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

M24-U24

Roll Update

May 2024

QUARTERLY ROLL Summary

Delivery periods for all June 2024 contracts[1] and all contracts going forward are affected by the late May change from T+2 settlement for bond trades to T+1. Any calculations dependent on T+2 should be adjusted to account for this. Two interesting impacts on futures contracts will be: one day less in the active life of a wildcard option[2], important for CGB™ contracts; and, perhaps, some tendency to delay the beginning of the liquid roll period one day closer to the end of the month.

First notice is May 31st, and the liquid part of the roll period may still begin on May 28th, as it normally would, but could be put off to May 29th since the roll period is always driven by a desire to close positions before notice/delivery dates. Buyers need to meet sellers, not only on price but also on timing of the trade, so we suggest watching for a May 28th start but don't be concerned if there is a one-day delay in comparison to previous quarters as first notice day is now one day later.

Due to negative carry for long basis positions, clients with long futures positions should expect to be delivered very early (except LGB™ positions, for which it isn't possible). This may even apply to CGB contracts where sophisticated investors have historically delayed delivery to profitably exercise their wildcard options; the value of the CGB wildcard isn't nearly as high as it once was.

1 Not LGB which has no notice period.

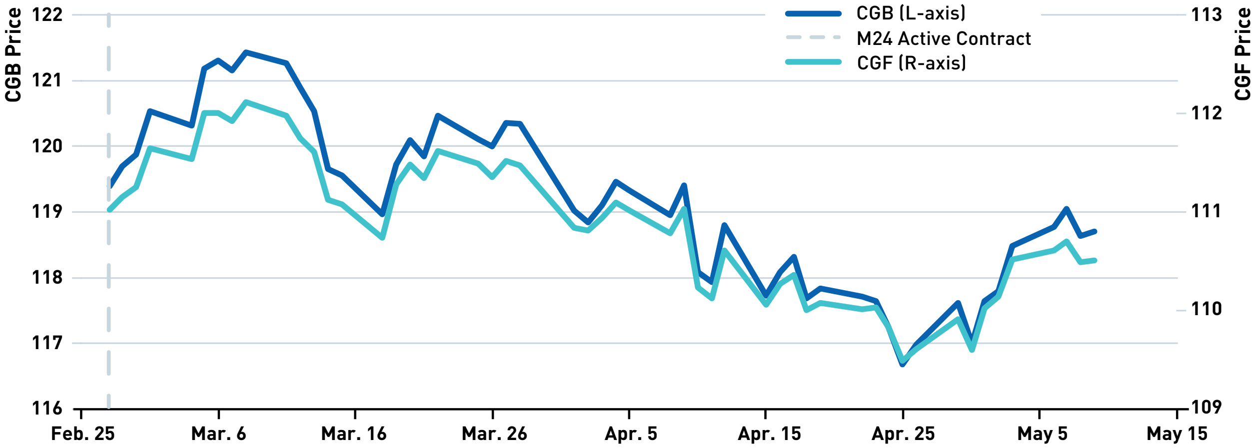
2 Although the delivery period is not shorter, the notice period during the life of the wildcard option is one day shorter under T+1 settlement for bonds versus T+2 settlement.

Speculative Positioning

Ordinarily, we would suspect that speculative positions in algorithmic, normally momentum driven, have been reduced substantially since the price inflection point on April 25th. Figure 1 shows a relatively smooth trend from early March through to the end of April but then a small reversal that should compel profit taking and, most likely, a reduction of risk allocation.

