random and the other(s) discarded.



- If one or more of the lowest Submissions are identical values, one will be selected at random and the other(s) discarded.
- An arithmetic mean to 5 decimal places will be calculated of the remaining Submissions.
- The Benchmark will be published at 10:15 am ET each Business Day, subject to any delay as set forth 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.

2.4 Delayed Release

- In the event *one* or *more* Submitter(s) does not make its Submission available to the Administrator before the 10:14:59 am ET closing of the submission window, the Administrator will use reasonable efforts to contact the Submitter(s), as well as to enable the completion of the Submission through alternative means if the standard submission process is experiencing an operational failure.
- The Administrator may, at its discretion, delay publication of the Benchmark up until 11:00 am ET at the latest, if technical difficulties are impacting the submission process, or if any such delay is required to allow a Submitter to correct an error made in its Submission, provided the Administrator is notified at least fifteen minutes prior to publication time.
- The Administrator retains the right to amend the rate after publication if, before 11:00am ET, it becomes apparent that an error materially impacts the previously calculated rate. In this event, the rate will be re-fixed with best efforts before 12:00 pm ET, consistent with the Refix Policy as noted in Section 2.11.
- In extraordinary circumstances, the publication of a benchmark may be delayed until 12:00 pm ET. This should only occur following the unusual circumstance when *one* or *zero* Submitters contribute a rate, in which case the Administrator will delay the fix until 12:00 pm ET. Refer to Section 2.10 for further detail.
- 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.

2.5 Review of the Benchmark and Submitters

- 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 Submitters, and analysis of other potential submitters.
- The aim of the review will be to ensure that the Benchmark is still representative of the underlying market, that the Submitters are the optimum grouping to provide Submissions to represent the underlying interest, and that the current Submitters have been submitting in an accurate and timely manner. The Independent Oversight Committee will provide input into the review.

2.6 Submitter Eligibility

The universe of Submitters eligible for consideration for inclusion in the Benchmark will be banks that are:

- Active in the primary BA issuance market in Canada. Active means accounting for 1% or more of the BA issuance market.
- Willing to accept and implement the CDOR Submitter Code of Conduct, a copy of which is available at <https://financial.thomsonreuters.com/content/dam/openweb/documents/pdf/financial/cdor-submitter-code-of-conduct.pdf>.
- Willing to agree to regulation by relevant authorities in Canada, should the Benchmark become regulated.



2.7 Review of the Methodology

- The Administrator will at least annually conduct a review of the Methodology.
- 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 Judgment.

2.9 Hierarchy of Data Sources to be Used by Submitters

The hierarchy of data sources is as follows:

- The Submission submitted for each maturity band by the Submitter shall be anchored in the following Bona Fide Arm's-Length Transactions:
 - (i) Primary BA market issuances; and
 - (ii) Secondary BA market transactions,
- If any, completed after the publication of CDOR on the prior Business Day but prior to the submission of the Submission in respect of such maturity band.
- The Submission submitted shall also reflect the adjustments made by the Submitter, if any, upon the consideration of market data and other Expert Judgment.
- If the Submitter did not complete any Bona Fide Arm's-Length primary BA market issuances or secondary BA market transactions after the publication of CDOR on the prior Business Day but prior to the submission of the Submission for the applicable maturity band, the primary BA market issuances or secondary BA market transactions on the most recent Business Day will be considered by the Submitter but there will be a greater emphasis on market data and other Expert Judgment.
- Expert Judgment shall be free from any undue or improper influence and shall not, for greater certainty, take into consideration any factors that would be contrary to the "Improper Market Conduct" or "Conflicts of Interest" provisions of the CDOR Submitter Code of Conduct, such as the consideration of swap resets that are linked to CDOR or with knowledge of any Submission that may be submitted by another Submitter to the Calculation Agent prior to the publication of CDOR.
- The Submitter shall determine to what extent, if any, a Submission should be subject to a review prior to its submission to the Calculation Agent in addition to the post-submission review required under the "Oversight" provisions of the CDOR Submitter Code of Conduct.

2.10 Minimum Number of Submissions Needed

- If *five or more* Submissions are received, the Submissions will be ranked, the highest and lowest discarded and remaining rates averaged to calculate the benchmark.
- If *more than one but fewer than five* Submissions are received (i.e. two, three, or four rates are received), CDOR will be calculated using the average of all received Submissions – the highest and lowest rates will not be excluded from the calculation.
- The received Submissions will be published at 10:15 am ET.



