

CDOR NHA MBS and CDOR CMB Transition

Agenda

CDOR CMB Transition

- *Fallback Rate (CORRA)* will replace 3-Month CDOR in five series of CDOR CMB starting September 15, 2024.
- Two illustrative examples on obtaining *Fallback Rate (CORRA)* from Bloomberg
 - Example 1 – *Fallback Rate (CORRA)* is published on Fallback Observation Day
 - Example 2 – *Fallback Rate (CORRA)* is NOT published on Fallback Observation Day

CDOR NHA MBS Transition

- *One-Month Daily Compounded CORRA* plus 0.29547% will replace 1-Month CDOR in approximately 1,700 CDOR NHA MBS after July 1, 2024.
- Example on calculating the replacement rate for 1-Month CDOR

Key Takeaways

- The fallback rate calculation methodologies for CDOR are **different** between two programs.
- For some CMB coupons the *expected* Original IBOR Rate Record Date may not fall on the *actual* IBOR Rate Record Date used to calculate the coupon – see illustrative example 2.

CDOR CMB Transition

Five series of CDOR CMB will be affected by CDOR Cessation.

Fallback Rate (CORRA) published by Bloomberg will replace the 3-Month CDOR after CDOR Cessation:

- For the interest period from June 15, 2024, to September 14, 2024, because the 3-month CDOR for June 15, 2024, will still be published by Refinitiv, the coupon calculation will not be affected by CDOR cessation.
- From the interest period starting September 15, 2024, 3-month CDOR will be replaced by *Fallback Rate (CORRA)* as the first alternative reference rate in the CARR Recommended Fallback used to calculate the coupon.

Please see [Update on CDOR CMB at cmhc-schl.gc.ca](https://cmhc-schl.gc.ca) for more details.

Five Series of CDOR CMB Affected by CDOR Cessation

Issue	Settlement Date of Original Issue	Coupon	Maturity Date	Outstanding as of November 15, 2023 (\$ millions)	CUSIP/ISIN
Series 91	November 26, 2019	3m CDOR -0.04%	March 15, 2025	4,250	13509PHL0
Series 94	June 25, 2020	3m CDOR -0.035%	September 15, 2025	2,000	13509PHP1
Series 96	November 25, 2020	3M CDOR -0.155%	March 15, 2026	3,000	13509PHR7
Series 99	May 27, 2021	3m CDOR -0.17%	September 15, 2026	2,250	13509PHV8
Series 103	November 24, 2021	3m CDOR -0.18%	March 15, 2027	2,000	13509PHY2

Please note Series 89 which will mature on September 15, 2024, is not affected by CDOR Cessation since the 3-Month CDOR for June 15, 2024, will still be published.

CMB Future Interest Periods From September 2024 to March 2027

Interest Payment Date	Fallback Observation Day	IBOR Rate Record Day Expected	IBOR Rate Record Day Actual	Fallback Observation Period		Observation Day Shift
				Start Date	End Date	
December-16-24	December-12-24	September-16-24	September-16-24	September-12-24	December-12-24	-2
March-17-25	March-13-25	December-16-24	December-16-24	December-12-24	March-12-25	-2
June-16-25	June-12-25	March-17-25	March-14-25	March-12-25	June-12-25	-3
September-15-25	September-11-25	June-16-25	June-13-25	June-11-25	September-11-25	-3
December-15-25	December-11-25	September-15-25	September-15-25	September-11-25	December-11-25	-2
March-16-26	March-12-26	December-15-25	December-15-25	December-11-25	March-11-26	-2
June-15-26	June-11-26	March-16-26	March-13-26	March-11-26	June-11-26	-3
September-15-26	September-11-26	June-15-26	June-15-26	June-11-26	September-11-26	-2
December-15-26	December-11-26	September-15-26	September-15-26	September-11-26	December-11-26	-2
March-15-27	March-11-27	December-15-26	December-15-26	December-11-26	March-11-27	-2

Among 10 remaining CDOR CMB interest periods,

- 7 times the *Fallback Rate (CORRA)* is published on Observation Day. Example 1 will cover this common situation.
- 3 times the *Fallback Rate (CORRA)* is not published on Observation Day. Example 2 will cover this rare situation.

We share two examples in case other CDOR FRNs face the similar situations.