FIGURE 1

CGF & CGB Price, M24s



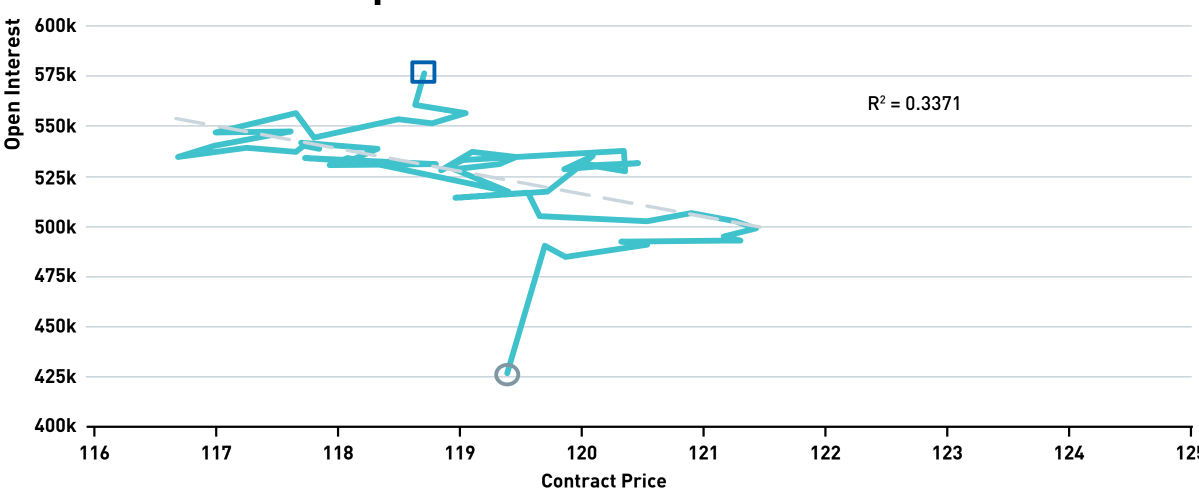
Source: Montréal Exchange

However, the available open interest and price activity doesn't confirm our hypothesis this quarter as the open interest for CGBM24, for example, is higher, not lower, than it was before the price reversal that we would normally term a shakeout, or risk reduction, event for these model portfolios.

Figure 2, in the upper left of the plot area, shows the price reversal that was NOT met with reduced positions in open interest. Of course, it is always possible that momentum models closed positions, but that other, less predictable, investors added even more positions that were closed which resulted in a net addition to open interest for this and other futures contracts, but, from the available data, we can't confirm it.

FIGURE 2

CGBM24 Price versus Open Interest

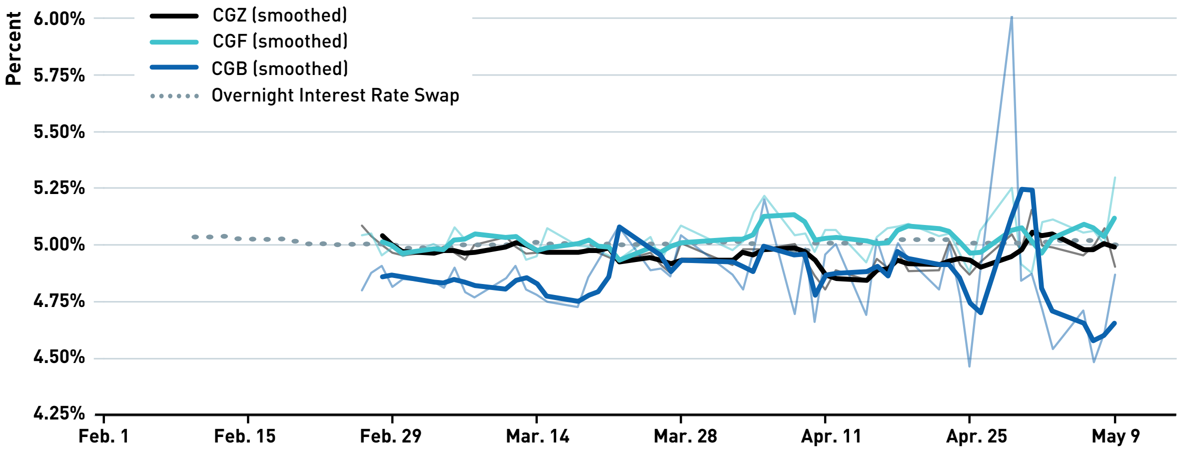


Source: Montréal Exchange

In general, the relationship between the price of futures contracts and the cheapest-to-deliver bond for each contract (measured by the basis or implied repo) was well-behaved this quarter with the exception of a day or two around the April 25th price reversal, as shown in Figure 3. At time of writing, all contracts are reasonably close to fair value once the CGB wildcard value is accounted for.