- If *only one* submission is received by 10:14:59 am ET, the Administrator will extend the submission window to 12:00 pm ET and will use reasonable efforts to contact all Submitters to encourage additional rates. If no additional rates have been submitted by 12:00 pm ET, this one rate will stand alone as the CDOR benchmark for the day.
- In such an event that *zero* Submissions are received by 12:00 pm ET, the Administrator will re-publish the previous day's published rate for all tenors. The historical rate will be used until a date when one or more submissions are received.
- In the event CDOR is calculated using *less than five* submissions, the Administrator will initiate its standard process for alerting market participants, which includes publishing an alert on the FIXALERT page.

Number of Contributors	Summary Calculation Methodology	Notes
5-7	Submissions for each maturity will be ranked, with the highest and lowest discarded. An arithmetic mean to 5 decimal places will be calculated of the remaining Submissions.	Refer to Section 2.4 (Delayed Release), 2.10 (Minimum Number of Submissions Needed), & 2.11 (Refix Policy) for protocols for unusual circumstances.
2-4	An arithmetic mean to 5 decimal places will be calculated from all received Submissions.	
1	This one rate will stand alone as the CDOR benchmark for the day	
0	Administrator will re-publish the previous day's published rate for all tenors. The historical rate will be used until a date when one or more submissions are received.	

2.11 Refix Policy

- CDOR will not be refixed if a Submitter identifies an error to its Submission after the publication time of 10:15 am ET, if that error has no material effect on the final calculated benchmark.
- Any material error in the calculation of the Benchmark, which is identified by the Administrator after the publication time but before 11:00 am ET, will result in an intraday refix. The Administrator will publish an alert on the FIXALERT page, and issue a full alert via email, to alert market participants of the refix, and will use reasonable efforts to publish the refixed rate by 12:00 pm ET on that day.
- A material error is one that results in a net change equal to or greater than + or – 0.02%, that is, two basis points, to the original published rate. A non-material error identified by the Administrator in the calculation of the Benchmark after the publication time will not result in an intraday refix.
- Errors that do not result in an intraday refix will be reported quarterly to the Independent Oversight Committee and published on the Administrator's public website.

2.12 Changes to the Methodology

- Methodology changes 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.



2.13 Rationale for the Methodology

- The Methodology is reflective of best practice across the industry for the calculation and Administration of Benchmarks that seek to represent the behaviour of markets showing similar characteristics as the Canadian BA market.

2.14 Identification of Potential Limitations of the Benchmark

- The ability of Submitters to provide accurate Submissions relies on there being a liquid market in BAs in the Canadian market. If any ongoing 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.

2.15 Enquiries Regarding the Methodology

- Please address any enquiries regarding the CDOR 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.
Arm's-length Transaction	A transaction between two parties that is concluded on terms that are not influenced by a conflict of interest (e.g., conflicts of interest that arise from a relationship such as a transaction between affiliates).
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 CDOR.
Bona Fide	Refers to data where the parties submitting the data have executed, or are prepared to execute, transactions generating such data and the concluded transactions were executed at Arm's-length from each other.
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.
Expert Judgment	Refers to the exercise of discretion by an Administrator or Submitter 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.
Panel	Subset of Market Participants who are Benchmark Submitters.
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.
Regulated Authority	A governmental or statutory body (not being a Self-Regulatory Organisation) with responsibility for securities and/or commodities and futures regulation.
Regulated Market or Exchange	A market or exchange that is regulated and/or supervised by a Regulatory Authority.
Self-Regulatory Organisation or "SRO"	An organisation that has been given the power or responsibility to regulate itself, whose rules are subject to meaningful sanctions regarding any part of the securities market or industry. This authority may be derived from a statutory delegation of power to a non-governmental entity or through a contract between an SRO and its members as is authorized or recognized by the governmental regulator.
Stakeholder	Refers to Subscribers and other persons or entities who own contracts or financial instruments that reference a Benchmark.
Submission(s)	Prices, estimates, values, rates or other information that is provided by a Submitter to an Administrator for the purposes of determining a Benchmark. This excludes data sourced from Regulated Markets or Exchanges with mandatory post-trade transparency requirements.
Submitter	A legal person providing information to an Administrator or Calculation Agent required in connection with the determination of 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>

