C|G|Z™

Yield curve spread 2-year/10-year

Government of Canada

Situation

An investor expects the Government of Canada (GoC) yield curve to continue to steepen in the foreseeable future. Supporting the outlook is the anticipation of additional rate cuts by the Bank of Canada due to a sluggish Canadian economy, as the output gap remains larger than expected as well as the adverse effects of the Canadian dollar's sharp appreciation on the export sector. The investor expects the front end of the yield curve to continue to be pressured to the downside as the yield spread between the benchmark 2-year and 10-year GoC bonds continues to widen.

Strategy

With the expectations of further steepening in the yield curve, the investor can capitalize on this outlook by buying the yield curve using 2-year and 10-year Government of Canada bond futures contracts (CGZ and CGB, 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. Thus, if one anticipates a steeper yield curve (i.e. a widening yield spread), then one would buy the curve by buying CGZ futures and selling CGB futures. Conversely, if one expects the yield curve to flatten (i.e. a narrowing yield spread), one would sell the curve by selling CGZ futures and buying CGB futures.

SETTING:

Price of the CGZ futures	105.82
Cheapest-to-deliver bond	CAN 3% June 1, 2006
Dollar value of a basis point (DV01) of the CGZ futures	22.81
Price of the CGB futures	111.29
Cheapest-to-deliver bond	CAN 5.25% June 1, 2013
Dollar value of a basis point (DV01) of the CGB futures	83.33
Current 2-yr/10-yr GoC yield spread ("Tens under Twos")	191 basis points

The investor buys the spread by buying CGZ futures and selling CGB futures 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 dollar value of a basis point (DV01) for each contract. As a result, the investor is assured that each leg will respond equally, in dollar terms, to a given yield change.

The hedge ratio, expressed in terms of CGZ futures per CGB futures, is determined as follows:

$$\frac{\text{10-year CGB DV01}}{\text{2-year CGZ DV01}} = \frac{\$83.33}{\$22.81} = 3.653 \text{ contracts}$$

Therefore, to establish a duration neutral spread trade, the investor buys 3.653 CGZ futures for every 1 contract of CGB futures sold. This yield curve strategy results in a gain only if the yield curve steepens (i.e. the 2-year/10- year spread widens). However, the strategy will generate a loss if the yield curve flattens (i.e. the 2-year/10- year spread narrows).

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