Quantitative Tightening – Watching the Paint Dry?

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April 2022 Presentation to TABE

North American Rates Forecasts

Table: Canadian interest rates (end of period)

Variable	2022 1-Apr	2022 Jun	2022 Sep	2022 Dec	2023 Mar	2023 Jun	2023 Sep	2023 Dec
Overnight target rate	0.50	1.25	1.75	1.75	2.00	2.25	2.25	2.25
98-Day Treasury Bills	0.75	1.30	1.75	1.75	1.95	2.20	2.15	2.10
2-Year Government Bond	2.35	2.55	2.60	2.65	2.70	2.65	2.75	2.50
10-Year Government Bond	2.45	2.55	2.60	2.70	2.75	2.60	2.60	2.40
30-Year Government Bond	2.39	2.45	2.55	2.60	2.65	2.50	2.45	2.45
Canada - US T-Bill Spread	0.23	0.18	0.10	0.05	0.10	0.10	-0.15	-0.30
Canada - US 10-Year Bond Spread	0.07	0.15	0.00	0.10	0.10	-0.10	-0.05	0.00
Canada Yield Curve (10-year — 2-year)	0.10	0.00	0.00	0.05	0.05	-0.05	-0.15	-0.10

Table: US Interest rates (end of period)

Variable	2022 1-Aprr	2022 Jun	2022 Sep	2022 Dec	2023 Mar	2023 Jun	2023 Sep	2023 Dec
Federal funds rate	0.375	1.125	1.625	1.625	1.875	2.125	2.375	2.375
91-Day Treasury Bills	0.52	1.13	1.65	1.70	1.85	2.10	2.30	2.40
2-Year Government Note	2.43	2.20	2.40	2.40	2.50	2.70	2.70	2.50
10-Year Government Note	2.38	2.40	2.60	2.60	2.65	2.70	2.65	2.40
30-Year Government Bond	2.43	2.50	2.55	2.60	2.60	2.65	2.70	2.70
US Yield curve (10-year — 2-year)	-0.05	0.20	0.20	0.20	0.15	0.00	-0.05	-0.10

- CIBC Expects the Bank of Canada (BoC) to hike rates to 1.75% by the end of 2022
- For the Fed, we see the funds rate reaching 1.625% by the end of 2022
- Longer-term yields look close to their ‘peak’, and we expect 10yr and 30yr yields to rise over the balance of 2022, albeit at a much slower rate
- The short-end, given our policy forecasts, are also only likely to experience a smaller selloff from current levels
- There is enough carry in the market to not be all that scared of duration right now
- We see 2s10s yield curve inversion being more sustainable in 2023

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Outline of Today's Presentation

1. A Quick Lookback at North American QE Programs

2. The Basic Mechanics & Considerations of Quantitative Tightening (QT)

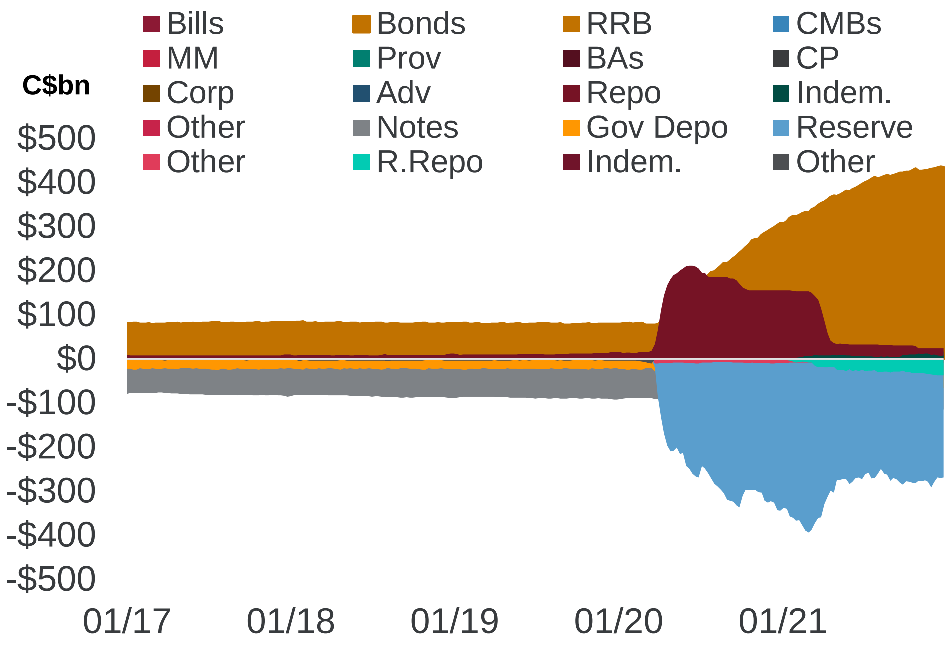
3. Bank of Canada QT → What Can we Expect?

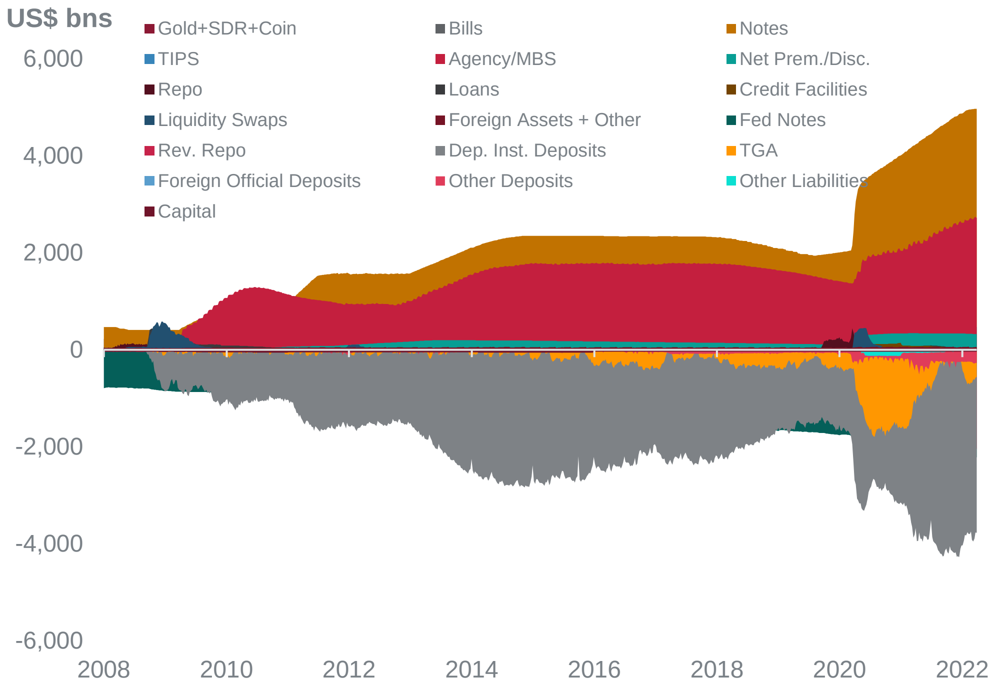
4. Federal Reserve QT → What Can we Expect?

