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How to calculate the final settlement price of the OIS futures contract

The final settlement price of the OIS futures contract is the overnight repo rate (CORRA) compounded daily over the period of the OIS futures contract that begins the day following the last Bank of Canada's Fixed Announcement Date to the day of the next Fixed Announcement Date.

OIS are quoted on an index basis and the final settlement price is computed as: 100 – R

R is determined according with the following formula:

$$\mathbf{R} = \left[\prod_{i=1}^{d_0}\left(1+\frac{ORR_{\mathrm{i}} \times n_{\mathrm{i}}}{365}\right)-1\right] \times \frac{365}{d} \times 100$$

Where **R** = the compounded daily overnight repo rate (CORRA) for the contract month.

d_o = the number of Business Days in the calculation period.

i = is a series of whole numbers from one to d_o , each representing the relevant Business Day in chronological order from, and including, the first Business Day in the relevant Calculation Period.

ORR_i = the overnight repo rate (CORRA) on the i^{th} day of the calculation period (if the i^{th} day is not a business day, the previous available CORRA is used).

n_i = the number of calendar days in the relevant Calculation Period on which the rate is.

d = the number of calendar days in the relevant Calculation Period.

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Sample calculation of the final settlement price of the OIS futures contract

DATE	CORRA RATE (%)	CORRA RATE (DECIMAL)	ACCUMULATED DAYS	DAILY FACTOR (1+((C*D)/365))	DAILY CUMULATIVE COMPOUNDING
* 26-Oct-11	1.0098	0.010098	1	1.00002767	1.00002767
27-Oct-11	1.0296	0.010296	1	1.00002821	1.00005587
28-Oct-11	1.0167	0.010167	1	1.00002785	1.00008373
29-Oct-11	1.0167	0.010167	1	1.00002785	1.00011159
30-Oct-11	1.0167	0.010167	1	1.00002785	1.00013945
31-Oct-11	1.0000	0.010000	1	1.00002740	1.00016685
1-Nov-11	1.0120	0.010120	1	1.00002773	1.00019458
2-Nov-11	1.0096	0.010096	1	1.00002766	1.00022224
3-Nov-11	1.0031	0.010031	1	1.00002748	1.00024973
4-Nov-11	0.9987	0.009987	1	1.00002736	1.00027710
5-Nov-11	0.9987	0.009987	1	1.00002736	1.00030447
6-Nov-11	0.9987	0.009987	1	1.00002736	1.00033184
7-Nov-11	1.0017	0.010017	1	1.00002744	1.00035929
8-Nov-11	1.0000	0.010000	1	1.00002740	1.00038670
9-Nov-11	0.9959	0.009959	1	1.00002728	1.00041400
10-Nov-11	1.0036	0.010036	1	1.00002750	1.00044150
11-Nov-11	1.0036	0.010036	1	1.00002750	1.00046901
12-Nov-11	1.0036	0.010036	1	1.00002750	1.00049652
13-Nov-11	1.0036	0.010036	1	1.00002750	1.00052403
14-Nov-11	1.0092	0.010092	1	1.00002765	1.00055169
15-Nov-11	1.0079	0.010079	1	1.00002761	1.00057932
16-Nov-11	1.0032	0.010032	1	1.00002748	1.00060682
17-Nov-11	1.0149	0.010149	1	1.00002781	1.00063464
18-Nov-11	1.0032	0.010032	1	1.00002748	1.00066215
19-Nov-11	1.0032	0.010032	1	1.00002748	1.00068965
20-Nov-11	1.0032	0.010032	1	1.00002748	1.00071715
21-Nov-11	1.0050	0.010050	1	1.00002753	1.00074471
22-Nov-11	1.0011	0.010011	1	1.00002743	1.00077216
23-Nov-11	0.9947	0.009947	1	1.00002725	1.00079943
24-Nov-11	1.0011	0.010011	1	1.00002743	1.00082688
25-Nov-11	1.0021	0.010021	1	1.00002745	1.00085436
26-Nov-11	1.0021	0.010021	1	1.00002745	1.00088183
27-Nov-11	1.0021	0.010021	1	1.00002745	1.00090931
28-Nov-11	0.9975	0.009975	1	1.00002733	1.00093667
29-Nov-11	0.9991	0.009991	1	1.00002737	1.00096406
30-Nov-11	0.9978	0.009978	1	1.00002734	1.00099143
1-Dec-11	1.0069	0.010069	1	1.00002759	1.00101904
2-Dec-11	1.0036	0.010036	1	1.00002750	1.00104657
3-Dec-11	1.0036	0.010036	1	1.00002750	1.00107409
4-Dec-11	1.0036	0.010036	1	1.00002750	1.00110162
5-Dec-11	1.0138	0.010138	1	1.00002778	1.00112942
° 6-Dec-11	1.0090	0.010090	1	1.00002764	1.00115710
# of days in the period:			**42**		

OIS FUTURES FINAL SETTLEMENT PRICE:	98.9944 98.994
Calculated as follows:	100-((365/42)*((1.00115710-1)*100))
Implied OIS Rate (%)	1.006

The final settlement price is rounded to the nearest 1/10th of one basis point (0.001). In the case a decimal fraction ends with 0.0005 or higher, the final settlement price is rounded up.

* Day following the Bank of Canada FAD

° Bank of Canada FAD

TMX Montréal Exchange