CGZ Two-Year Government of Canada Bond Futures

CGF Five-Year Government of Canada Bond Futures

CGB Ten-Year Government of Canada Bond Futures

LGB Thirty-Year Government of Canada Bond Futures

MONTRÉAL EXCHANGE

H25-M25 Roll Update

February 2025

TMX

QUARTERLY ROLL Summary

A few changes have occurred in the futures and basis markets that all managers should make note of this quarter. Unlike for the past several years, some basis markets now trade positive and short positions will probably deliver on or near the last possible delivery dates, rather than nearer the start of the delivery month. Further, positive carry reduces the value of wildcard options – they are already worth nothing in both CGZH25 and CGFH25 due to the rising hurdle associated with positive carry for long basis positions.

First notice for March futures contracts is February 28th, a business day prior to first delivery on the next business day, March 3rd, 2025. There are no holidays to distort the usual roll dates this quarter and the liquid dates of the roll from March to June contracts should occur between February 25th and 27th.

As we write, the overnight repo rate is 3.02% but is expected to fall to 2.8% by the June contract delivery dates. Importantly, June contracts ALL[1] currently have cheapest-to-deliver (CTD) bonds with coupons between 2.75% and 3%, so the timing option, the option where the short futures position can choose to deliver early or late, will be very sensitive to monetary policy this quarter.

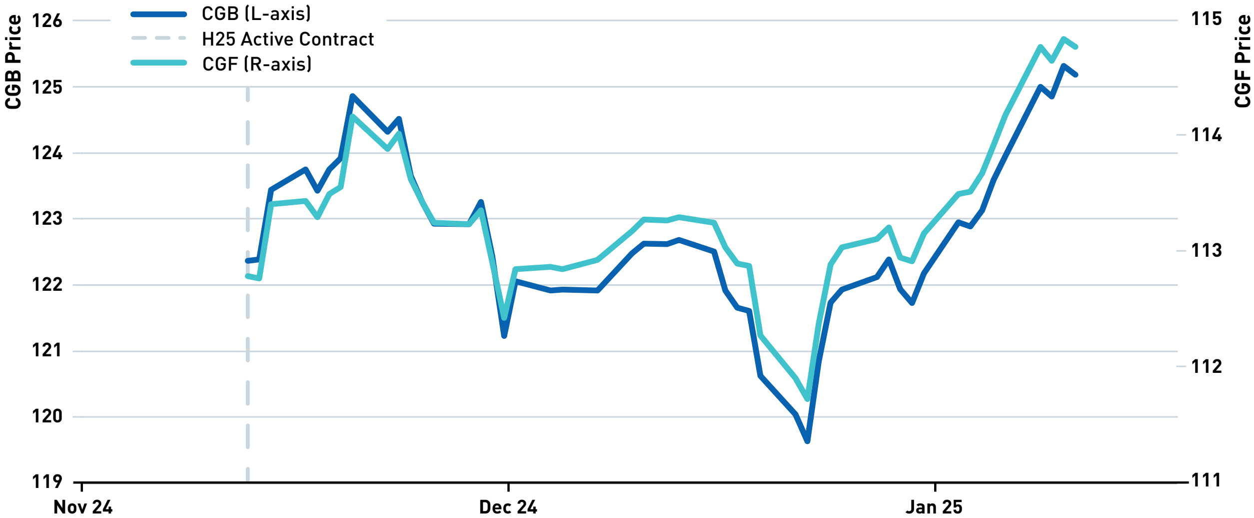
1 With some question about the LGB contract. See the LGB section below for more information.

Speculative Positioning

A week before the U.S. Presidential inauguration, when the "Day 1 Tariffs" were tweeted, Canadian bond prices took off sharply, as anyone involved in fixed income markets in Canada knows. We believe the major price reversal was a risk-off event for trend-following models, although some evidence exists that positions have been added on the multi-week rally since then. The price action of both the Five-Year Government of Canada Bond Futures (CGF™) and the Ten-Year Government of Canada Bond Futures (CGB™) March contracts is shown in Figure 1 where the sharp reversal on January 14th is obvious.