5. Primary Market Implications

6. Q&A

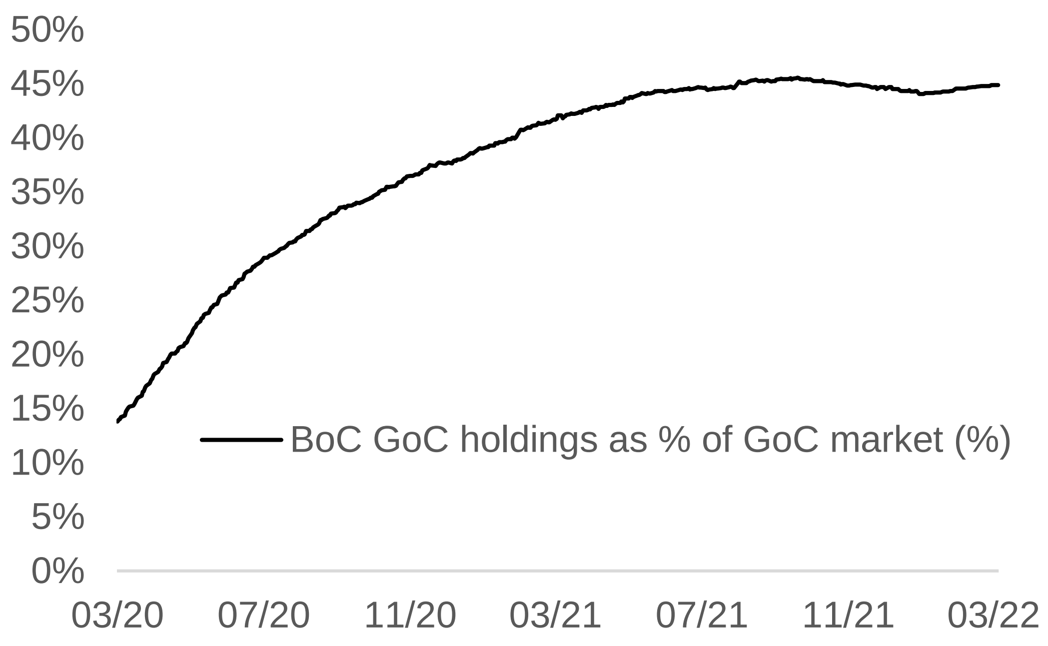
Evolution of BoC & Fed Balance Sheets

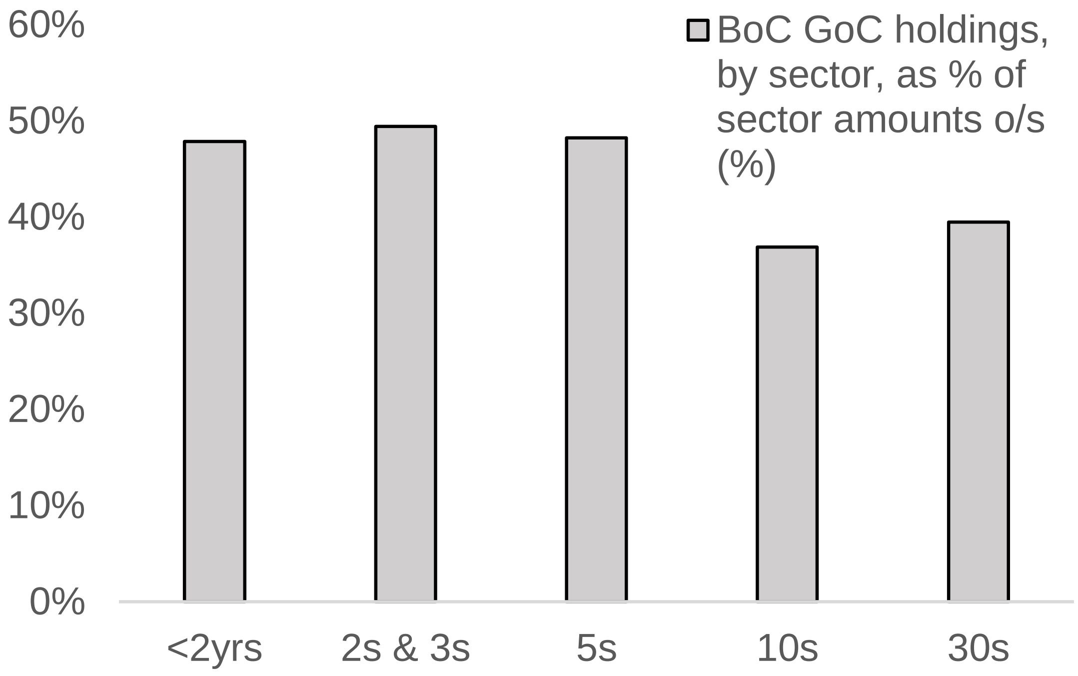




Source: Bank of Canada, Federal Reserve, CIBC

Bank of Canada QE – It was Always Far Too Large





- The size of the Bank's Government Bond Purchase Program (GBPP) was not calibrated correctly for the size of our market
- As we will discuss, the scarcity of off-the-runs has contributed to severe dislocations across the curve

Source: Bank of Canada, CIBC

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Mechanics of QT – It’s just a big accounting identity