FIGURE 3

Implied Repo: CGZ, CGF, CGB



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

Cheapest-to-Deliver Switch

As usual, risk of a change to the cheapest-to-deliver bond (CTD) on any contract is minimal. For the CGZ™ (2-year), and CGF™ (5-year) contracts, the alternative delivery bond has an equal or lower coupon so a change wouldn't occur until the yield curve was flat at 6% at the 2-year and 5-year points; a situation far from probable at this juncture.

Although slightly more likely, CGB (10-year) and LGB (30-year) contracts have a low probability to experience a switch of CTD either since it would take a selloff of at least a hundred basis points to introduce any real possibility for each of these contracts. We include, for reference, Figure 4, which shows that a combination of 100 basis points of higher yields plus an unlikely steepening of 6 or more basis points could create conditions where the June 2033 bond would be cheaper to deliver than the December 2032 for the September CGB contract. This scenario would take the form of runaway, long term, inflationary pressure or, perhaps, a supply shock of some sort that was expected to create uncontrollable inflation for several years. We doubt this scenario could transpire with an active and capable central bank.

FIGURE 4

Dec32 Yield

SLOPE	3.02%	3.17%	3.32%	3.47%	**3.62%**	3.82%	4.02%	4.22%	4.42%	4.62%	4.82%	5.02%	5.22%	5.42%	5.62%	5.82%
-5.0	Dec32	Dec32	Dec32	Dec32	**Dec32**	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32
-4.1	Dec32	Dec32	Dec32	Dec32	**Dec32**	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32
-3.2	Dec32	Dec32	Dec32	Dec32	**Dec32**	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32
-2.2	Dec32	Dec32	Dec32	Dec32	**Dec32**	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32
-1.3	Dec32	Dec32	Dec32	Dec32	**Dec32**	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32
-0.4	**Dec32**	**Dec32**	**Dec32**	**Dec32**	**Dec32**	**Dec32**	**Dec32**	**Dec32**	**Dec32**	**Dec32**	**Dec32**	**Dec32**	**Dec32**	**Dec32**	**Dec32**	**Dec32**
1.7	Dec32	Dec32	Dec32	Dec32	**Dec32**	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Jun33	Jun33
3.8	Dec32	Dec32	Dec32	Dec32	**Dec32**	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Dec32	Jun33	Jun33	Jun33	Jun33
5.8	Dec32	Dec32	Dec32	Dec32	**Dec32**	Dec32	Dec32	Dec32	Dec32	Jun33	Jun33	Jun33	Jun33	Jun33	Jun33	Jun33
7.9	Dec32	Dec32	Dec32	Dec32	**Dec32**	Dec32	Dec32	Jun33	Jun33	Jun33	Jun33	Jun33	Jun33	Jun33	Jun33	Jun33
10.0	Dec32	Dec32	Dec32	Dec32	**Jun33**	Jun33	Jun33	Jun33	Jun33	Jun33	Jun33	Jun33	Jun33	Jun33	Jun33	Jun33