FIGURE 1

CGF & CGB Price, H25s

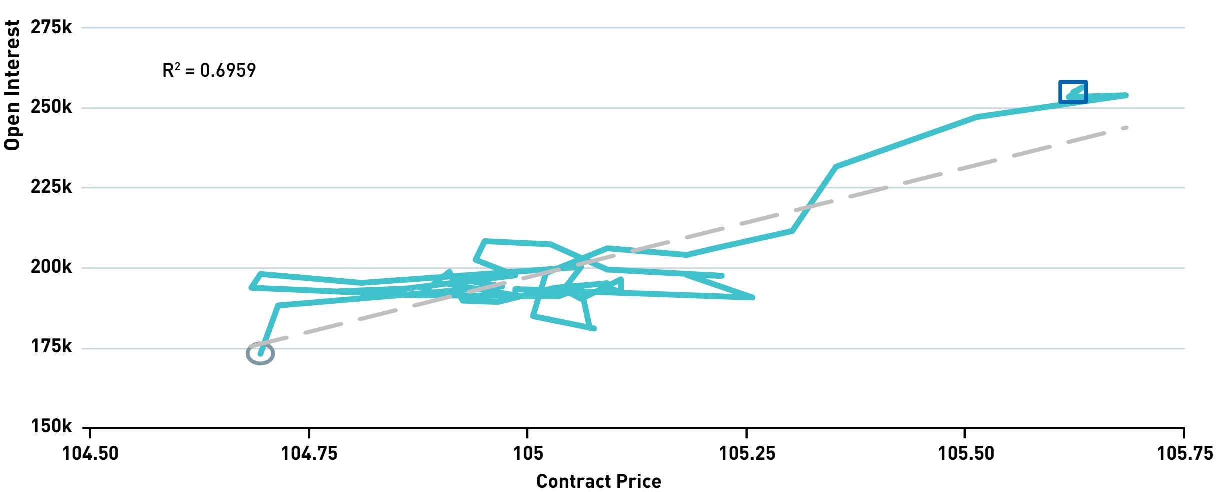


Source: Montréal Exchange

We speculate that trend-following models are long contracts but almost certainly at modest risk levels given the sharp reversal and elevated volatility recently. Interestingly, the Two-Year Government of Canada Bond Futures (CGZ™) CGZH25 contracts have shown a very high correlation between price and open interest this quarter, a metric that usually indicates that trend-following managers added to positions as a trend was established. Figure 2 shows the R-squared of CGZH25 open interest with respect to price. The value of about 0.7 is high for this contract and something we have typically not seen before. Has the success of the CGZ high open interest and current focus on the front-end of yield curves attracted algorithmic models to the CGZ product?

FIGURE 2

CGZH25 Price versus Open Interest



Source: Montréal Exchange

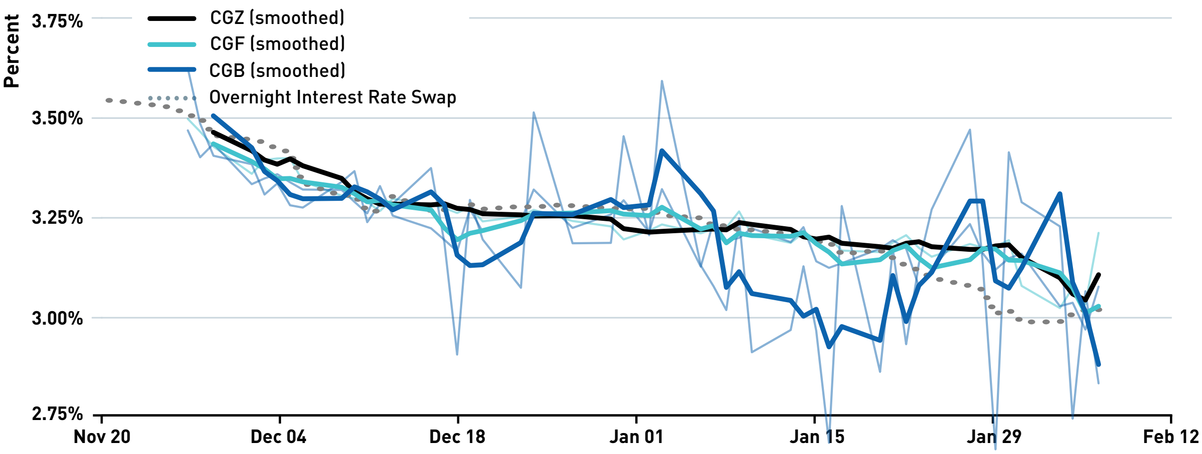
Unlike the high correlation between price and open interest in CGZ contracts shown in Figure 2, the similar regression analysis for CGFH25 (5-year) futures contracts shows almost zero correlation between those two metrics. While we remain unsure that trend-following models have finally adopted the CGZ contract, we can say that these models appear to be inactive this quarter at the 5-year point of the yield curve in Canada.

