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S T R A T E G Y

Government of Canada Bond Futures

MONTRÉAL EXCHANGE

Cash-and-carry trade

A bond trader notes that the price relationship between the CTD Can 2% December 1, 2051 bond and the LGB contract is out-of-line.

The trader's observation is supported by:

1. an actual repo rate (0.20%) that is lower than the repo rate (1.85%) implied by the price of the LGB contract—a condition that provides a trader an arbitrage profit by initiating a cash-and-carry trade (whereby the trader sells bond futures and finances the purchase of the cash bond at a rate below the rate implied by the futures price). The bond is then held until it is delivered to fulfill the obligation of the sale of the futures contract; and
2. a net basis (basis after carry) reflecting that the actual LGB contract is overpriced relative to its theoretical fair value.

LGB March 2022	Last Delivery Day 2022-03-31	Price of LGB Contract 220.72	Valuation Date 2021-11-18			
Coupon	**Maturity**	**Bond Price**	**Conversion Factor**	**Implied Repo**	**Actual Repo**	**Net Basis**
2%	December 2051	98.964	0.4481	1.85%	0.20%	-0.595

Setting

Price of the CTD Can 2% December 1, 2051 bond	98.964
Accrued interest: (170/365) x 2 (170 days = June 1 to November 18 settlement date)	0.932
Financing rate (actual repo rate)	0.20%
Conversion factor	0.4481
Price of the LGB contract	220.72
Days from settlement to futures delivery (November 18 to March 31)	133
Days from next coupon to futures delivery (December 1 to March 31)	120

The trader initiates a cash-and-carry trade that involves the following steps:

1. Pay for the purchase of the CTD bond (bond price + accrued interest).
2. Finance the bond purchase at the current short-term financing rate (actual repo rate).
3. Receive any intervening coupon plus reinvestment income during the life of the futures contract.
4. Receive the futures invoice price + intervening coupon accrued interest from delivering the bond (i.e. collect the anticipated receipt from delivering bond to the buyer).
5. Repay the cash amount borrowed to purchase the CTD bond + interest.
6. Calculate arbitrage profit.

CASH-AND-CARRY TRANSACTION	AMOUNT (per $100,000.00 notional amount)	COMMENTS
Purchase the CTD bond	$98,964 + $932 = $99,896	Price of bond + Accrued interest
Financing costs until LGB delivery	$99,896 x 0.0020 x 133/365 = $73	Amount borrowed to buy bond × Short- term financing rate × Number of days/365
Income during the life of the LGB contract (credit and reinvestment of the coupon: December 1 to March 31)	$1000 + ($1000 x 0.0020 x 120/365) = C$1001	Coupon income + (Coupon income × Short-term financing rate × Number of days/365)
Total costs of the bond position	$99,896 + $73 - $1001 = **C$98,968**	Investment + Financing - Income
Delivery price of the deliverable bond at LGB futures delivery	($220,720 x 0.4481) + $658* = **$99,563** * $100,000 x 2% coupon x 30/365	Futures invoice price × Conversion factor + Accrued interest received by the seller from the bond buyer
Arbitrage profit (per LGB futures)	$99,563 - $98,968 = **$595**	Delivery price of the deliverable bond - Total costs of the bond position

In the present strategy, the cash-and-carry transaction results in a profit of $595 per contract.