Source: Author Calculations

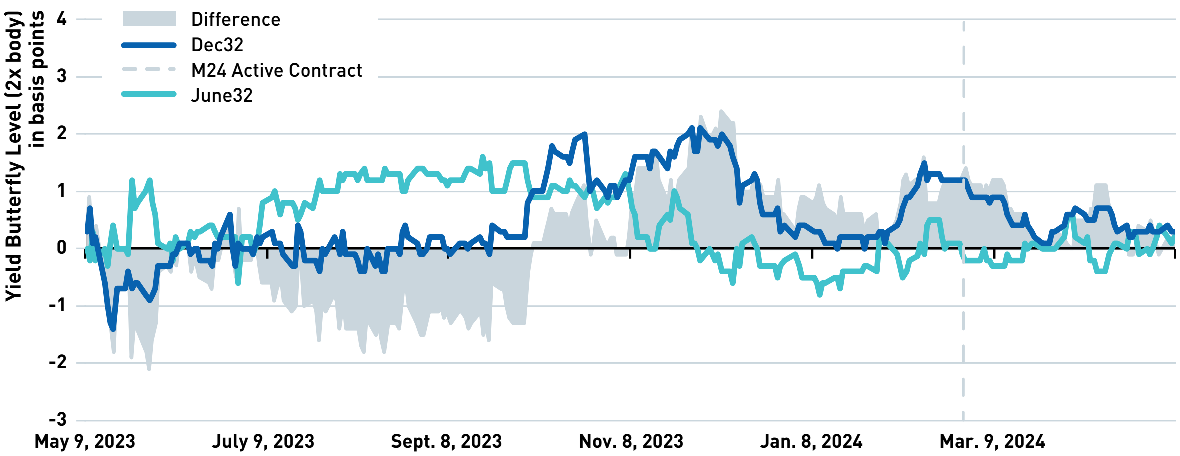
Relative Value of the CTD Bonds

There isn't much of a relative value story to be told in the cheapest-to-deliver (CTD) bonds this quarter. The CGF (5-year) contract has no CTD change between the June and September contracts and, as is normal, neither does the LGB contract.

The June 2032 Canada bond will move out of the delivery basket for the September CGB contract and be replaced as CTD by the December 2032 contract. Although the two bonds have had divergences in relative value recently, there is currently not much of a story, as shown in Figure 5. Perhaps the story is the lack of richening relative to neighbour bonds that is often observed when old 10-year bonds take cheapest-to-deliver status? The resulting liquidity boost has value and the CTD can often trade rich to neighbour bonds except for times of weakness in bond prices when the futures contract, and CTD, are sold heavily as managers and traders demand more liquidity than dealing desks can comfortably provide. The convergence between the values of the outgoing CTD and incoming CTD may just indicate that we've been in a trading range of choppy markets without extreme liquidity demands in a single direction for some time.

FIGURE 5

Jun32 v. Dec32 Yield Butterfly

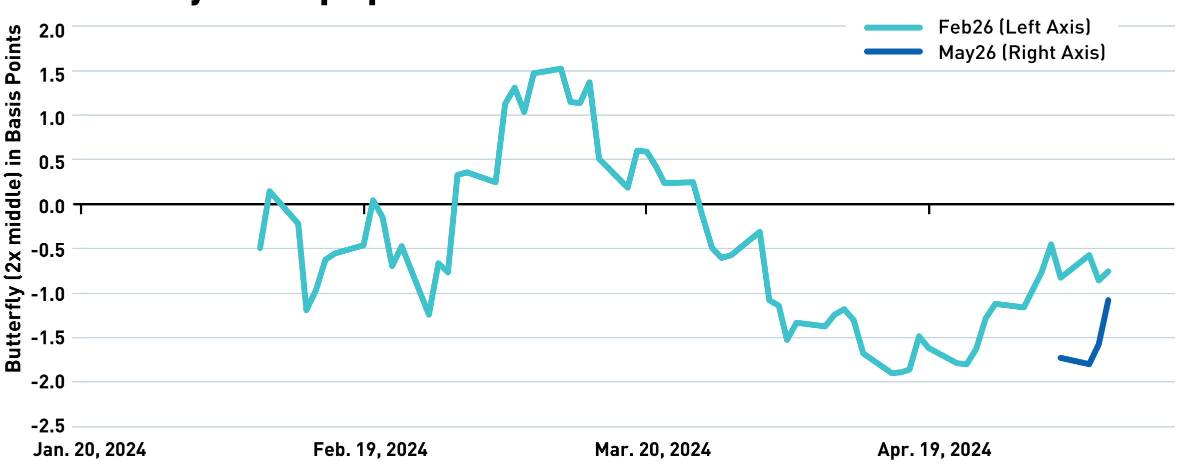


Source: BMO Capital Markets[i] Fixed Income Sapphire database

Even the outgoing and incoming cheapest-to-deliver bonds for the CGZM24 and CGZU24 contract are trading at about the same value, as shown in Figure 6. The longer maturity of the wing bond to create the butterfly has just been issued, which accounts for the short history of the May 2026 butterfly in the figure. Still, almost equal butterfly values at -1 basis point don't give us much room to gauge whether liquidity has been demanded from the bid or the offer side on the two bonds.