CGB, the 10-year contract, shows even stronger correlations, but only if we regress open interest on price after the trend reversal on January 14th. The strong R^2 in CGB implies that speculative model portfolios are currently long contracts.

The recent high volatility in the bond market and subsequent price surge in futures contracts has wreaked some havoc in the basis market. While the CGZ (2-year) and CGF (5-year) contracts have been reasonably well-behaved and acted in accordance with the arbitrage possibilities between overnight index swaps and futures basis, CGB (10-year) contracts have not. Figure 3 shows the implied repo of these three contracts since they took active status during the late-November roll. CGBH25 specifically has traded very rich relative to bonds (implied repo higher than overnight interest rate swaps), then very cheap, then rich and now, at least at the time of writing, cheap again. While potentially annoying for market makers trying to hedge strong flow trade, astute traders with an eye to relative value in the futures basis market have probably found ample opportunities in recent weeks.

FIGURE 3

Implied Repo: CGZ, CGF, CGB



Source: BMO Capital Markets[i] Fixed Income Sapphire database, Montréal Exchange

Cheapest-to-Deliver Switch

Due to low yields (again), switch risk for long positions is not a factor in all Canadian physical delivery futures contracts this quarter with one possible exception, which may or may not count as switch risk.

We modeled the inclusion of the new long bond, the 3.5% December 2057 Canada, and assumed that, in two weeks, the bond would have enough open interest to qualify for the 30-Year Government of Canada Bond Futures (LGB™) delivery basket, which seems likely at this time[2]. Including the 2057 in the basket means it will immediately become the cheapest-to-deliver bond, pushing the 2055, which is CTD for the March contracts, to the #2 spot.

Figure 4 shows the result of including the 2057 in the LGB basket for the June 2025 contract. The new bond becomes the CTD and it would take difficult conditions – a large inversion in the long end of the curve – to make the 2055 the CTD again.

The good news, and the reason we are not sure whether this really counts as switch risk, is that the February 20th bond auction will settle the issue as the Bank of Canada will either auction the $1 billion notional to trigger inclusion or it will not; we suspect it will, as that is normal recent size for a long bond auction, especially at yields around 3.2%.

2 The Montreal Exchange recently published an advisory notice to provide more clarity over the LGB June basket.

FIGURE 4

Dec57 Yield

SLOPE	3.00%	3.05%	3.10%	3.15%	3.20%	3.40%	3.60%	3.80%	4.00%	4.20%	4.40%	4.60%	4.80%	5.00%	5.20%	5.40%
-10.0	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55
-7.2	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55
-4.4	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec55	Dec55	Dec55	Dec55	Dec55
-1.6	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57
1.1	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57
3.9	**Dec57**	**Dec57**	**Dec57**	**Dec57**	**Dec57**	**Dec57**	**Dec57**	**Dec57**	**Dec57**	**Dec57**	**Dec57**	**Dec57**	**Dec57**	**Dec57**	**Dec57**	**Dec57**
4.1	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57
4.4	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57
4.6	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57
4.8	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57
5.0	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57	Dec57