- The mechanics of quantitative tightening (QT) are easy enough to understand, but often misunderstood
- At the most basic level, QT works through the balance-sheet as an accounting identity
- **Stylized Order of Operations: 1) a bond matures; 2) Fed debits the U.S. Treasury account; 3) Treasury issues more bonds to get that account back up; 4) Someone else buys those bonds, has their bank wire cash to the Treasury account at the Fed; 4a) it is that wiring of cash that causes bank reserves to go down**
- Note that active QT (i.e. the process of a central bank selling assets rather than not reinvesting matured bonds) has slightly different mechanics. Namely, the speed at which bank reserves falls is much faster and more pronounced under an active program
- But reserves/settlement balances can also decline organically. As central banks stop QE/reinvestment, the composition of liabilities begins to shift (for example, growth in currency in circulation) and that creates a secondary source for reserve drainage
- Note that bank deposits also go down, mostly on the corporate side, as new bonds must be replaced by the private sector

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Example of how non-banks reduce bank deposits

In QE world, think of what happens to balance sheets for say C$100.0bn of QE where there are JUST three players (BoC, non-banks, banks):

BoC:
Liabilities: -C$100.0bn of reserves
Assets: +C$100.0bn of bonds

Non-Banks:
Assets: -C$100.0bn of bonds, +C$100.0bn of deposits

Banks:
Assets: +C$100.0bn of reserves
Liabilities: -C$100.0bn of deposits

Remember:

- As long as the BoC buys bonds from non-banks, then it increases the size of deposits in the system
- If the BoC buys from banks, you basically have no change in non-bank assets, and hence no deposits created in the banking system
- If you reverse this, you destroy deposits
- LCR complicates this to a degree, because the 'type' of deposit that gets created is really important for what the banks actually have to do with the rest of their balance sheets

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Choosing the right ‘type’ of QT – passive versus active

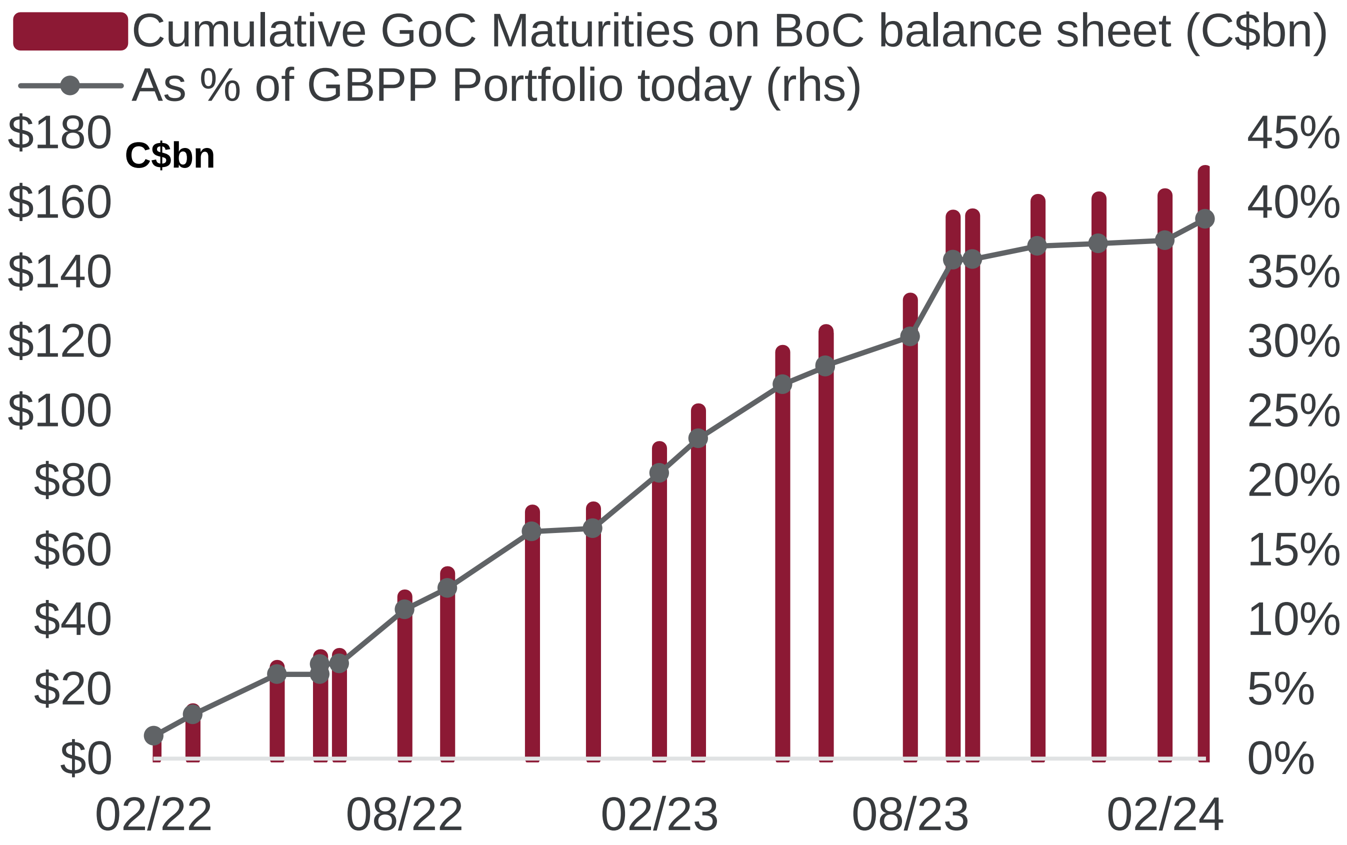
Why choose a passive QT program?

- Transparent maturity schedule = transparent reserve drainage
- Less disruptive to the level of rates and the shape of the term-structure
- Compliments a faster pace of hikes via financial conditions
- Smaller hit to equity capital of the central bank
- Maturities are continuous (like the United States)

Why choose an active QT program?