FIGURE 6

Feb26 v. May26 Swap Spread Butterflies



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

Key Metrics & Expectations

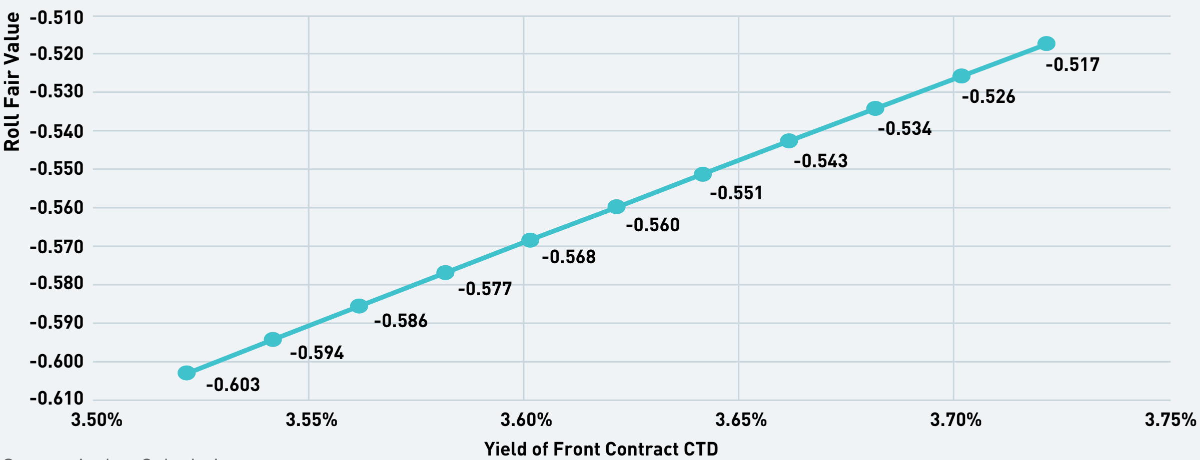
Managers with positions will find a summary of the key metrics for each contract this quarter in Figure 7, Figure 8, Figure 11, and Figure 12. We used closing prices on May 9th and, with the new cheapest-to-deliver bond for the CGB contract, have retired our requirement to reduce the number of CTD bonds outstanding by the holdings of the Bank of Canada since the Bank holds only older bonds that are no longer probable CTD bonds. September contracts have not yet traded so we use the exchange settlement price which is usually not a tradeable price before the roll begins.

CGBM24 to CGBU24

There is, of course, a change in the cheapest-to-deliver bond for the active CGB (10-year) contract this quarter, as there is every May and November recently. This quarter will usher in a cheapest-to-deliver bond with a 50 basis point higher coupon to accompany the 6 months longer maturity versus the CTD for the June contract. The combination of higher coupon and longer maturity results in a very small duration extension as positions roll from June to September. The extension is just 3.7% this quarter and should not be much of a factor in supply/demand discrepancies between the two contracts, nor in creating an extremely volatile intraday roll price. Some managers may be wary of leaving standing orders given that a 5 basis point move in 10-year yields will change the fair value of the roll by up to 2.8 cents as shown in Figure 7.

FIGURE 7

CGBM24/CGBU24 Roll Fair Value v. Rate Level, May 28/24



Source: Author Calculations

Trend-following models built long positions this quarter, but may have taken off some risk recently even though the open interest analysis above can't corroborate this. They are probably long, but almost certainly not at full risk deployment. Since these liquidity seeking portfolios often drive the roll dynamic, we expect to see early pressure to sell June contracts by speculative clients, who aren't concerned with relative pricing. In early May we found the contract slightly rich to cash bonds, after accounting for the wildcard option value, so clients that do care about relative pricing may also choose to roll early if those prices persist into the roll period.

FIGURE 8

CGB Key Metrics

9-MAY-2024	CGBM24	CGBU24	DIFFERENCE
Closing Price	118.700	119.260	-0.560
Cheapest-to-Deliver (CTD)	CAN 2.000% Jun 2032	CAN 2.500% Dec 2032	Change!
CTD Conversion Factor	0.7488	0.7748	
Probable Delivery Date	03-Jun-24	03-Sep-24	
Gross Basis (cents)	-12.0	-59.4	
Net Basis (cents)	2.3	7.1	
Implied Repo (to Prob. Delivery)	4.51%	4.80%	
DV01/100 of CTD	6.5	7.0	7.3%
Open Interest	576,233	0	
CTD Outstanding (millions)	23,405	21,000	-2,405
Front OI Multiple of CTD	2.5x	2.7x	

