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MONTRÉAL EXCHANGE

2023: The Future of Futures

The turn of the year brings numerous articles predicting the future of the economy, markets, and securities prices, most of which are eventually revealed to be wrong, like many predictions. However, the structure of physical delivery futures contracts and the predictable nature of modern bond issuance allows us to prognosticate with near certainty about some aspects of the futures market in Canada.

Fewer Wildcard Options than 2022

Investors that utilize fixed income futures for hedging purposes or as a substitute for cash bonds will be happy to learn that Wildcard options[1] embedded in physical delivery Canadian bond futures will be less common in 2023 than they were in 2022.

The first, and most obvious explanation for the diminished Wildcard activity is the elimination of the delivery period for the 30-Year Government of Canada Bond Futures (LGB™) contract in Canada that occurred starting with the March 2023 contract. For all of 2022 the LGB contract had a very valuable option embedded in the price and tended, perhaps obviously, to trade well below the cash-and-carry arbitrage value one would expect for a futures contract since the buyer of LGB contracts needed to be compensated, via a lower price, for bearing the risk of an expensive Wildcard delivery. With the elimination of the delivery window, no Wildcard option exists in this contract in 2023 and the LGB contract will become a better, less risky, hedge instrument.

A less obvious reason that investors will hear less about Wildcard options is the progressively higher coupon bonds that are steadily working their way into the delivery baskets for the Ten-Year Government of Canada Bond Futures (CGB™) and the Five-Year Government of Canada Bond Futures (CGF™) contracts. Wildcard-savvy investors know that a lower conversion factor, which is a result of lower coupons[2] results in higher profit opportunities since the hedge tail is larger for cheapest-to-deliver bonds with lower conversion factors. However, the relationship between hedge tails and conversion factors is also non-linear so the profit opportunities associated with very low conversion factors will be significantly diminished in 2023 and 2024.

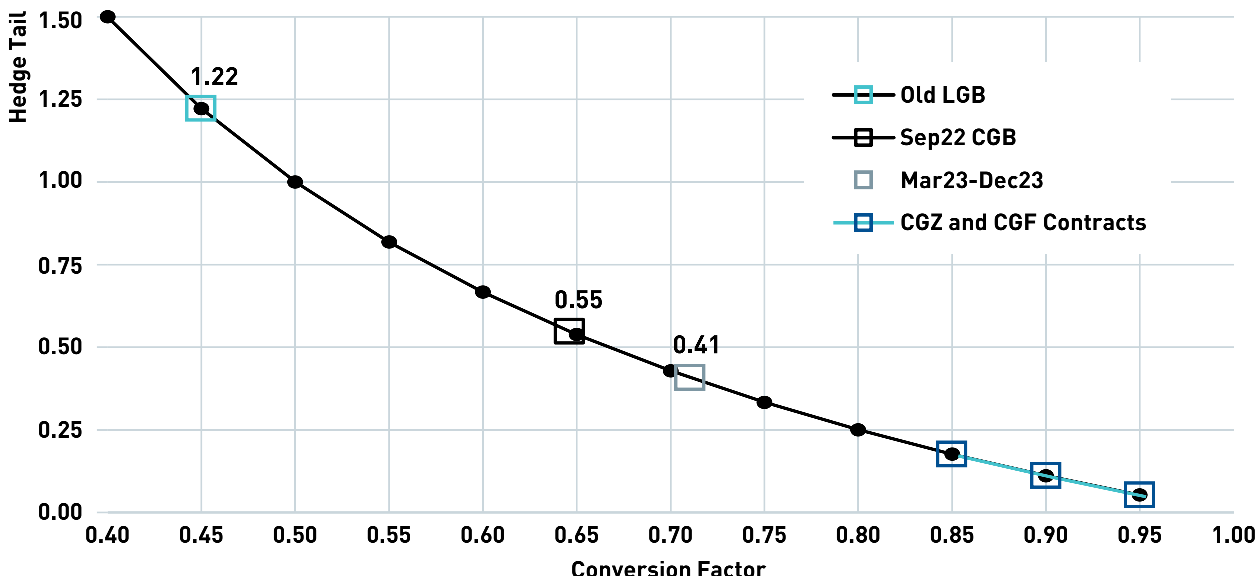
In Figure 1, we show the non-linear relationship between hedge tail, the amount of bonds left over after fulfilling delivery obligations, and conversion factor. We have labelled the 2022 LGB (30-year) contract, which had conversion factors of about 0.45 and hedge tails of about 1.2, as well as the September 2022 CGB (10-year) contract, which had conversion factors below 0.65. In addition, we show the 2023 conversion factors for CGB contracts, which will exceed 0.71. Finally, the figure also shows the very low hedge tails that the high conversion factors for deliverable bonds in the Two-Year Government of Canada Bond Futures (CGZ™) and CGF (5-year) contracts generate; a key reason why these contracts have almost no Wildcard potential every quarter.