- Faster pace of reserve drainage
- To increase term-premia (via public-to-private sector supply handoff) in order to un-invert the curve
- Compliments a slower pace of hikes via financial conditions
- Larger hit to equity capital of the central bank; who has indemnity agreements?!?
- Maturities are discrete (like Canada)

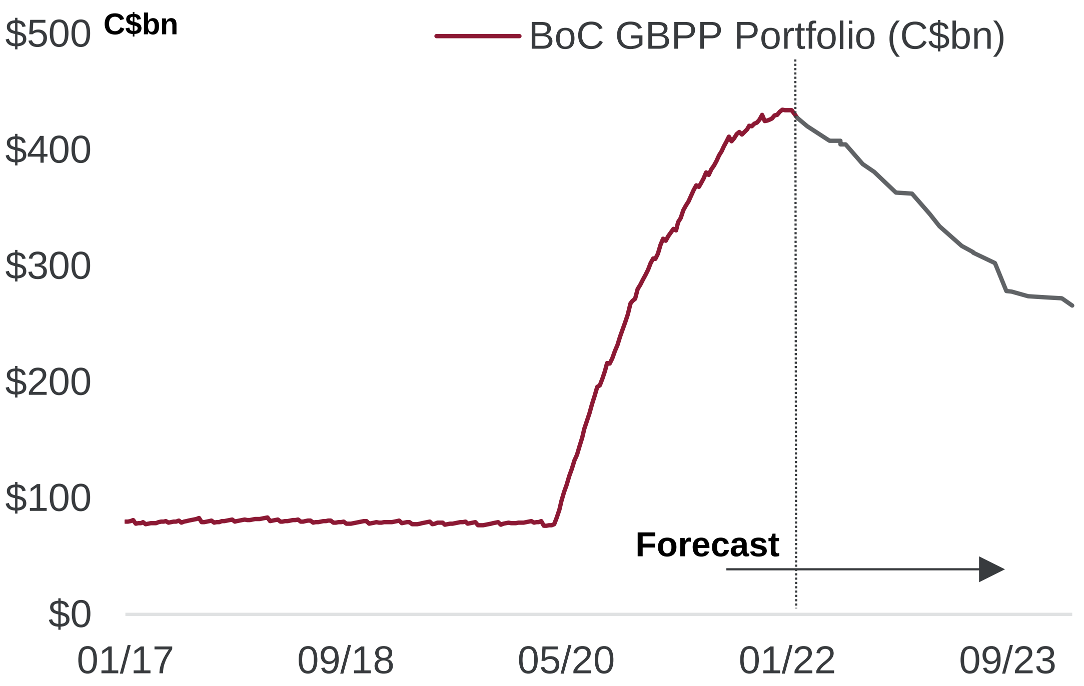
Bank of Canada QT – Discrete maturities

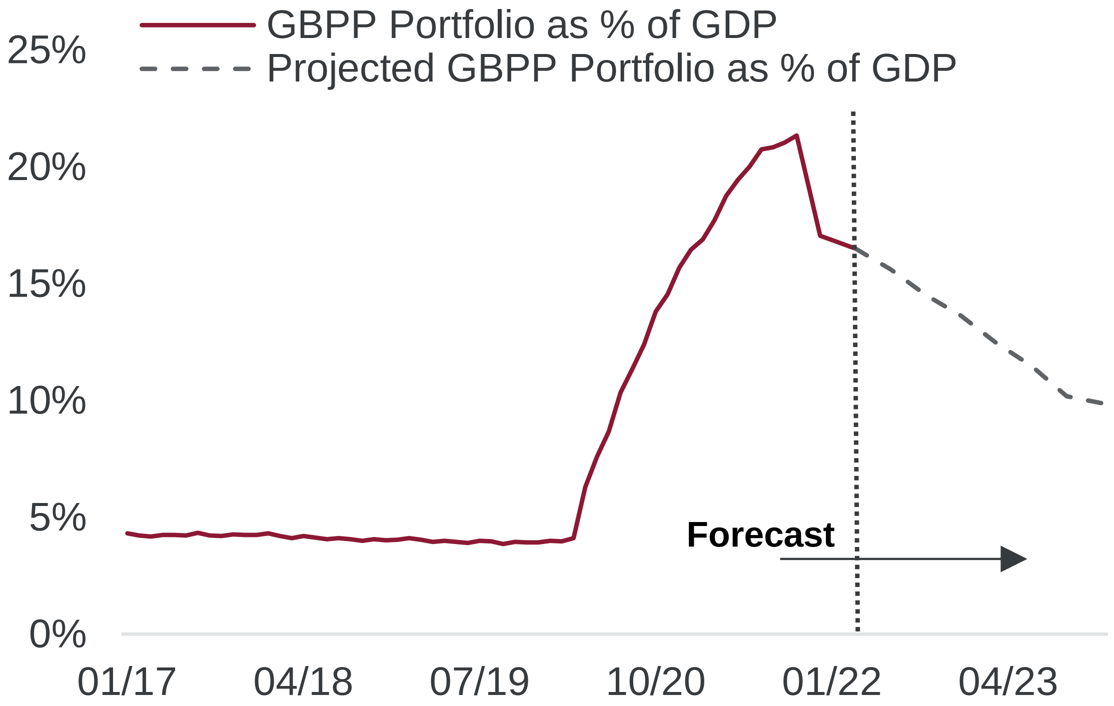


- The Bank of Canada (BoC) is likely to introduce a passive QT program despite discrete maturities that are spread out
- We expect the Bank to stop reinvestment of it's GBPP holdings at the April meeting, as well as stop primary purchases of bonds at auction (note: I'm very nervous about that last point…)
- This is directly a function of the dislocations created by QE that QT aren't likely to be able to fix
- Over the next two years, a passive program would allow the BoC to shrink its GBPP portfolio by nearly 40.0%