Fallback Rate (CORRA) for CDOR CMB – Illustrated Example 1

- Since CDOR CMB coupon payment dates are in March, June, September and December of each year, we use the latest payment date of March 15, 2024, to *illustrate* the procedure of obtaining *Fallback Rate (CORRA)* from Bloomberg, should CDOR have ceased to be published before this coupon calculation.
- For the interest payment day of March 15, 2024, the interest rate period is between December 15, 2023, and March 14, 2024. The fallback rate for 3-Month CDOR (i.e. *Fallback Rate (CORRA)*) as of December 15, 2023, should be used to calculate coupon rate.
- Next several slides will show how to get the *Fallback Rate (CORRA)* for December 15, 2023 as if the CDOR cessation had happened:
 1. Determine the Fallback Observation Day.
 2. Determine the Original IBOR Rate Record Day.
 3. Determine the *Fallback Rate (CORRA)* by using FBAK <GO> screen on Bloomberg.

Fallback Rate (CORRA) for CDOR CMB – Illustrated Example 1

1. Determine the Fallback Observation Day

(vi) *“Fallback Observation Day”* means, in respect of a Reset Date and the relevant Interest Period to which that Reset Date relates, the day that is two business days preceding the related interest payment date.

➤ Since March 15, 2024, is the interest payment date, March 13, 2024, is the Fallback Observation Day.

2. Determine the Original IBOR Rate Record Day

➤ Since 3-Month CDOR as of December 15, 2023, is used to calculate the coupon rate, December 15, 2023, is the Original IBOR Rate Record Day.

Fallback Rate (CORRA) for CDOR CMB – Illustrated Example 1

3. Determine the Fallback Rate (CORRA) by using FBAK <GO> screen on Bloomberg

3.1 On FBAK screen, choose CAD CDOR under Official ISDA Fallback Rates section

The screenshot displays the Bloomberg FBAK screen for Official ISDA Fallback Rates. The interface includes the ISDA logo (Safe, Efficient Markets) and the Bloomberg logo. Text on the screen states: "Official ISDA IBOR Fallback Rates, calculated by Bloomberg Index Services Limited. Use of the fallback rates are subject to fees." It also provides information on methodology and usage terms. A list of 21 fallback rate options is shown, with "CAD CDOR" (option 3) highlighted in blue and indicated by a red arrow. The list includes options for AUD, CHF, DKK, EUR, GBP, HKD, ILS, JPY, MYR, NOK, NZD, PLN, SEK, and USD.

Option	Rate Name
1)	Official ISDA Fallback Rates
2)	AUD BBSW
3)	CAD CDOR
4)	CHF LIBOR
5)	DKK CIBOR
6)	EUR EURIBOR
7)	EUR LIBOR
8)	GBP LIBOR
9)	HKD HIBOR
10)	ILS TELBOR
11)	JPY Euroyen TIBOR
12)	JPY LIBOR
13)	JPY TIBOR
14)	MYR KLIBOR
15)	NOK NIBOR
16)	NZD BKBM BID
17)	NZD BKBM FRA
18)	PLN WIBOR
19)	SEK STIBOR
20)	SGD SOR (MRR)
21)	USD LIBOR

Fallback Rate (CORRA) for CDOR CMB – Illustrated Example 1

3. Determine the Fallback Rate (CORRA) by using FBAK <GO> screen on Bloomberg

(viii) **“Fallback Rate (CORRA) Screen”** means the Bloomberg Screen corresponding to the Bloomberg ticker for the fallback for 3 Month CDOR for a relevant Interest Period accessed via the Bloomberg Screen <FBAK> <GO> Page (or, if applicable, accessed via the Bloomberg Screen <HP><GO>) or any other published source designated by Bloomberg Index Services Limited (or a successor provider as approved and/or appointed by ISDA from time to time);

3.2 On next screen, choose the Fallback Rate for Tenor of 3M, Calculation Date of 03/13/2024 and Original IBOR Rate Record Day of 12/15/23

Tenor	Calculation Date	Original IBOR Rate Record Day	Fallback Rate
1) 1M	03/22/24	02/26/24	5.31517
2) 2M	03/22/24	01/24/24	5.35058
3) 3M	03/22/24	12/28/23	5.38642
4) 6M	03/22/24	09/20/23	5.38823
5) 1Y	03/22/24	03/24/23	5.55515

➤ Because above screenshot was taken on March 22, 2024, the Fallback Rate (CORRA) for December 15, 2023, cannot be found. We will use <HP><GO> Screen.

