

MONTREAL EXCHANGE

Predicting a change in the Canadian overnight repo rate target

We can measure market expectations for the Bank of Canada's (BoC) overnight repo target rate using the rate implied by the COA futures contract. The CRA final settlement price is directly influenced by the BoC's overnight repo target rate decision since the underlying benchmark rate (CORRA), which measures the average cost of Canadian dollar overnight general collateral funding, closely tracks the overnight target rate on a daily basis.

Suppose that we are March 27, that the next announcement date for the BoC policy is fixed on April 12 and that an increase of 25 basis points is expected by the market to happen on that date.

Probability theory can be used to determine the likelihood that the BoC will change the overnight repo target rate on April 12, based on market expectations. The price of the April contract, for which the reference period encompasses the BoC next announcement date, can provide useful information on the probability of such overnight target rate movement.

Strategy

Data

Days between the first business day of April and the next BoC announcement date	9
Days between the next BoC announcement and the first business day of the next month (May)	19
Current CORRA rate (expected to remain constant until the BoC announcement)	4.25%
Expected target rate on BoC announcement date	4.50%
Current COA futures price	95.68
Current COA implied geometric average rate	4.32%

Compute the probability	Formula	Results
Compute the probability that the target rate will increase to 4.50% from 4.25%	$4.32\% = [(1+4.25\%/365)^9 * (1+(P*4.50\%+(1-P)*4.25\%)/365)^{19} - 1] * (365/28)$	
Solving the equation, we find P: the COA futures price implied that there is a 37% probability that the BoC will raise the overnight target repo rate to 4.50%		37%

Results

The price of the COA contract for the month of April implies that there is a probability of 37% that the Bank of Canada will increase the overnight target rate by 25 basis points.

The calculation period for a contract month is from, and including, the first Business Day in the relevant contract month up to, and excluding, the first Business Day in the next calendar month. Weekend and holiday rates are considered to be the rate applicable on the previous business day for which a rate was reported. For example, Friday's rate is used for Saturday and Sunday rates. Holidays are determined based on Canadian Banks holiday (Toronto) calendar.

Example for the April 2023 contract:

The calculation period is from April 3rd, the first business bay in the relevant contract month, up to April 30th, the day preceding the first business day of May (as the first business day of May is excluded).