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

CGZM24 to CGZU24

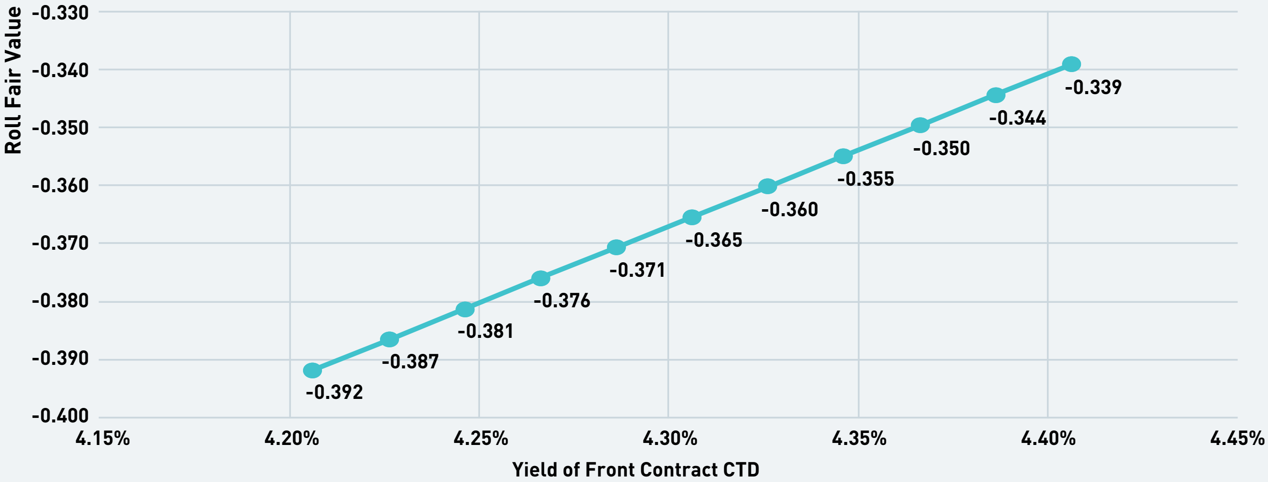
Provided that the current auction schedule is maintained, there will be a CTD change in CGZ (2-year) contracts every quarter. About 15% of the open interest on the CGZ contract tends to be delivered rather than rolled – an unusual amount for futures contracts – so roll activity is a little less than expected most quarters.

The DV01 of the contract will extend by over 14% due to the longer maturity accompanied by a lower coupon on the CTD for the September contract. We warned last quarter that a surprise 50 basis points of looser monetary policy could cause the June contract to switch from negative basis to positive. That not only didn't happen but, given the lower coupon on the September contract, the likelihood of quoting the CGZ contract in positive basis terms has now fallen even further.

As usual for CGZ, where the roll price is unstable due to the DV01 difference between the contracts, some managers should be careful leaving standing orders this quarter as the CGZ roll fair value pricing can easily fluctuate by up to 2 cents intraday as shown in Figure 9. Typically, managers are concerned with unstable pricing at the front end where a cent or two matters much more than in longer term bonds.

FIGURE 9

CGZM24/CGZU24 Roll Fair Value v. Rate Level, May 28/24



Source: Author Calculations

We found CGZM24 contracts to be very fair-priced on our price capture date for this update, but through some of the quarter it tended to trade a little bit cheap relative to bonds which should attract some relative value players. This contract is highly attractive for some front-end relative value specialists given the almost complete lack of any wildcard value. We suspect dealing desks are beginning to utilize the contract very extensively and these desks, obviously, have no limitation to placing standing orders on the roll if necessary. The market already has their full intraday attention.

FIGURE 10

CGZ Key Metrics

9-MAY-2024	CGZM24	CGZU24	DIFFERENCE
Settle Price	102.760	103.220	-0.460
Cheapest-to-Deliver (CTD)	CAN 4.50% Feb 2026	CAN 4.00% May 2026	Change!
CTD Conversion Factor	0.9765	0.9687	
Probable Delivery Date	03-Jun-24	03-Sep-24	
Gross Basis (cents)	-3.1	-35.9	
Net Basis (cents)	0.6	-4.6	
Implied Repo (to Prob. Delivery)	4.90%	5.14%	
DV01/100 of CTD	1.7	1.9	13.2%
Open Interest	246,590	0	
CTD Outstanding (millions)	23,000	26,000	3,000
Front OI Multiple of CTD	1.1x	0.9x	

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

CGFM24 to CGFU24

The cheapest-to-deliver bond on the 5-year (CGF) contract will not change when the September contract takes over as the active 5-year futures contract. For CGF, the value of the wildcard option is often not priced correctly but higher coupons in the past few quarters combined with other factors means the wildcard value is almost a rounding error. The CGF has traded consistently close to fair value this quarter.

