

## Yield Curve Spread 5-Year/30-Year Government of Canada

An investor expects the slope of the 5-year to 30-year Government of Canada (GoC) yield curve to flatten in the future. Supporting the outlook is the view that the 5-year/30-year yield spread is at its steepest historical level for this stage of the easing cycle coupled with the expectations that government agencies will reduce their purchase of mortgage-backed securities (MBS) in the 5-year sector of the curve—as part of an MBS reverse auctions buyback program instituted by the Government—placing upward pressure on yields. Against this backdrop, the investor expects the 5-year sector of the yield curve to underperform compared to the 30-year sector of the yield curve. Specifically, the yield spread between the benchmark 5-year and 30-year GoC bonds is expected to narrow from its current record—high level of 175 basis points.

With the expectations of a flattening in the yield curve, the investor can capitalize on this outlook by selling the yield curve using 5-Year and 30-Year Government of Canada Bond Futures (CGF and LGB, respectively). A yield curve spread strategy that uses bond futures implies that one buy or sell the yield curve in terms of what one does with the shorter maturity bond futures contract. Thus, if one anticipates a flatter yield curve (that is, a narrowing yield spread), then one would sell the curve by selling the CGF and buying the LGB. Conversely, if one expects the yield curve to widen (that is, a widening yield spread), one would buy the curve by buying the CGF and selling the LGB.

### SETTING:

Price of the CGF (per \$100 nominal value)	\$116.72
Cheapest-to-deliver bond	CAN 5.25% June 1 <sup>st</sup> , 2013
DV01 of the CGF (per \$100,000 nominal value)	\$44.56
Price of the LGB (per \$100 nominal value)	\$108.70
Cheapest-to-deliver bond	CAN 5.75% June 1 <sup>st</sup> , 2033
DV01 of the LGB (per \$100,000 nominal value)	\$153.85
Current 5-yr/30-yr GoC bond yield spread	175 basis points

DV01 refers to the dollar value of a basis point.

The investor sells the spread by selling the CGF and buying the LGB with gains or losses on the spread dependent on the result of changes in the yield curve as opposed to changes in the direction of interest rates. To neutralize the directional changes of interest rates, a yield curve ratio (hedge ratio) is determined using the DV01 for each contract to assure that each leg will respond equally, in dollar terms, to a given yield change.

The hedge ratio, expressed in terms of CGF per LGB, is determined as follows:

$$\frac{\text{LGB DV01}}{\text{CGF DV01}} = \frac{153.85}{44.36} = 3.5 \text{ CGF contracts}$$

Therefore, to establish a spread trade with a dollar duration that is equal to zero, the investor sells 3.5 CGF contracts for every 1 LGB contract bought. This yield curve strategy results in a gain if the yield curve flattens (that is, the 5-year/30-year yield spread narrows). However, the strategy will generate a loss if the yield curve steepens (that is, the 5-year/30-year yield spread widens).