Fallback Rate (CORRA) for CDOR CMB – Illustrated Example 1

3. Determine the *Fallback Rate (CORRA)* by using FBAK <GO> screen on Bloomberg

(viii) “*Fallback Rate (CORRA) Screen*” means the Bloomberg Screen corresponding to the Bloomberg ticker for the fallback for 3 Month CDOR for a relevant Interest Period accessed via the Bloomberg Screen <FBAK> <GO> Page (or, if applicable, accessed via the Bloomberg Screen <HP><GO>) or any other published source designated by Bloomberg Index Services Limited (or a successor provider as approved and/or appointed by ISDA from time to time);

3.3 On <HP><GO> Screen, please ensure it shows VCDOR03M (Green Box).

Choose the Fallback Rate for Calc Date of 03/13/2024 and Original IBOR Rate Record Day of 12/15/23 (Red Box)

5.38909 should be used as *Fallback Rate (CORRA)* for December 15, 2023, to calculate the coupon rate.

VCDOR03M 5.38642 As Of 12/28/23						
Fallback for Canada Bankers Acceptances 3 Month						
Export						
Fallback for Canada Bankers Acceptances 3 Month						
Range	12/28/2022	-	12/28/2023	Period	Daily	High
Market	Calc Date		Last Price	Currency	CAD	Average
View	Price Table					Net Chg
	Date	Calc Date	Last Price	Date	Calc Date	Last
Fr	12/29/23			Fr	12/08/23	03/06/24 5.3
Th	12/28/23	03/22/24	5.38642	Th	12/07/23	03/05/24 5.3
We	12/27/23	03/21/24	5.38664	We	12/06/23	03/04/24 5.3
Tu	12/26/23	03/21/24	5.38664	Tu	12/05/23	03/01/24 5.3
Mo	12/25/23	03/21/24	5.38664	Mo	12/04/23	02/29/24 5.3
Fr	12/22/23	03/20/24	5.38697	Fr	12/01/23	02/29/24 5.3
Th	12/21/23	03/19/24	5.38719	Th	11/30/23	02/28/24 5.3
We	12/20/23	03/18/24	5.38753	We	11/29/23	02/27/24 5.3
Tu	12/19/23	03/15/24	5.38853	Tu	11/28/23	02/26/24 5.3
Mo	12/18/23	03/14/24	5.38886	Mo	11/27/23	02/23/24 5.3
Fr	12/15/23	03/13/24	5.38909	Fr	11/24/23	02/22/24 5.3
Th	12/14/23	03/12/24	5.38942	Th	11/23/23	02/21/24 5.3
We	12/13/23	03/11/24	5.38964	We	11/22/23	02/20/24 5.3
Tu	12/12/23	03/08/24	5.39031	Tu	11/21/23	02/20/24 5.3
Mo	12/11/23	03/07/24	5.39053	Mo	11/20/23	02/16/24 5.3

Fallback Rate (CORRA) for CDOR CMB – Illustrated Example 2

- Example 2 shows the rare situation where the *Fallback Rate (CORRA)* for the Original IBOR Rate Record Day is NOT available on Fallback Observation Day.
 - A hypothetical CMB, for illustrative purposes, with
 - Payment Date of January 15, 2024
 - Observation Day (Calculation Date) of January 11, 2024
 - Original IBOR Rate Record Day of October 15, 2023
 - FBAK Page on Bloomberg shows:
 - **Fallback Rate for 3M CDOR as of Oct 15, 2023, is not published on Observation Day.**
 - The first prior published Fallback Rate for 3M CDOR is as of Oct 13, 2023 5.38860).

January 2024						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
7	8	9	10	11 Obs Date	12	13
14	15 Coupon Payment Date	16	17	18	19	20

97) Settings ▾		98) Output ▾		200) Show in Launchpad		Page 1/1 ISDA Fallback Rates	
AUD BBSW		CAD CDOR		CHF LIBOR		DKK CIBOR	
EUR EURIBOR		EUR LIBOR		GBP LIBOR		HKD HIBOR	
ILS TELBOR		JPY Euroyen TIBOR		JPY LIBOR		JPY T...	
ISDA		CAD CDOR		60 MSG Contributor		15:36:42	
ISDA Fallback Rates -> Official ISDA Fallback Rates -> CAD CDOR		Zoom - + 100%					
Tenor	Calculation Date	Original IBOR Rate Record Day	Fallback Rate				
1) 1M	01/11/24	12/13/23	5.34705				
2) 2M	01/10/24	11/15/23	5.35758				
3) 3M	01/11/24	10/13/23	5.38860				
4) 6M	01/11/24	07/13/23	5.57488				
5) 1Y	01/11/24	01/13/23	5.43734				

Fallback Rate (CORRA) for CDOR CMB – Illustrated Example 2

- In this case, 5.38860, which is the Fallback Rate for 3M CDOR as of Oct 13, 2023, should be used as *Fallback Rate (CORRA)* based on the following clause.

