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S T R A T E G Y

Government of Canada Bond Futures

MONTRÉAL EXCHANGE

Credit spread (BAX – CGZ)

Given the increase in corporate bankruptcies and deteriorating corporate balance sheets, a trader expects spreads between high quality corporate bonds and Government of Canada bonds to continue to widen in the foreseeable future. Furthermore, the trader believes that the current spread between short-term corporate paper and equivalent maturity Government of Canada bonds does not reflect this outlook and a flight-to-quality into Government of Canada bonds is expected to occur.

Strategy

With the expectations of a "credit crunch" looming, the trader can capitalize on this outlook by buying CGZ contracts and selling a strip of consecutive BAX contracts. Bankers' acceptances are short-term money market instruments with the payment of principal and interest guaranteed by one of Canada's major banks. It is possible to trade BAX strips vs. longer maturity securities such as Government of Canada bonds, with the spread referred to as the "two-year GoC/BAX credit spread" or "2YBA spread." A strip may be purchased (or sold) by buying (or selling) a series of BAX contracts maturing in successively deferred months, in combination with a current position in the cash or futures market.

One may buy the spread (buy CGZ/sell BAX strip) in anticipation of a widening yield spread between Government of Canada bonds and BAXs. This spread may be considered a credit risk or a "flight-to-quality" play if one expects credit considerations to heat up. Or, one may sell the spread (sell CGZ/buy BAX strip) in anticipation of a narrowing yield spread between Government of Canada bonds and BAXs if one expects credit considerations to become less significant.

Bankers' acceptances represent private credit risks versus the reduced public credit risk implied in Government of Canada bond yields. Because credit risk is an important issue, the trade is executed as a "spread" and should not be considered an "arbitrage" strategy. In order to assess the value of this spread, it is necessary to compare apples with apples. In other words, one must ensure that the yield on the BAX strip compares to the bond equivalent yield (BEY) associated with the Government of Canada bond.

In order to compare the BAX strip to the yield on a 2-year bond, we find the BEY of the BAX strip as follows: (1) find the forward value (FV) of the strip; and (2) use that information to derive a BEY for the strip (BEY BAX strip).

Setting:

Yield of the CTD CAN 0.25% November 1, 2022 bond	0.23%
Bond equivalent yield (BEY) of the 2-year BAX strip	0.525%
BEY spread of the 2-year BAX strip / 2-year GoC bond	29.5 basis points
Remaining time to maturity of the CTD CAN 0.25% November 1, 2022 bond (700 days)	1.92 year
Conversion factor of the CTD bond	0.9101
Price of the CGZ March contract	110.82
DV01 of the BAX contract (equivalent to $1,000,000 notional amount)	25
DV01 of the CGZ contract per $25,000,000 notional amount (250 CGZ contracts)	5,550

Step 1

Compute the forward value of the BAX strip =
[1 + 0.00484(13/365)] [1 + 0.0049(91/365)] [1 + 0.0049(91/365)]
[1 + 0.0049(91/365)] [1 + 0.00495(91/365)] [1 + 0.0053(91/365)]
[1 + 0.0056(91/365)] [1 + 0.00585(93/365)][1 + 0.0061(48/365)] = 1.010126

The forward value of the BAX strip implies a BAX implied strip rate that is calculated as follows:

BAX implied strip rate = (365/700) × [Forward Value of the BAX strip – 1]
= (365/700) × [1.010126 – 1] = 0.528%

Step 2

Compute the BEY of the BAX strip
$[1.010126^{1/(1.92 \times 2)} - 1] \times 2 = 0.525\%$

Therefore, the BEY spread between the 2-year BAX strip and the 2-year CAN 0.25% November 1, 2022 bond is 23.5 basis points; or

2YBA spread = BEY BAX strip - BEY 2-year Government of Canada bond
0.295% = 0.525% – 0.23%

The trader expects the BEY spread to widen based on credit risk concerns and the anticipated flight-to-quality into Government of Canada bonds.

Step 3

We apply the following hedge ratio to determine the appropriate number of BAX contracts that must be bought or sold for a notional amount of $25,000,000.

$$\text{Hedge ratio} = \frac{\text{CGZ contract DV01}}{\text{BAX contract DV01}} = \frac{5{,}550}{\$25} \approx 222 \text{ BAX futures to sell}$$

Therefore, the credit spread strategy involves selling a total of 222 BAX contracts for every 250 CGZ contracts bought. The transaction is based on a notional amount of $25,000,000 or 250 CGZ contracts.

The total number of BAX contracts necessary to hedge the CGZ contracts is subsequently broken down into the required number of contracts for each leg of the strip.

CONTRACT	Days in period	Rate %	BAX contracts to sell
Stub period 12/01/2020 to 12/14/2020	13	0.484	4
BAX Dec 2020	91	0.490	29
BAX Mar 2021	91	0.490	29
BAX Jun 2021	91	0.490	29
BAX Sep 2021	91	0.495	29
BAX Dec 2021	91	0.530	29
BAX Mar 2022	91	0.560	29
BAX Jun 2022	93	0.585	29
BAX Sep 2022	48	0.610	15
		Implied BAX strip rate: 0.528% Bond equivalent yield: 0.525%	Total number of BAX contracts to sell per $25,000,000 notional amount (250 CGZ contracts)