Source: Bank of Canada, Bloomberg, CIBC

Bank of Canada QT – Forecasting the GBPP Portfolio

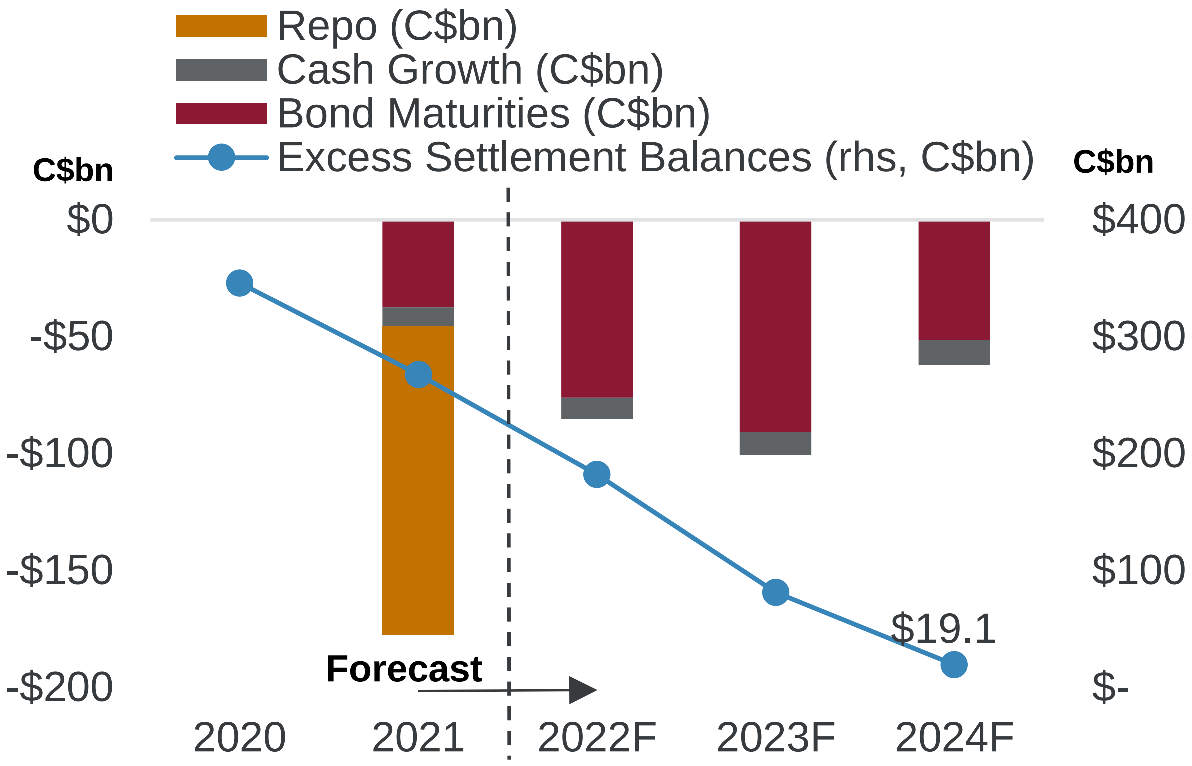




- A passive QT program (that also sees primary purchases fall to zero) would shrink the GBPP portfolio to ~C$275.0bn by Q3-23
- As a proportion of GDP, we forecast the GBPP portfolio to fall to just under 10.0% from a peak of nearly 20.0%

Source: Bank of Canada, CIBC

Bank of Canada QT – Forecasting Excess Settlement Balances



- One of the most important impacts of QT will be the associated drainage of excess settlement balances
- A passive QT program from the BoC should be able to reduce balances aggressively over the coming two years
- The BIG question is, how does the introduction of Real Time Rail (RTR) in 2023 impact the optimal amount of settlement balances in Lynx
- We believe that RTR means balances will **need** to be higher than pre-pandemic, and we see ~C$20.0bn being a good estimate given the information we have today

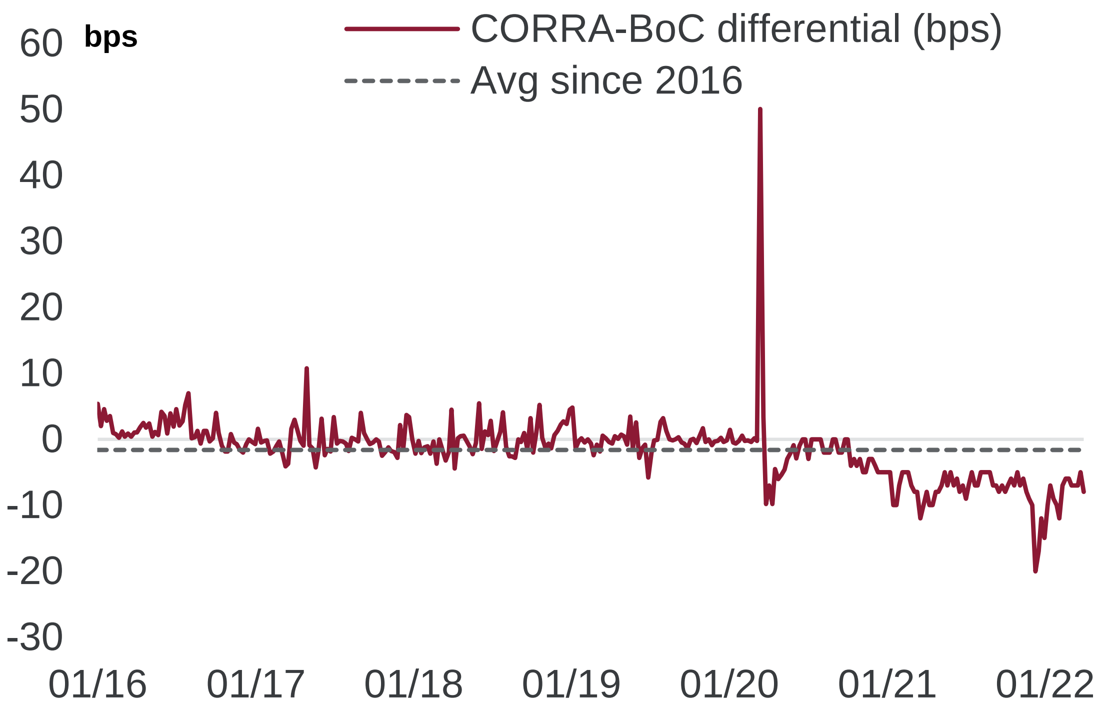
Source: Bank of Canada, Bloomberg, CIBC

FOMC QT – Our Expectations

- CIBC expects the Fed to begin QT at the June meeting
- Similar to the BoC, we see the Fed conducting a passive QT program across both USTs and MBS
- Unlike the BoC though, we expect the FOMC to reintroduce maturity caps on maturities; we expect UST caps to start at USD$45.0bn and MBS caps to start at C$30.0bn. We see terminal UST caps at USD$75.0bn and MBS caps at USD$55.0bn (note: we see caps being re-calibrated once every two months)
- We also look for the Fed to rundown its entire t-bill portfolio, similar to the Bank of Canada
- Principles of normalization help to inform us of the ‘end point’ of the Fed’s QT program. Our baseline scenario sees the Fed shrinking the balance-sheet by USD$600bn in 2022 and an additional USD$1.0trn in 2023
- That should put the size of the balance-sheet around USD$7.0trn by end of 2023
- But unlike the Bank, the Fed has to calibrate its QT program to the most sensitive part of the reserves demand curve, and we see resting reserves of USD$2.0trn being the sweet-spot
- We also expect a redistribution of holdings, away from MBS towards USTs