(ii) ***Index Cessation Effective Date with respect to 3 Month CDOR.*** Upon the occurrence of an Index Cessation Event, the rate for a Reset Date occurring on or after the Index Cessation Effective Date will be determined as if references to 3 Month CDOR were references to Fallback Rate (CORRA) for the 'Original IBOR Rate Record Day' that corresponds to the Reset Date, as most recently provided or published as at 11:30 a.m., Toronto time on the related Fallback Observation Day. If neither Bloomberg Index Services Limited (or a successor provider as approved and/or appointed by ISDA from time to time) provides, nor authorized distributors publish, Fallback Rate (CORRA) for that 'Original IBOR Rate Record Day' at, or prior to, 11:30 a.m., Toronto time on the related Fallback Observation Day and a Fallback Index Cessation Effective Date with respect to Fallback Rate (CORRA) has not occurred, then the rate for that Reset Date will be Fallback Rate (CORRA) as most recently provided or published at that time for the most recent 'Original IBOR Rate Record Day', notwithstanding that such day does not correspond to the Reset Date.

- Such situation happens far less often for CDOR CMB compared to CDOR NHA MBS since NHA MBS is a monthly payment instrument and interest period starts on the 1st calendar day of each month. Therefore, CDOR CMB and CDOR NHA MBS use **different** fallback rate methodologies.

CDOR NHA MBS Transition

Three Categories of CDOR NHA MBS (Pool Type 880, 980, 885, 985):

- I. CDOR pools that have already incorporated the CARR Recommended CDOR Fallback Provisions in CMHC 2834 (mainly pools issued on or after September 1, 2022).
- II. CDOR pools that have the interim CDOR Fallback Language in CMHC 2834 (mainly the pools issued between November 1, 2020, and August 1, 2022).
- III. CDOR pools that have no CDOR Fallback Language in CMHC 2834 (Legacy CDOR Pools). (those pools issued prior to November 1, 2020).

[NHA MBS Advice No. 20](#) provides direction on applicable fallback provision for CDOR pools in Category I & II:

- One-Month Daily Compounded CORRA plus the one-month CDOR to CORRA spread adjustment of 0.29547% replaces CDOR after CDOR cessation
- This is consistent with recommendation by CARR and the MBSIA
- **Fallback Rate (CORRA) is no longer applicable for CDOR NHA MBS**
- One-Month Daily Compounded CORRA is also used in CORRA NHA MBS (Pool Type 881, 981, 886, 986)

NHA MBS Advice No. 20 – Operation Implication

Reporting Requirements in CMHC 2840 - Issuer's Monthly Accounting Report after July 1, 2024

- Coupon Base Rate (9D) will be reported as One-Month Daily Compounded CORRA + 0.29547% in lieu of one-month CDOR after CDOR cessation.
- Annual Coupon (3H) will be reported as One-Month Daily Compounded CORRA + 0.29547% + constant spread to CDOR.



No need to modify the existing CMHC 2834 for CDOR pools in category I & II.

Legacy CDOR Pools

- **For the investors who own Legacy CDOR Pools (CDOR pools in category III), please reach out to issuers so that proper steps can be taken to insert the proper fallback language into CMHC 2834.**

CDOR NHA MBS Transition – Illustrated Example

Use February 2024 NHA MBS coupon period as an example:

- One-Month Daily Compounded CORRA definition is shown on right side. 
- Result from Bank of Canada's Calculator is shown below. 

One-Month Daily Compounded CORRA:

For an Observation Period will be calculated as follows, with the resulting percentage rounded if necessary to the fifth decimal place, with 0.000005% being rounded upwards:

$$\text{One - Month Daily Compounded CORRA} = \left(\frac{\text{CORRA Compounded Index}_{\text{end}}}{\text{CORRA Compounded Index}_{\text{start}}} - 1 \right) \times \left(\frac{365}{d} \right)$$

Calculator

Obtain the Daily Compounded CORRA rate (%) for a selected observation period. This rate can be used to calculate the interest amount for a security, such as a floating rate note or for a loan, a derivative or a financial contract that references CORRA. See the [methodology](#) and recommended [conventions](#) for details.

Start date	End date
2024-01-30 Two Business Days before February 1st	2024-02-28 Two Business Days before March 1st
Compounded rate (%)	
5.04628 One-Month Daily Compounded CORRA for February 2024	

Where:

- *CORRA Compounded Index_{start} = CORRA Compounded Index value on the date two Bank of Canada Business Days preceding the first date of the relevant Interest Period.*
- *CORRA Compounded Index_{end} = CORRA Compounded Index value on the date two Bank of Canada Business Days preceding the first calendar date of the month following the relevant Interest Period.*
- *"d" is the number of calendar days in the relevant Observation Period.*

- 5.04628 is the One-Month Daily Compounded CORRA for February 2024.
- 5.04628 is the Coupon Base Rate for **CORRA** NHA MBS.
- 5.34175 is the fallback rate for 1-Month CDOR for February 2024 after adding 0.29547 to 5.04628.
- 5.34175 is the Coupon Base Rate for **CDOR** NHA MBS.