As can be seen for CGB between the 2022 and 2023 contracts, hedge tails fall from about 0.55 to 0.41, a decrease in profit potential for Wildcard players of more than 25%. Lower profit opportunities should lead to less participation in this market after the March 2023 CGB contract as progressively higher conversion factors bleed the profit potential from CGB Wildcard trades.

1 The short position in a physical delivery futures contract can capitalize on price movements of the cheapest-to-deliver bond after the settlement price for the contract is determined but before delivery notification must be made to the exchange.

2 Lower coupons and longer maturities but the maturity is roughly constant for qualifying bonds in Canadian fixed income futures delivery baskets.

FIGURE 1
Hedge Tail v. Conversion Factor



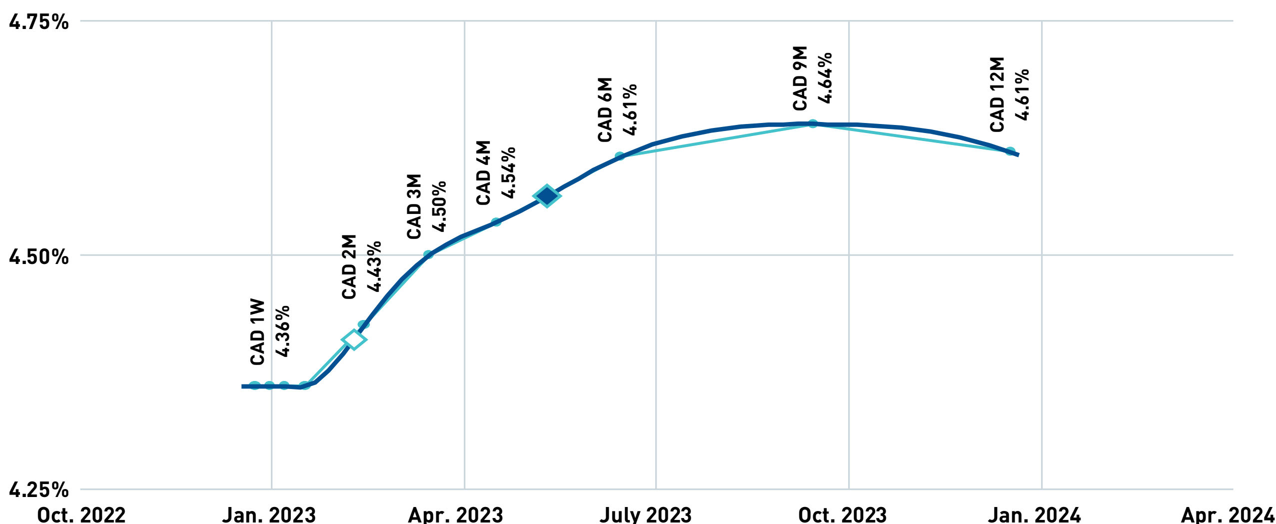
Source: Montréal Exchange, Author calculations

