Market View
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Happy anniversary, QT

By Taylor Schleich & Warren Lovely

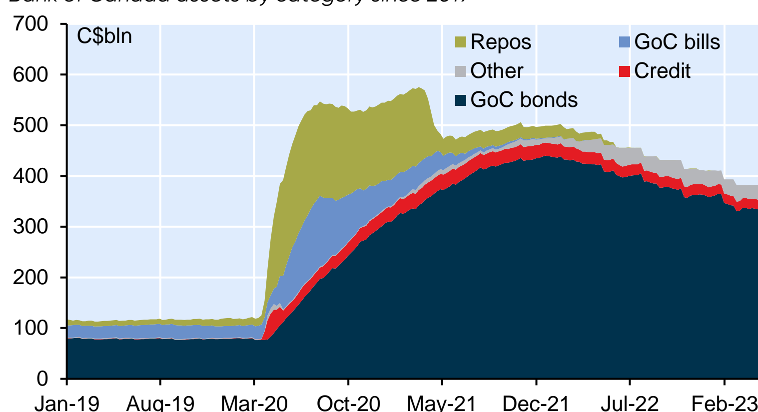
Just over a year ago, the Bank of Canada halted purchases of GoC bonds, thereby ushering in the start of its first Quantitative Tightening (QT) effort. This unconventional, never-before-used tool took a back seat to fast and furious policy rate increases over the past year but with the central bank now on hold, it will be increasingly in focus.

The Bank itself was mum on QT for much of the past year (other than reiterating that it is "complementing" rate increases), but that changed in March. Deputy Governor Toni Gravelle delivered a speech effectively providing a QT roadmap. To cut to the chase, policymakers expect balance sheet run-off to extend into late-2024/early-2025 targeting settlement balances of $20-60 billion. But before we look ahead, it's important to see how we got here.

The BoC sprang into action in early 2020 as financial markets seized up amidst COVID-19 uncertainty. Initially, liquidity injections to stabilize shaky markets were the policy prescription with over $200 billion infused via term repos. GoC debt was also purchased, initially to support market functioning, but then explicitly in a demand-stimulating, quantitative easing role. Provincial and corporate credit were purchased too, albeit on a smaller scale.

Chart 1: The evolution in the BoC's balance sheet

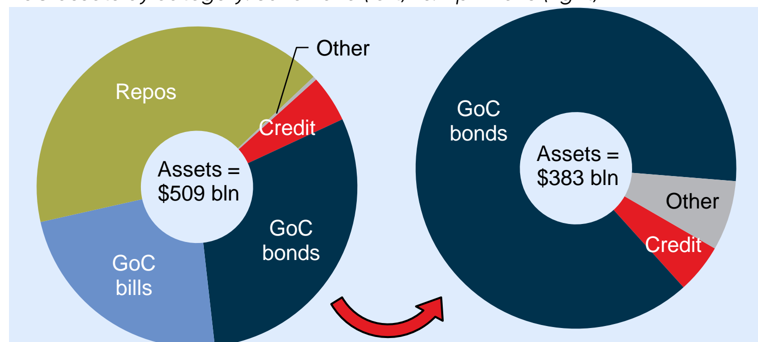
Bank of Canada assets by category since 2019



Source: NBF, Bank of Canada | Note: Credit = CMBs, provi debt, BAs, CP and corp. bonds

Chart 2: GoC bonds have become the Bank's biggest holding

BoC assets by category: June 2020 (left) vs. April 2023 (right)



Source: NBF, Bank of Canada

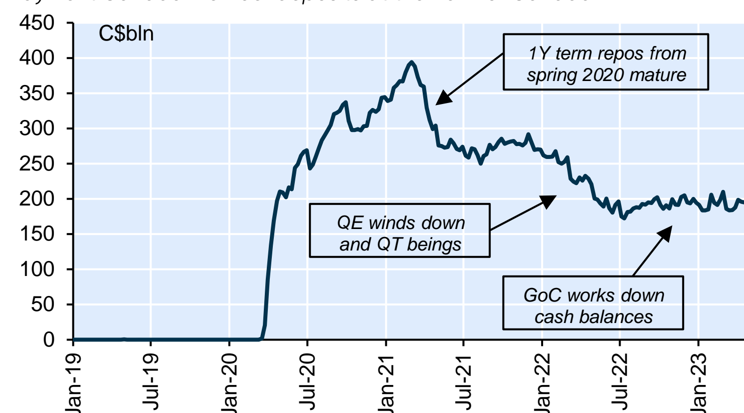
QE officially continued until November 2021, when the BoC transitioned to the 'reinvestment phase', whereby the Bank aimed to keep its holding steady. This ran until the start of QT in April 2022. However, the balance sheet was already shrinking before this. Repos and bills matured without replacement in late-2020/early-2021 and BoC assets had fallen ~$100 billion when QT began. As it stands now, COVID-era programs are long behind us, and the central bank's balance sheet is nearly 90% GoC bonds.