To Recap:

- Fallback rate calculation methodologies are **different** between NHA MBS and CMB programs.
 - CDOR CMB:
 - ✓ Fallback Rate (CORRA) published by Bloomberg will replace 3-Month CDOR from the interest period starting September 15, 2024.
 - CDOR NHA MBS:
 - ✓ One-Month Daily Compounded CORRA plus 0.29547% will replace 1-Month CDOR after July 1, 2024.
 - ✓ Fallback Rate (CORRA) is no longer applicable for CDOR NHA MBS.
- The slides illustrate the way to obtain Fallback Rate (CORRA) for CDOR CMB from Bloomberg

Please see [NHA MBS Advice No. 20](#) and [Update on CDOR CMB at cmhc-schl.gc.ca](https://cmhc-schl.gc.ca) for more details.

Appendix: Example shows it is quite common Fallback Rate (CORRA) may NOT be published on Fallback Observation Day for CDOR NHA MBS

If Fallback Rate (CORRA) were used for CDOR NHA MBS, 5.34584 were Coupon Base Rate for February 2024

The screenshot shows a financial data table for VCDOR01M. The table displays historical prices for the instrument. The current price is 5.31517 as of 02/26/24. The table includes columns for Date, Calc Date, Last Price, and Net Chg. A row for 02/01/24 is highlighted in yellow, showing a price of 5.34087. A row for 01/30/24 is highlighted in red, showing a price of 5.34584.

Date	Calc Date	Last Price	Date	Calc Date	Last Price	Date	Calc Date	Last Price
Fr 03/01/24			Fr 02/09/24	03/07/24	5.32963	Fr 01/19/24	02/20/24	5.35310
Th 02/29/24			Th 02/08/24	03/06/24	5.33102	Th 01/18/24	02/16/24	5.35310
We 02/28/24			We 02/07/24	03/05/24	5.33240	We 01/17/24	02/15/24	5.35343
Tu 02/27/24			Tu 02/06/24	03/04/24	5.33580	Tu 01/16/24	02/12/24	5.35433
Mo 02/26/24	03/22/24	5.31517	Mo 02/05/24	03/01/24	5.33794	Mo 01/15/24	02/12/24	5.35410
Fr 02/23/24	03/21/24	5.31552	Fr 02/02/24	02/29/24	5.34002	Fr 01/12/24	02/12/24	5.35391
Th 02/22/24	03/20/24	5.31655	Th 02/01/24	02/29/24	5.34087	Th 01/11/24	02/09/24	5.35343
We 02/21/24	03/18/24	5.32058	We 01/31/24	02/29/24	5.34170	We 01/10/24	02/08/24	5.35310
Tu 02/20/24	03/15/24	5.32133	Tu 01/30/24	02/26/24	5.34584	Tu 01/09/24	02/05/24	5.35239
Mo 02/19/24	03/15/24	5.32133	Mo 01/29/24	02/26/24	5.34651	Mo 01/08/24	02/05/24	5.35253
Fr 02/16/24	03/14/24	5.32237	Fr 01/26/24	02/26/24	5.34715	Fr 01/05/24	02/05/24	5.35300
Th 02/15/24	03/13/24	5.32340	Th 01/25/24	02/23/24	5.34980	Th 01/04/24	02/02/24	5.35213
We 02/14/24	03/12/24	5.32444	We 01/24/24	02/22/24	5.35109	We 01/03/24	01/29/24	5.35264
Tu 02/13/24	03/11/24	5.32738	Tu 01/23/24	02/20/24	5.35247	Tu 01/02/24	01/29/24	5.35310
Mo 02/12/24	03/08/24	5.32860	Mo 01/22/24	02/20/24	5.35263	Mo 01/01/24	01/29/24	5.35310

This is because:

- Fallback Rate (CORRA) for February 1, 2024, was published on February 29, 2024 (yellow box).
- No new Fallback Rate (CORRA) was published on February 28, 2024.
- On February 28, 2024, the FBAK <GO> screen shows Fallback Rate (CORRA) of 5.34584 for Tenor of 1M, Calculation Date of 02/26/2024 and Original IBOR Rate Record Day of 01/30/24.