Negative Gross Basis all Year

Another aspect of 2023 that we can predict with reasonably high probability is that all Montréal Exchange fixed income futures will trade at a negative gross basis level. The gross basis is the price at which an investor can execute a cash-and-carry arbitrage trade by simultaneously buying a cash bond and selling a futures contract, or vice versa. When yield curve conditions are normal, deliverable bonds have coupons which exceed the overnight target rate and a cash-and-carry futures arbitrage where the investor is short futures and owns cash bonds (long the futures basis) is a positive carry trade. However, when overnight rates exceed coupon rates on the deliverable bonds, a long futures basis position is expected to be negative carry and the gross basis falls below zero to compensate the long basis holder for the negative carry; an event that sometimes causes confusion as most investors expect basis quotes to be positive[3].

With the Bank of Canada target rate expected to exceed 4% for all of 2023, as shown in Figure 2, and all currently deliverable bonds, plus any hypothetical new bonds given current yield levels (bearing coupons lower than 4%), we can logically presume that the negative basis levels that were quoted for the latter half of 2022 will continue throughout 2023 for all contracts. For example, the CGF (5-year) contract will have deliverable bonds with coupons of 2.75%, 3.5%, and perhaps a new 5-year bond later in the year with a 3.25% coupon; all these bonds would result in negative gross basis prices unless the Bank of Canada launches a very unexpected easing of monetary policy.

FIGURE 2
CAD Overnight Index Swap



Source: BMO Capital Markets' Fixed Income Sapphire database

3 Investors interested in a more thorough explanation of negative basis can refer to "Forecasting/Understanding Negative Basis in Futures" published by Montréal Exchange in April 2021.

Delivery Switch Will Occur in June

Continuing the topic of new bonds, issuance of a new 30-year bond is very likely to cause the first cheapest-to-deliver switch in recent memory when the new bond qualifies to be included in the LGB (30-year) contract basket of deliverable bonds.

The most recent Bank of Canada auction schedule indicated a new 30-year bond will be auctioned for the first time on January 26th and again on March 30th, with a 3rd auction possible, but still not announced, at the end of April. Recent auctions of long bonds have been for either $1.5 billion or $2 billion so, if that trend continues, the new 2.75% December 2055 bond will probably build to at least $3.5 billion outstanding before June which would qualify it for inclusion in the deliverable basket of bonds for the LGBM23 contract (30-year expiring in June 2023). Inclusion in the basket will immediately make the new bond the cheapest-to-deliver bond for the contract[4] so that, following, and even anticipating this event, the futures contract will trade as a substitute for the 2.75% 2055 bond rather than the 2% December 2051 bond. The plausible range of cheapest-to-deliver outcomes for combinations of yield to maturity and yield difference (slope) between the 2051 and the 2055 bond are shown below in Figure 3.

FIGURE 3

	Dec51 Yield															
SLOPE	2.00%	2.25%	2.50%	2.75%	**3.00%**	3.25%	3.50%	3.75%	4.00%	4.25%	4.50%	4.75%	5.00%	5.25%	5.50%	5.75%
-5.0	Dec51	Dec51	Dec51	Dec51	**Dec51**	Dec51	Dec51	Dec51	Dec51	Dec51	Dec51	Dec51	Dec51	Dec51	Dec51	Dec51
-4.0	Dec51	Dec51	Dec51	Dec51	**Dec51**	Dec51	Dec51	Dec51	Dec51	Dec51	Dec51	Dec51	Dec51	Dec51	Dec51	Dec51
-3.0	Dec51	Dec51	Dec51	Dec51	**Dec51**	Dec51	Dec51	Dec51	Dec55	Dec55	Dec55	Dec51	Dec51	Dec51	Dec51	Dec51
-2.0	Dec51	Dec51	Dec51	Dec51	**Dec51**	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec51	Dec51
-1.0	Dec51	Dec51	Dec51	Dec55	**Dec55**	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec51
0.0	**Dec51**	**Dec51**	**Dec55**	**Dec55**	**Dec55**	**Dec55**	**Dec55**	**Dec55**	**Dec55**	**Dec55**	**Dec55**	**Dec55**	**Dec55**	**Dec55**	**Dec55**	**Dec55**
2.0	Dec55	Dec55	Dec55	Dec55	**Dec55**	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55
4.0	Dec55	Dec55	Dec55	Dec55	**Dec55**	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55
6.0	Dec55	Dec55	Dec55	Dec55	**Dec55**	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55
8.0	Dec55	Dec55	Dec55	Dec55	**Dec55**	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55
10.0	Dec55	Dec55	Dec55	Dec55	**Dec55**	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55	Dec55