Source: Author Calculations

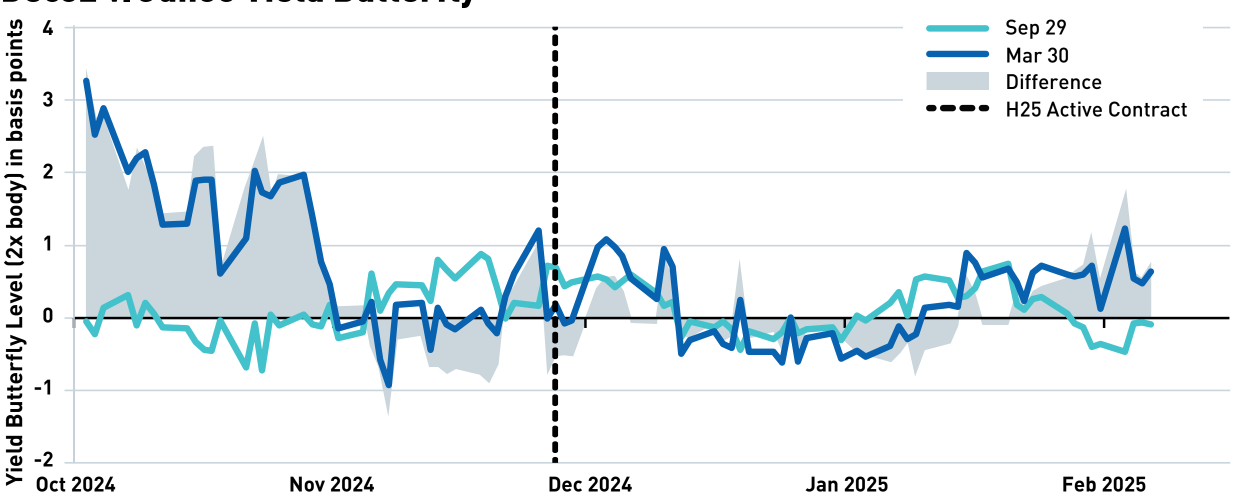
Relative Value of the CTD Bonds

Aside from the fluctuations between rich and cheap for contracts relative to bonds recently (Figure 4), there is not much of an interesting relative value story to tell this quarter. With no change in the CTD for the CGB (10-year) contract, we are looking to the 5-year (CGF) for any relative value anomalies.

The CGFM25 will have a different CTD bond than the H25 contract, but there is only a mild difference in the CTD swap spread butterflies at this time. Figure 5 shows the swap spread butterfly and the new CTD, the March 2030 for the CGFM25 contract, is just a half basis point cheaper than the current CTD, the September 2029 for the CGFH25 contract. This is somewhat surprising given how the rally in bonds has driven other contracts to rich levels relative to their CTD bond and confirms, in our view, that very little speculative, momentum-driven trading has been in place in the CGF contract recently. The open interest on CGFH25, for example, is almost the same as it was at the start of the surge in bond prices.

FIGURE 5

Dec32 v. Jun33 Yield Butterfly



Source: BMO Capital Markets[i] Fixed Income Sapphire database

Key Metrics & Expectations

As usual, we show tables of key metrics for each contract this quarter in Figure 6, Figure 7, Figure 9, and Figure 10. We used closing prices on November 7th and March contracts, which all had zero open interest, so we used the exchange settlement price even though it is usually not a tradeable price before the roll begins.

CGBH25 to CGBM25

There is no change to the cheapest-to-deliver bond between the March and June contract for the CGB (10-year) contract. With almost no DV01 change, the roll should be quite stable.

Trend-following models are almost certainly long this contract but, presumably, at less than full risk given the price reversal and higher expected market volatility around and after the U.S. presidential inauguration. At least 75,000 contracts have been added to open interest during the steady move to higher prices.

We are confident that speculative long positions looking to roll early will drive the roll dynamic. Given that, at the time of writing, the CGBH25 contract is trading about one cent rich versus the CTD bond[3], both momentum-driven and relative value portfolios will likely be eager to roll as soon as liquidity is available. This should put downward pressure on the roll price as both types of portfolio seek to sell front (March) contracts and buy back (June) contracts if current pricing holds up. Pressure will mount towards a lower roll price before more patient liquidity providers step in to meet the excess supply.