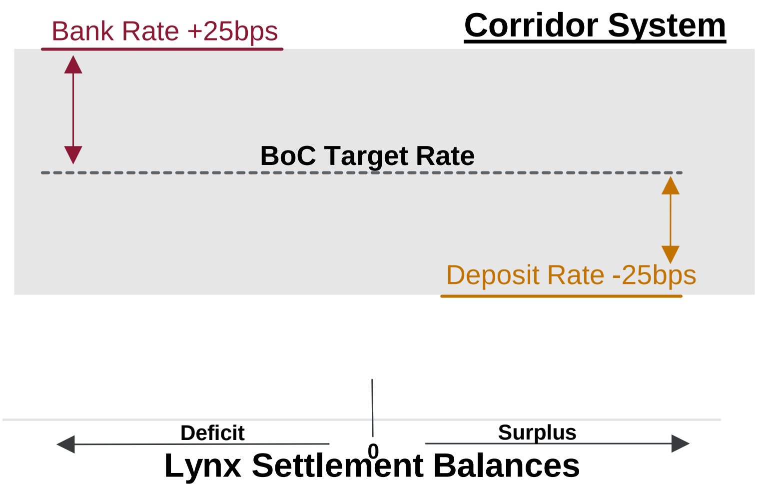
Primary Market Implications

Market Implication #1– Short Rate Normalization

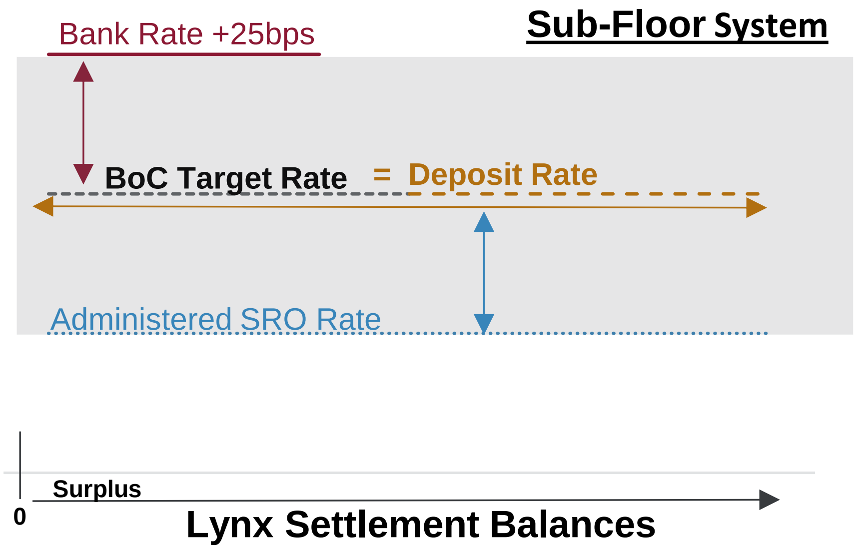


- A primary impact of QE was the amount of settlement balances that were created as a result
- These settlement balances have exerted downward pressure on short-rates, like CORRA, as cash overwhelmed the system
- As QT progresses, for the reasons we outlined earlier, settlement balances will fall and that should remove some pressure on CORRA
- Higher CORRA allows for stronger policy transmission, but also narrows FRA-OIS and will allow cash bonds to outperform matched-maturity OIS

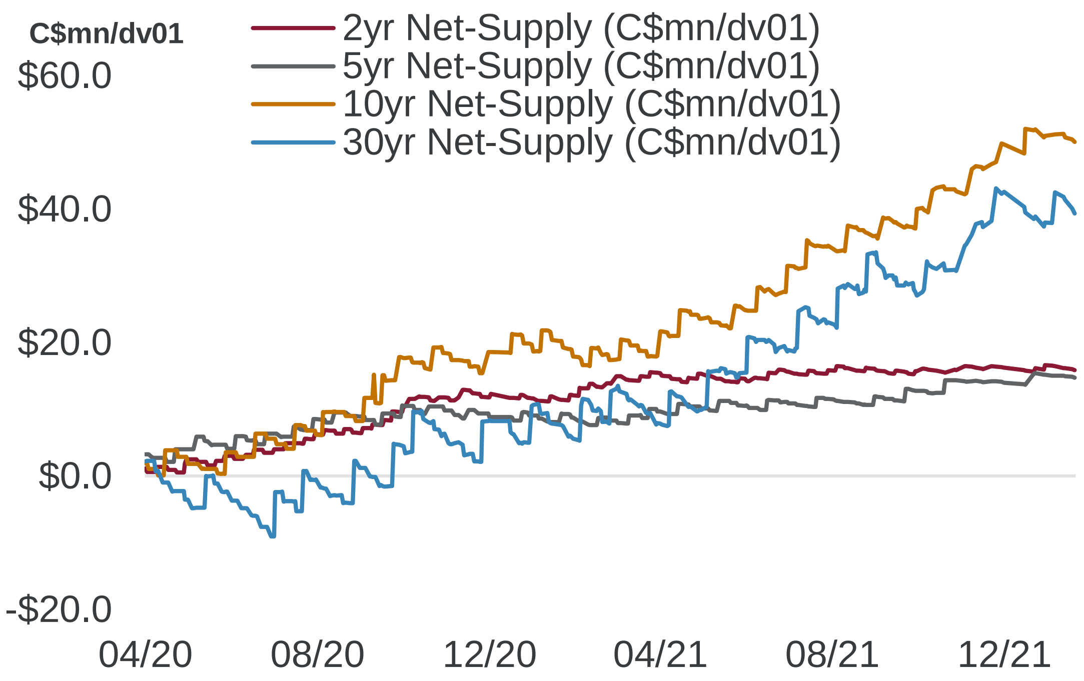
BoC Policy Implementation Adjustments – Floor is the new Corridor