Speculative models using CGF are probably not at full risk, but they could still be long since the open interest did not fall on the late April reversal in price trend. If that is the case, selling pressure on the front contract may start early, assuming they roll positions rather than closing, which would be accompanied by similar buying pressure on U24. The roll itself should be very stable as intraday swings in overall yield levels have almost no effect on fair value of the roll when there is no change to the CGF contract cheapest-to-deliver bond.

FIGURE 11

CGF Key Metrics

9-MAY-2024	CGFM24	CGFU24	DIFFERENCE
Closing Price	110.510	110.370	0.140
Cheapest-to-Deliver (CTD)	CAN 4.000% Mar 2029	CAN 4.000% Mar 2029	No change
CTD Conversion Factor	0.9183	0.9221	
Probable Delivery Date	03-Jun-24	03-Sep-24	
Gross Basis (cents)	-6.0	-35.1	
Net Basis (cents)	0.4	-0.7	
Implied Repo (to Prob. Delivery)	4.93%	4.97%	
DV01/100 of CTD	4.4	4.4	0.0%
Open Interest	119,984	0	
CTD Outstanding (millions)	27,000	27,000	0
Front OI Multiple of CTD	0.4x	0.4x	

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

LGBM24 to LGBU24

The LGB (30-year) market has now completely evolved into a "no urgency" mentality when it comes to rolling to new contracts. Since LGB futures have no delivery period or first/last notice dates there is no threat of early delivery to compel investors to roll before first notice day as exists in the other contracts. The roll period tends to be longer and positions are closed or rolled in about the second week of the delivery month.

No embedded wildcard option and no change to the CTD for the LGBU24 contract versus the June contract means roll pricing should be quite stable, although all physical delivery futures this quarter need to contend with the possibility of a Bank of Canada rate cut (currently priced out but it could easily return again) early in the delivery period. The Federal Reserve will make an announcement a week after the Bank of Canada, although that policy date has been priced to a hold position as well. The liquidity providers for this contract do an excellent job of keeping it close to fair value versus bonds and we suspect this roll period will be as orderly as they have been recently, assuming the central banks don't surprise us.

FIGURE 12

LGB Key Metrics

9-MAY-2024	LGBM24	LGBU24	DIFFERENCE
Closing Price	158.650	159.000	-0.350
Cheapest-to-Deliver (CTD)	CAN 2.750% Dec 2055	CAN 2.750% Dec 2055	No change
CTD Conversion Factor	0.5425	0.5437	
Delivery Date	19-Jun-24	18-Sep-24	
Gross Basis (cents)	-16.0	-44.5	
Net Basis (cents)	0.3	12.0	
Implied Repo (to Delivery)	4.96%	4.66%	
DV01/100 of CTD	17.2	17.2	0.1%
Open Interest	1,234	0	
CTD Outstanding (millions)	11,750	11,750	0
Front OI Multiple of CTD	0.0x	0.0x	

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

March Delivery Summary

Delivered contracts were back down to normal levels for the March delivery month after an unusually large quantity of contracts were delivered in December 2023. For CGZH24 and CGFH24, all but a tiny remnant of open interest was delivered in the first two days of the delivery period and no one made much, if any, P(L) from the wildcard option, if they were even playing it.

For CGBH24, there was a large delivery on the second eligible date of March which was probably a wildcard exercise, although the short futures position holder appears to have ignored the remaining value of the option and delivered on the first date that afforded any wildcard profit at all. Although this is a suboptimal decision from a purely mathematical perspective when making an exercise decision, it is one we have observed many times before in wildcard options. We suspect that the declining profitability of these trades means less patience from investors; there are bigger profits to be made by expending energy elsewhere.