That covers the asset side of the Bank's balance sheet. But as Gravelle highlighted, it's really the liability side they're targeting. More specifically, settlement balances. These, akin to excess reserves in the U.S., are the excess of funds flowing through the payment system that participants other than the Bank hold after all their payments have been settled (see a detailed primer from the Bank of Canada here).

As the BoC lent cash via repos and bought bonds in QE, settlement balances were debited to payment system participants, introducing abundant liquidity to Canada's financial system. Mechanically, QT has the opposite effect. For a steady or rising stock of debt, when a GoC bond matures it will need to be refinanced. However, the BoC, who owned a significant portion of this paper, will not be buying again. That leaves non-BoC entities (i.e., end investors) on the hook to warehouse the rolled-over debt, including all of what the BoC had owned. Those settlement balances that had been accumulated will help to fund those purchases, thereby draining liquidity. For much of the last two years, that's what was happening. As repos matured (mostly in 2021), institutions went from depositing nearly $400 billion overnight at the Bank to around $250 billion. The late stages of QE and the "reinvestment phase" kept settlement balances roughly flat into 2022, but once QT began, the decline continued. By July, these had fallen to around $180 billion. Then, for the past nine months, nothing really happened.

Chart 3: Settlement balances little changed since July

Payment Canada member deposits at the Bank of Canada



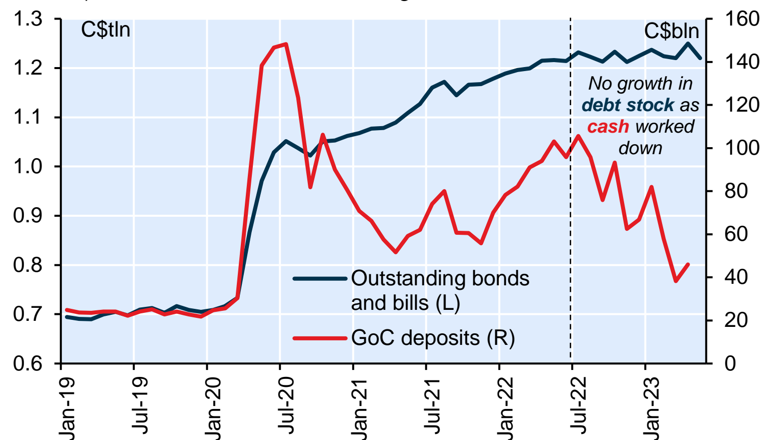
Source: NBF, Bank of Canada | Note: Latest reading as of 26-Apr-23

Did QT stop working? Not quite. We know that the BoC's bond holdings are down $70 billion since July so there are other factors at play. The main one is GoC cash balances.

The government's bank account at the BoC was infused with cash early in the pandemic, sitting at nearly $200 billion in mid-2020. This was deployed in the form of COVID stimulus and was back closer to 'normal' by mid-2021. But as the ongoing economic recovery proved more forceful than expected and inflation took hold, nominal GDP soared, and revenue flowed in bountifully. By last July, the government had over $100 billion in their deposit account. Since then,

the feds have spent out of this stockpile and haven't had to raise as much debt as would otherwise be the case. Indeed, there's been effectively no growth in the federal debt stock in over nine months.

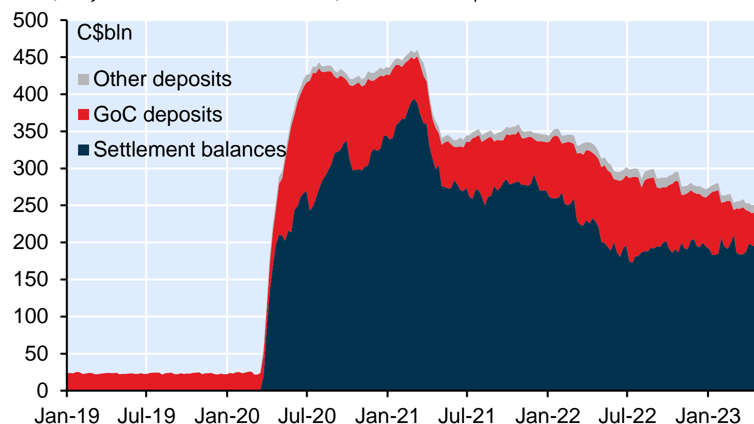
Chart 4: Abundant cash limited the need for GoC issuance
GoC deposits at the Bank of Canada (right) vs. GoC bond & bill stock (left)



Source: NBF, BoC | Note: Latest debt figure as of 1-May-23; GoC balances as of 26-Apr

All that to say, QT is still clearly impacting the liability side of BoC's balance sheet (by definition, it *has* to) when considering private and public sector deposits. At the same time there's been a ~$25 billion decline in reverse repo/SRO usage—another avenue to deploy cash.