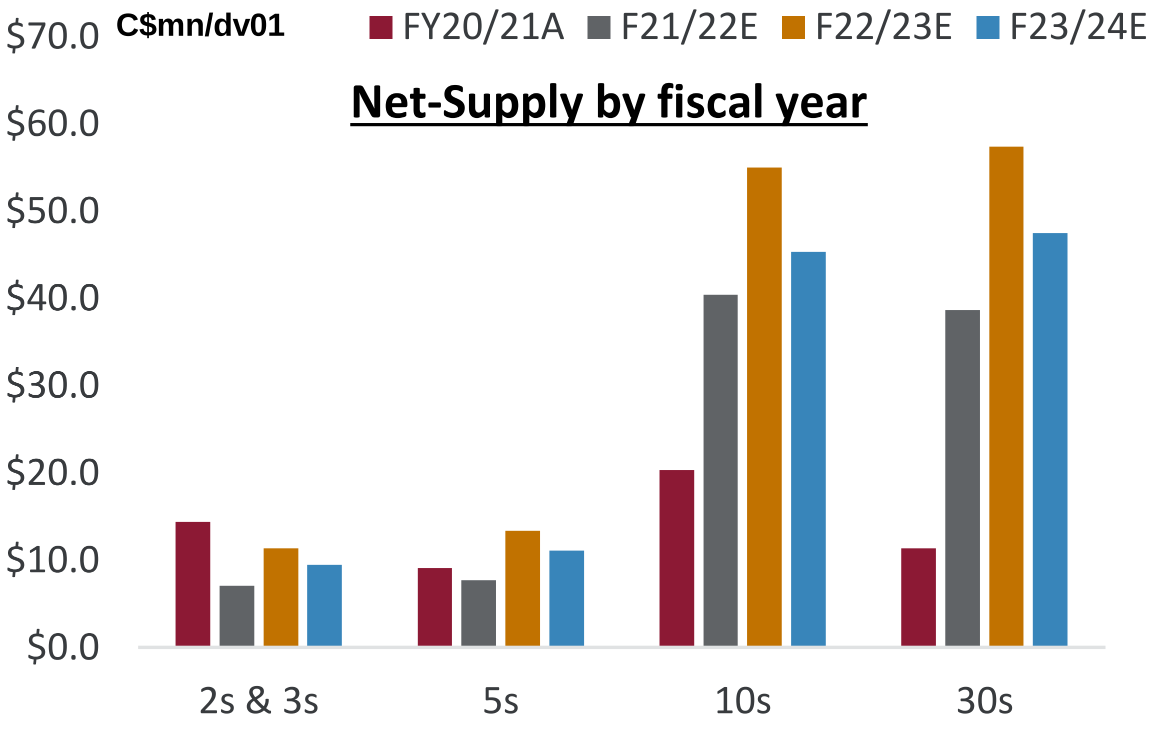


- The BoC has lost the ability to use the historical 'corridor system' to implement monetary policy
- This reflects inability to sterilize purchases, meaning the BoC now relies on a sub-floor system
- We expect this system to persist until the balance sheet has been reduced significantly



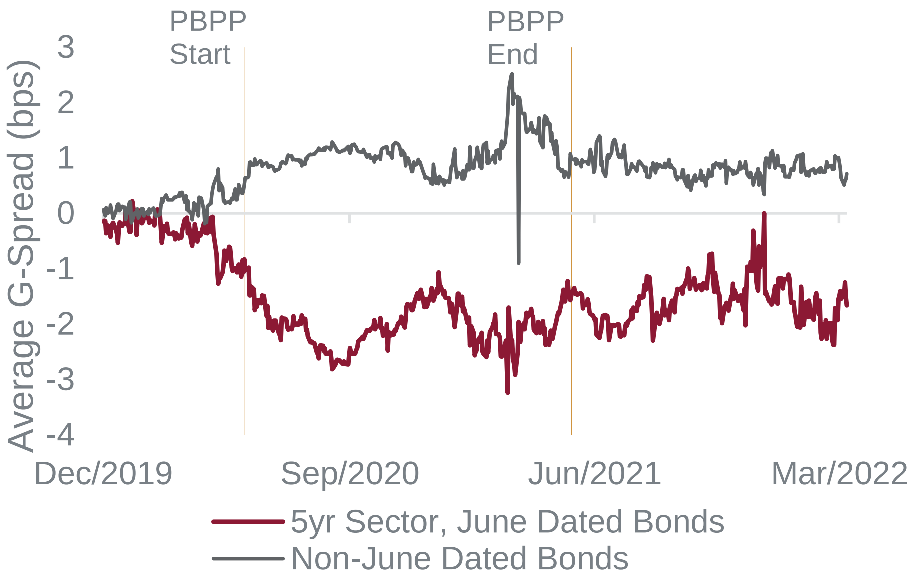
Market Implication #2– Net Supply Impact





- The GBPP took out a huge amount of bonds from the market, reducing the available free-float to the private sector
- Net-supply, as measured in dv01 terms, has already begun to rise after each subsequent taper in 2021
- QT will accelerate the build in net-supply, from C$35.0bn in FY21/22 to C$105.0bn in FY22/23
- This will put some steepening pressure on the yield curve, as well as narrow swap spreads/asset swaps