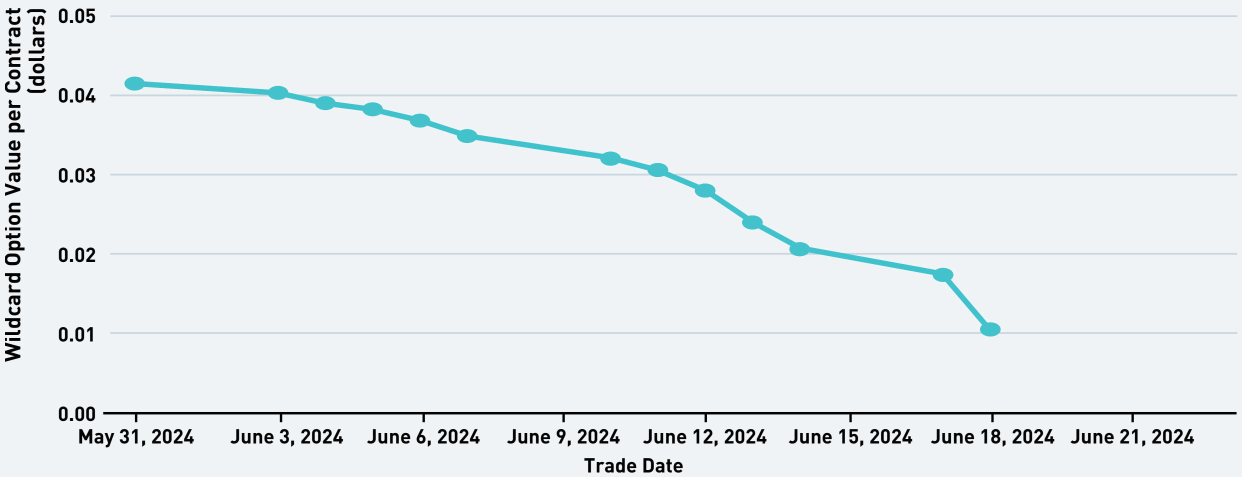
Wildcard Option Value

Normally the only wildcard option worth playing is the option embedded in the CGB contract. This quarter, the slow dive toward lower values has continued due to the shortest delivery period we can recall; partly due to the move from T+2 settlement to T+1. Additionally, there has been much less realized volatility in after hours trading recently which has also reduced valuations due to our quarterly recalibration of the distribution of price changes in afternoon trading.

Notwithstanding our above comments, CGBM24 long positions going into delivery could still experience a Wildcard exercise against their position if it remains open in June. The fair value of the option embedded in the CGBM24 contract has a value of just 4 cents per futures contract which is usually well-reflected in the contract price. In past quarters, when volatility was higher, hedge tails were larger, and there were more days in the delivery period, we've calculated the value of the embedded option at 9 cents per contract which should give the reader some bearing on the slow but steady reduction to wildcard values over the past year or so on CGB contracts. The CGBM24 contract, at time of writing, was reflecting a wildcard option value of about 3.3 cents per contract so, including everything, it is trading about 1 cent rich relative to its cheapest-to-deliver bond.

FIGURE 13

CGBM24 Wildcard Option Value



Source: Author Calculations

LOOKING FORWARD & Opportunities

- Volatile yields and diverging economic performance as well as the expectations for policy from national central banks is probably the most attractive relative value trade in markets today. Recently there have been excellent opportunities between Canadian and US bonds, accessible via futures contracts or in cash markets. We will look at some strategies in upcoming publications.
- Futures contracts, since they trade to a "fair value" relative to cash bonds that is established by a cash-and-carry arbitrage, are price sensitive to short term interest rates. Investors should be aware that, for example, a re-pricing of the CGBU24 contract from a 4.86% implied repo rate to a 4.5% implied repo rate on June 5th would result in a price reduction for the contract of about 10 cents, all else equal. While we agree that, given a surprise result such as this at the next Bank of Canada meeting, nothing else would be equal, we include this information for investors that have begun to use futures as a substitute for cash bonds. They ARE a good substitute but they also have a leverage, or financing, component which makes them sensitive to short term rates, especially near the start of the contract quarter.
- A reminder, again, that by the time investors are reading this, Canada and the USA will have either changed to T+1 settlement for contracts as well as bonds or will be on the verge of doing so. Make appropriate changes to your models and calculations.

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