Some CGB positions will inevitably be taken into delivery for wildcard plays. But, such managers will still be anxious to deliver early given the negative carry of the long basis position for CGBH25 contracts.

FIGURE 6

CGB Key Metrics

6-FEB-2025	CGBH25	CGBM25	DIFFERENCE
Closing Price	125.160	124.510	0.650
Cheapest-to-Deliver (CTD)	CAN 2.750% Jun 2033	CAN 2.750% Jun 2033	No change
CTD Conversion Factor	0.7909	0.7959	
Probable Delivery Date	03-Mar-25	02-Jun-25	
Gross Basis (cents)	-0.5	-11.3	
Net Basis (cents)	1.2	-3.3	
Implied Repo (to Prob. Delivery)	2.84%	3.14%	
DV01/100 of CTD	7.3	7.3	0.0%
Open Interest	688,079	0	
CTD Outstanding (millions)	19,000	19,000	0
Front OI Multiple of CTD	3.6x	3.6x	

Source: BMO Capital Markets[i] Fixed Income Sapphire database, Montréal Exchange

3 After accounting for the 2.6 cent value of the wildcard option.

CGFH25 to CGFM25

The June CGF contract will have a new CTD, which occurs twice yearly under the existing auction schedule and bond issuance plan. Most CGF contracts this quarter should be delivered near the end of the delivery period as the long basis position is positive carry – short futures positions will probably wait to collect all the carry income rather than forego it by delivering early. The wildcard option this quarter appears to be worth nothing , but we have a cautionary note on this "zero value" below in the Wildcard section.

Interestingly, the new CTD for this contract bears a coupon 75 basis points lower than the old CTD, which should initially result in a negative gross basis quote. However, it should probably be only a few cents negative. Neither the new CTD bond nor the old one seems to have any real relative value advantage, and we have concluded above that algorithmic models are probably not involved in the CGF contract this quarter.

Fair value of the roll[4] will not be stable intraday due to the larger-than-usual 12.5% DV01 extension from one contract to the next. An intraday move up or down at the 5-year point of the yield curve can result in almost 1.5 cents difference on the fair value roll, on top of any change in Bank of Canada expectations. Be careful leaving standing orders this quarter.

FIGURE 7

CGF Key Metrics

6-FEB-2025	CGFH25	CGFM25	DIFFERENCE
Closing Price	114.760	115.560	-0.800
Cheapest-to-Deliver (CTD)	CAN 3.500% Sep 2029	CAN 2.750% Mar 2030	Change!
CTD Conversion Factor	0.9027	0.8673	
Probable Delivery Date	31-Mar-25	02-Jun-25	
Gross Basis (cents)	7.3	12.8	
Net Basis (cents)	2.6	22.7	
Implied Repo (to Prob. Delivery)	2.97%	2.37%	
DV01/100 of CTD	4.4	4.7	8.1%
Open Interest	208,281	0	
CTD Outstanding (millions)	30,000	30,000	0
Front OI Multiple of CTD	0.7x	0.7x	

Source: BMO Capital Markets[i] Fixed Income Sapphire database, Montréal Exchange

CGZH25 to CGZM25

Until there is meaningful change in the Bank of Canada auction schedule, the CTD of the 2-year (CGZ) contract changes every quarter, unlike the other longer duration Montréal Exchange contracts. This quarter, it will change from the 3.25% November 2026 to the 3% February 2027, a DV01 extension of about 14%. Since the last monetary policy action became priced into short-term interest rates, this contract has traded at a positive gross basis and should continue to do so[5], perhaps substantially positive if the Bank reduces the target rate again as many market participants expect.