We are uncertain of the importance of this event for the pricing of the LGBM23 contract. On the one hand, virtually everyone in the market will know this information in advance. Knowledgeable market participants should anticipate from the outset that the contract will have a new cheapest-to-deliver bond and price the contract accordingly. However, we have sometimes observed pricing anomalies between futures and cash bonds, often associated with uncertainty and often in contracts with less daily activity and open interest such as is currently observed in the LGB (30-year) contract. Further, there is some risk that the two bonds vying for CTD status will switch back and forth, perhaps repeatedly, causing unexpected price fluctuations and transaction costs for hedged portfolios.

CORRA Futures (Slowly) Replace Canadian Bankers' Acceptance Futures

Although less certain than our other "predictions" for the Canadian futures market above, since it doesn't flow from existing or highly likely bond issuance, we expect CORRA (Canadian Overnight Repo Rate Average) futures will eclipse, or nearly eclipse, Three-Month Canadian Bankers' Acceptance Futures (BAX™) by year end 2023.

Hardly a new concept, the transition to a truly risk-free short-term reference rate for derivatives in Canada was conceived and begun shortly after the beginning of the Great Financial Recession in 2008[5]. However, 2023 will likely mark the end of the long-anticipated transition from CDOR (Canadian Dollar Offered Rate) to CORRA contracts as key dates in the transition plan are now upon us.

4 Assuming no large change in long-term interest rates. Further, the 2053 bond which is also in the delivery basket, is not a factor here.

5 Interested readers can refer to the TMX/Montréal Exchange CORRA Futures Transition website.

Specifically, January 9th, 2023, brought the first important milestone which will slowly chip away at the liquidity of BAX contracts while transitioning that activity and liquidity to CORRA contracts. On that date, new interbank swaps became CORRA referenced, rather than CDOR referenced. That means the new standard for swap spread hedging between dealers of Canadian dollar swaps is now CORRA. March 27th, 2023 will extend the new CORRA standard to swaptions and cross-currency swaps between dealers while June 2023 will mark the end of over-the-counter[6] CDOR-based derivatives being offered by Canadian dealers[7].

We expect inter-dealer liquidity and hedging activity moving to CORRA futures in the first half of 2023 to slowly augment volume and liquidity in Three-Month CORRA Futures (CRA™) over the course of 2023. Certainly, in a market where fractions of a basis point can be important, few investors will be taking their June 2024, and later, contracts to expiry and risking the well-documented and standardized but still uncertain forced conversion to CORRA. That means the likely final BAX contract that could be the money market standard would be the March 2024 contract, but we strongly believe most activity will have moved over to the corresponding CRA contract many months before this contract becomes the front contract, as non-dealer swap participants will probably face wider bid/ask spreads for non-CORRA products since swap desks are now hedging with CORRA-based products. Price sensitive clients (almost ALL sophisticated swap counterparties!) transacting in CORRA referenced swaps will drive liquidity into the new products, and speculators, always attracted to established liquidity when contemplating their exit strategy, will quickly follow once a tipping point is reached.

6 Notably, BAX contracts will still exist and will not be fully converted to CRA contracts until Q2 2024.

7 With the potential exception of hedging pre-existing exposure.

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