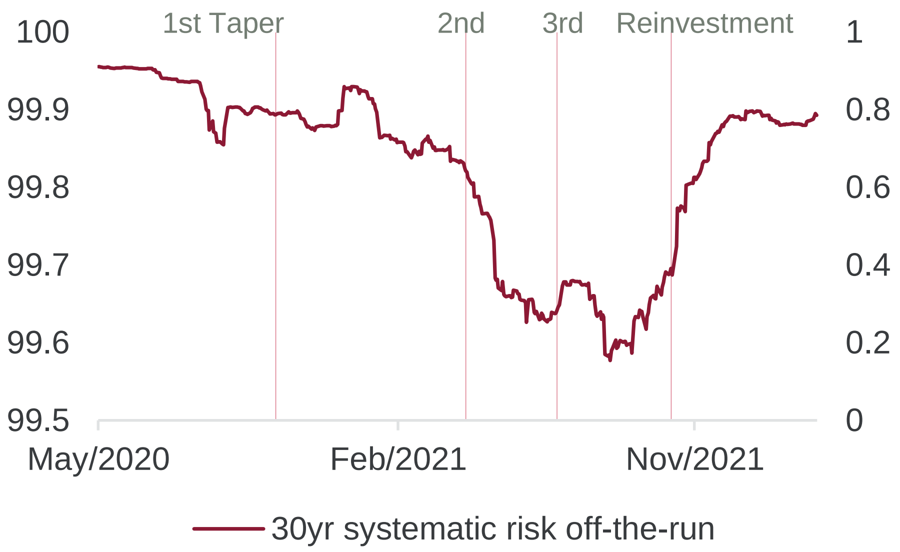
Market Implication #3– Micro Dislocations



- There were micro dislocations that QE created, but it is not entirely evident QT will totally unwind them

- We see three primary micro dislocations worth discussing: i) richness of June dated bonds; ii) off-the-run vs on-the-run valuations; iii) systematic risk has risen across each maturity sector

- Market functioning may not recover to pre-pandemic levels under a passive QT program



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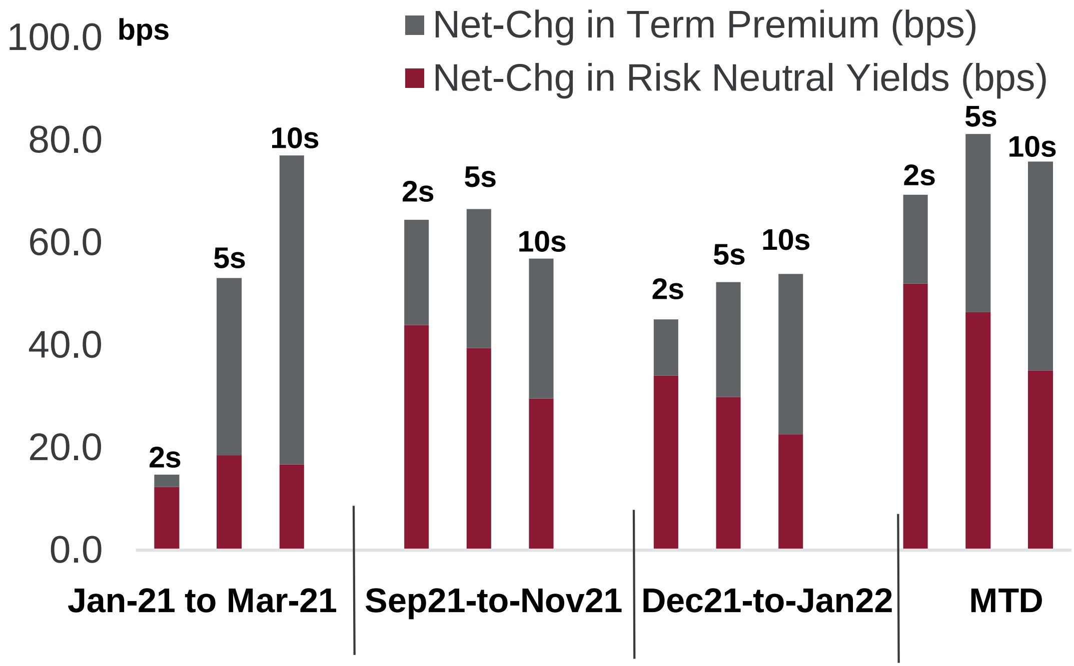
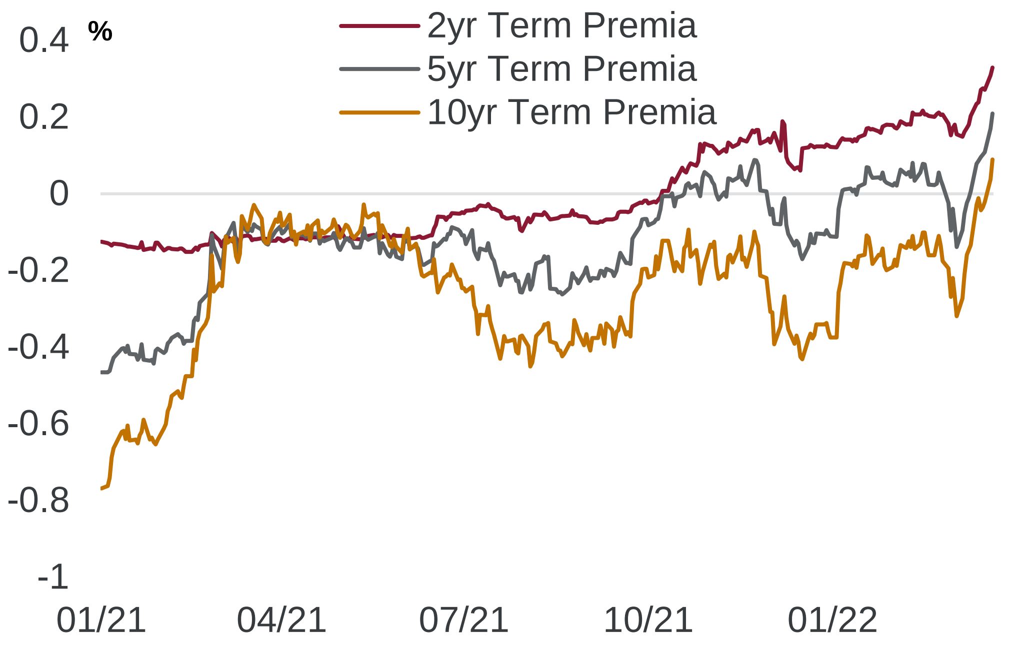
Market Implication #4– Rebuild of Term Premia





- More supply to the private sector should allow for a rebuilding of term premia across the term structure
- We see maturity differences, and view the 5yr sector as most vulnerable
- The underperformance in 5yr yields we expect near-term should further undermine new mortgage originations

Q&A