

Overview of methodology for CORRA compounded-in-arrears

CORRA is based on transactions initiated the day of, and published on the following business day. To use CORRA in financial instruments such as loans or bonds, where interest is calculated over a longer period of time, CORRA's daily values are compounded. This compounding of CORRA's daily values is referred to as "compounding in arrears". If different sides of a contract make different mathematical assumptions when compounding in arrears, they could produce different results, leading to a conflict about how much is owed.

Since it is valuable to have a consistent calculation methodology across financial products, CARR has developed this methodology and recommends its use.

These definitions are aligned with ISDA's [methodology](#) for compounding overnight rates in swap contracts. They are broadly in line with the calculation methodologies used by the Montreal Exchange and those found in other relevant jurisdictions such as the US and the UK.

Compounding methodology

Interest only compounds on business days (that is days when Schedule I banks under the Bank Act (Canada) are open for business in Toronto, Ontario Canada (i.e. days when CORRA was published)), on an actual/365 (fixed) basis. The CORRA value published on the following business day will apply to weekends and holidays. In other words, the value of CORRA published on Monday (which reflects trades made on Friday) would be applicable to the previous Friday, Saturday and Sunday (reflecting the functioning of repo markets).

$$CORRA \text{ Compounded Average} = \left(\prod_{i=1}^{d_b} \left(1 + \frac{CORRA_i \times n_i}{365} \right) - 1 \right) \times \frac{365}{d_c}$$

Where:

- $CORRA_i$ = CORRA for business day i , which is published on business day $i+1$
- n_i = number of calendar days for which $CORRA_i$ is compounded
- d_c = number of calendar days in the calculation period
- d_b = number of business days in the calculation period
- i = series of ordinal numbers from 1 to the number of business days in the calculation period

Examples

Illustrative example of the compounding methodology:

CORRA publication date, valuation date for index	CORRA value date	CORRA	Calendar days applicable	Compounding methodology
Monday 9 Sep 2019	Friday 6 Sep 2019	N/A	N/A	1
Tuesday 10 Sep 2019	Monday 9 Sep 2019	a	1	$(1) (1+(a \times 1 / 365))$
Wednesday 11 Sep 2019	Tuesday 10 Sep 2019	b	1	$(1) (1+(a \times 1 / 365)) (1+(b \times 1 / 365))$
Thursday 12 Sep 2019	Wednesday 11 Sep 2019	c	1	$(1) (1+(a \times 1 / 365)) (1+(b \times 1 / 365)) (1+(c \times 1 / 365))$
Friday 13 Sep 2019	Thursday 12 Sep 2019	d	1	$(1) (1+(a \times 1 / 365)) (1+(b \times 1 / 365)) (1+(c \times 1 / 365)) (1+(d \times 1 / 365))$
Monday 16 Sep 2019	Friday 13 Sep 2019	e	3	$(1) (1+(a \times 1 / 365)) (1+(b \times 1 / 365)) (1+(c \times 1 / 365)) (1+(d \times 1 / 365)) (1+(e \times 3 / 365))$