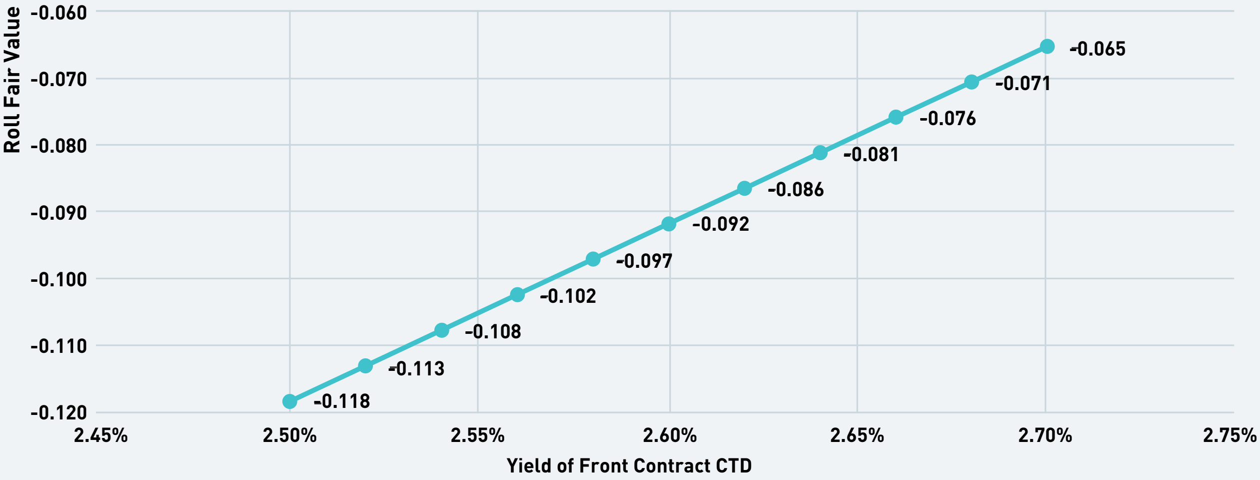
With the Bank of Canada and, perhaps, the Federal Reserve in "wait and see" mode for the time being, the front end of the yield curve will probably remain very data dependent. As a result, intraday moves in short-term interest rates, combined with the DV01 extension between the two contracts in the roll, can cause very significant fluctuations in the fair value of the roll, even intraday. Managers should be careful leaving standing orders this quarter as the CGZ roll fair value pricing can quickly fluctuate by a few cents intraday, as modeled in Figure 8.

4 Refer to the recently published explainer and case study "Calculate Fair Value of the CGB Roll" for an explanation, both theoretical and empirical, of how we arrive at our fair value numbers in these updates

5 Or maybe zero or slightly negative, given the current target rate is 3%, identical to the coupon on the CGZM25 cheapest-to-deliver bond.

FIGURE 8

CGZH25/CGZM25 Roll Fair Value v. Rate Level, Feb 25/25



Source: Author Calculations

For the first time, we believe that algorithmic models are involved in this contract and are long futures, but likely at medium risk only. These portfolios tend to be price-insensitive during the roll so there may be pressure to sell CGZH25 to buy CGZM25 at various times throughout the roll period, especially if significant open interest remains as the first notice date approaches.

FIGURE 9

CGZ Key Metrics

6-FEB-2025	CGZH25	CGZM25	DIFFERENCE
Settle Price	105.620	105.710	-0.090
Cheapest-to-Deliver (CTD)	CAN 3.25% Nov 2026	CAN 3.00% Feb 2027	Change!
CTD Conversion Factor	0.9569	0.953	
Probable Delivery Date	31-Mar-25	02-Jun-25	
Gross Basis (cents)	2.2	2.8	
Net Basis (cents)	-0.2	4.2	
Implied Repo (to Prob. Delivery)	3.03%	2.89%	
DV01/100 of CTD	1.7	1.9	13.9%
Open Interest	255,153	0	
CTD Outstanding (millions)	22,000	21,500	-500
Front OI Multiple of CTD	1.2x	1.2x	

Source: BMO Capital Markets[i] Fixed Income Sapphire database, Montréal Exchange

LGBH25 to LGBM25

Although the next long bond auction is not until February 20th and our submission deadline for publishing the roll update is over a week prior to that date, we believe an auction of $1 billion notional will qualify the new 3.5% December 2057 bond for inclusion in the delivery basket and Figure 10 reflects this assumption. Readers should confirm this when the information is available. Inclusion of this new bond will immediately make it the cheapest-to-deliver for the LGBM25 contract, an event occuring only about every two years. As a result of a much higher coupon on the 2057 bond relative to the 2055, the DV01 per contract (not shown in the figure) is almost 4% less for the June 2025 than for the March 2025.

