CGB™

Bond portfolio duration adjustment

Situation

An investor forecasting a rise in interest rates may want to reduce the duration of his portfolio.

Objective

Using futures, quickly modify the duration of the bond portfolio.

Strategy

INITIAL POSITION:

Value of bond portfolio:	$20,000,000
Total modified duration of the portfolio:	6.721
Yield of the portfolio:	7.737%
Targeted modified duration of the portfolio:	4
Price of the CGB contract:	103.46
Cheapest bond to deliver:	CAN 5.5% June 1, 2010
Modified duration of CGB contract:	6.5798
Conversion factor:	0.9662
Value of a basis point:	0.0690

First, let us determine the dollar value of a basis point:

For the **current** portfolio:
$20,000,000 x 6.721 x 0.0001 = $13,442

For the **targeted** portfolio:
$20,000,000 x 4 x 0.0001 = $8,000

Difference between the **actual** BPV and the **targeted** BPV of the portfolio:
$13,442 – $8,000 = $5,442

Therefore, the number of contracts that must be sold to obtain the desired duration is the following:

$100,000 x 6.5798 x 0.9662 x 0.0001 x number of contracts = $5,442

Number of contracts = 85.60 or 86

Results

Adjusting the total modified duration of a portfolio to investor specifications is quite simple with the help of futures. By buying or selling futures, it is possible to increase or decrease the total modified duration of the portfolio.

TMX Montréal Exchange