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S T R A T E G Y

Government of Canada Bond Futures

MONTRÉAL EXCHANGE

Hedging open swap positions

A swap trader holds a plain vanilla interest rate swap for which the trader receives a fixed rate of 2.75% semi-annually for 30 years and pays a floating three-month BA rate on a notional amount of $10 million. The trader can realize a profit of 30 basis points on the fixed-rate portion of the swap if the swap position can be immediately offset at the current swap rate of 2.45%. However, no counterparty with a satisfactory credit rating is available. The trader is concerned that a rise in interest rates will erode the profit margin of the swap position.

The trader can hedge the fixed-rate portion of the swap against a rise in interest rates by selling a specific number of LGB contracts. Receiving a fixed-rate on a swap is similar to buying a bond with the corresponding hedge consisting of selling bond futures contracts. Therefore, the trader's borrowing costs can be indexed to the yield of the 30-year Government of Canada benchmark bond. The trader can lock-in current borrowing levels by selling LGB contracts until an offsetting swap can be arranged.

Setting

Price of the LGB contract	220.72
Price of the CTD Can 2% December 1, 2051 bond	98.965
Yield-to-maturity of the CTD bond	2.05%
Conversion factor	0.4481
DV01 of the CTD bond	$222.15
DV01 of the LGB contract	$495.76
DV01 of the fixed-rate portion of the 30-year swap per $10,000,000 notional amount	$21,696
Swap rate currently quoted in the market	2.40%

Step 1

Determine the dollar value of a one-basis point increase for the 30-year fixed-rate portion of the swap. The trader determines that the DV01 of the fixed-rate portion of the 30-year swap is $21,696.

Step 2

Determine how many LGB contracts (hedge ratio) must be sold to hedge the fixed-rate portion of the swap:

$$\frac{\text{Swap DV01}}{\text{LGB contracts DV01}} = \frac{\$21{,}696}{\$495.76} \approx 43.76 \text{ contracts}$$

The swap trader effectively locked-in the lower cost of funds by selling an appropriate number of LGB contracts before offsetting the swap.