The LGB roll is never urgent now that the potential for early delivery has been eliminated in the contract specifications. Some contracts are closed around the time of the liquid roll in the other physical delivery contracts, but the open interest does not usually approach zero until a few days before the delivery date midway through the contract expiry month. Some 20% or so of open interest is often delivered in this contract, a very high percentage for this type of futures contract.

Professional liquidity providers facilitate most LGBH contract activity, and these contracts typically trade close to fair value. We note that, especially around the auction dates for the new long bond, the 2057 has traded very cheap relative to the 2055. There are several potential opportunities to take a few basis points for participants that have a relative value mindset but opportunities in the long end of the Canadian yield curve appear to be rare or infrequent.

FIGURE 10

LGB Key Metrics

6-FEB-2025	LGBH25	LGBM25	DIFFERENCE
Closing Price	168.350	167.950	0.400
Cheapest-to-Deliver (CTD)	CAN 2.750% Dec 2055	CAN 3.500% Dec 2057	Change!
CTD Conversion Factor	0.5462	0.6443	
Delivery Date	20-Mar-25	19-Jun-25	
Gross Basis (cents)	-0.5	-214.6	
Net Basis (cents)	0.0	-224.7	
Implied Repo (to Delivery)	3.02%	8.87%	
DV01/100 of CTD	18.6	21.1	13.5%
Open Interest	1,394	0	
CTD Outstanding (millions)	28,750	3,500	-25,250
Front OI Multiple of CTD	0.0x	0.0x	

Source: BMO Capital Markets[i] Fixed Income Sapphire database, Montréal Exchange

We mentioned the preponderance of professional liquidity provision in the paragraph above and have some evidence to present this quarter that shows the actual liquidity is much greater in LGB contracts than the posted bid/ask size may indicate. While doing a routine quarterly analysis of the correlation between prices and open interest of futures, we noticed that the open interest of LGBH25 increased by about 100% for about a week around the year end, which we show in Figure 11. The data is correct, so some market participant (or more than one) was able to find liquidity for the DV01 equivalent of about $210 million notional of long bonds via the LGB contract. While probably a hedge or a move to reduce cash usage on a calendar year-end date, the fact that the trade was facilitated is a demonstration of the "shadow liquidity" that goes beyond the posted bid/ask in this contract and the long end of the Canada bond market in general.

FIGURE 11

LGBH25 Price versus Open Interest

Source: Montréal Exchange

December Delivery Summary

Due to several reasons (good opportunities elsewhere, lower wildcard option values), less wildcard activity occurred in December than previous delivery periods despite good opportunities. Just 2.7% of each of the CGFZ24 and CGBZ24 contracts were taken into the delivery period without rolling, but profits were minimal for wildcard plays.

Profits on suspected wildcard deliveries were minimal for the 5-year (CGF) contract, but over 8000 CGB (10-year) contracts were delivered on the optimal date, which turned out to be the very first possible date in the delivery period; very convenient for the managers with short futures positions since their position had negative carry during the holding period. Our estimate of profits from these transactions run only to six figures, which, while respectable, is much lower in magnitude than the profits produced by these strategies in the past.

Wildcard Option Value

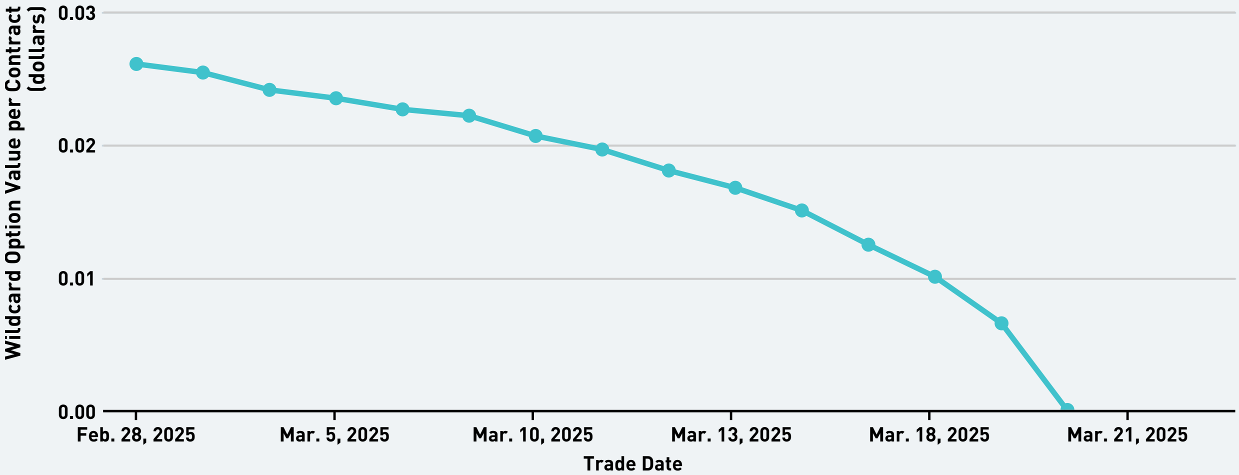
The landscape has changed in the wildcard option market due to lower CORRA rates than in the past. Falling CORRA has resulted in positive carry for long basis positions and increased the hurdle rate for wildcard exercise. As a result, these embedded options are worth far less than they were in previous years and are less dangerous for the long position since the hurdle to exercise is quite substantial for some contracts. Short positions usually prefer to collect the remaining positive carry rather than deliver early.

As both CGZH25 and CGFH25 carry positively for long basis (long the bond, short the futures) positions, we find that the option values for the embedded wildcards in these contracts have now fallen to about zero. Our simulation model could not produce a single iteration where the afternoon price change was significant enough to compel the short futures position to deliver early. We add one caveat to this statement: while the existing data set that calibrates our simulation distribution shows no value for the CGFH25 wildcard option, we can easily imagine situations in which the current government south of the border could make a late afternoon, semi-official but market-moving "announcement". We caution managers with long futures positions that situations can occur that lead to unexpected early delivery despite the so-called zero value of the CGFH25 wildcard option.

In contrast to the CGZ and CGF March contracts, the CGB (10-year) March contract will carry negatively in delivery for long basis positions and it will probably be delivered early or the short positions will wait for wildcard opportunities. Figure 12 shows our calculated value for the diminished CGB wildcard option in the current environment. The same caveat we noted for CGFH25 applies equally to this quarter's CGB contracts: many potential scenarios exist beyond the historical data we employ to calibrate our simulation's distribution.

FIGURE 12

CGBH25 Wildcard Option Value



Source: Author Calculations

LOOKING FORWARD & Opportunities

- Managers should monitor the February 20th Bank of Canada auction to determine whether enough 2057 worth of bond notional is sold to ensure that the bond qualifies for inclusion in the LGB basket.
- Since three of the four contracts this quarter will probably fluctuate between positive and negative basis due to their 2.75-3% coupon cheapest-to-deliver bonds, some opportunities may be created on/near the inflection points that some managers can find confusing.
- Cross-currency opportunities, especially between Canada and the USA, should be attractive, although we strongly feel that everything is a bit of a "Trump Trade" currently. U.S. and Canadian rates have diverged further than almost anyone could have predicted but reversion to the mean has been strong in the past; no presidency lasts 10 years, for example.
- Brave long end traders may look to the 2057 auction as a time to pick up a few basis points versus the benchmark and potentially hedge in LGB contracts.

Kevin Dribnenki writes about fixed income derivatives and opportunities in Canadian markets. He spent over 10 years managing fixed income relative value portfolios as a Portfolio Manager first at Ontario Teachers' Pension Plan and then BlueCrest Capital Management. During that time he managed domestic cash bond portfolios as well as international leveraged alpha portfolios and has presented at several fixed income and derivatives conferences. He received a BA in Economics from the University of Victoria, an MBA from the Richard Ivey School of Business, and holds the Chartered Financial Analyst designation.

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