Chart 5: It's easier to see QT impact by looking at *all* deposits
GoC, Payments Canada member, and other deposits at the Bank of Canada



Source: NBF, Bank of Canada | Note: Latest data point as of 26-Apr-23

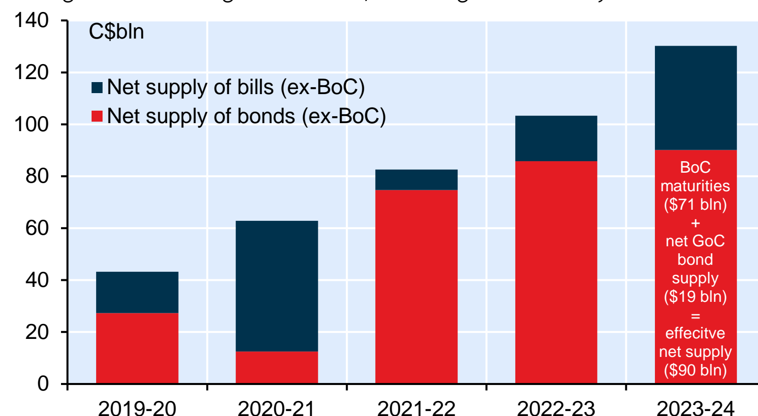
But now, the rubber meets the road, so to speak. There's limited room for GoC cash balances to fall further and there's only about $15 billion tied up in overnight reverse repos/SROs. Going forward, we should start to see settlement balances fall on a closer to one-for-one basis with the roll-off of GoC bonds.

Just how many bonds are we talking? And what will that mean for net supply? For context, the $70 billion due to mature on the Bank's balance sheet this fiscal year is more than any future fiscal year. It is however, less than what rolled off in 2022-23*. But this isn't the only variable that matters in the QT equation. One must also control for the *additional* supply that's due to come. And while gross issuance in 2023-24 will be lower than in the prior fiscal year, net issuance will rise.

**On a calendar year basis, 2023 is the most concentrated period of QT. The $88 bln fall in BoC's holdings in 2023 is ~$20 billion more than 2022. However, since GoC issuance is presented on a FY basis, that's our focus herein.*

In 2022-23, the outstanding bond stock increased by just $3 billion. The T-bill stock also expanded but the $15 billion increase here meant growth in the domestic debt stock was limited to less than $20 billion. This year, the net bond stock alone is expected to rise that much in addition to a $40 billion climb in the bill stock. Long story short, between QT and net new GoC debt, there will be more supply that will need to be absorbed by end investors.

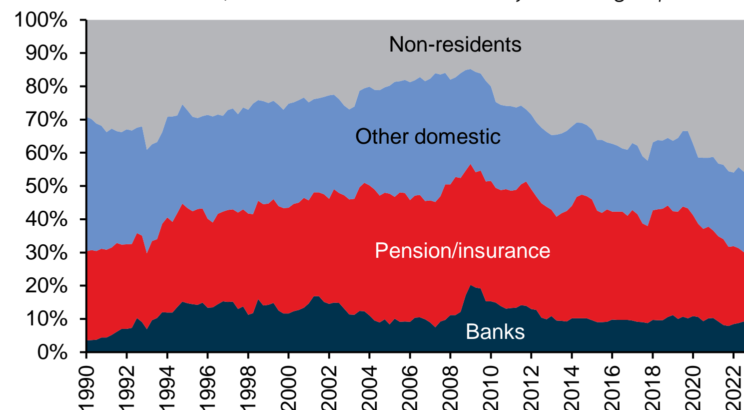
Chart 6: The ask of end investors to grow again in 2023-24
Change in outstanding bonds & bills, excluding those held by the BoC



Source: NBF, Bank of Canada, Government of Canada

Who's going to be the buyer of this marginal debt? To date, it's been non-residents carrying the load. In the second half of 2022, they accumulated $27 billion in GoC bonds, which was more than enough to absorb the increase in the non-BoC-held bond stock. Meanwhile, it's been pension and insurance funds that have been squeezed out, their share and level of holdings down significantly since 2019.

Chart 7: Non-residents hold an elevated share of GoC bonds
Share of available (i.e., non-BoC held) GoC bonds by investor group



Source: NBF, StatCan | Note: Latest data point is 2022:Q4

It's not clear if foreigners will continue to accumulate bonds at a rabid pace, but even if they don't, we don't foresee a severe drought of supply-based indigestion, at least not right away. The key risk here is the $40 billion wildcard that is the potential consolidation of the CMB program. Should this materialize as the government signalled in its latest budget, the bonds likely wouldn't hit the street until 2024 but it would represent a *material* rise in net GoC issuance. To the extent, this marginal GoC debt isn't fully met by increased demand for the risk-free, lower-yielding asset there may be some upward pressure on market-clearing rates. And of course, these bonds would come after significant liquidity has already been drained over the course of 2023. It's a key medium-term risk that will be monitoring closely.

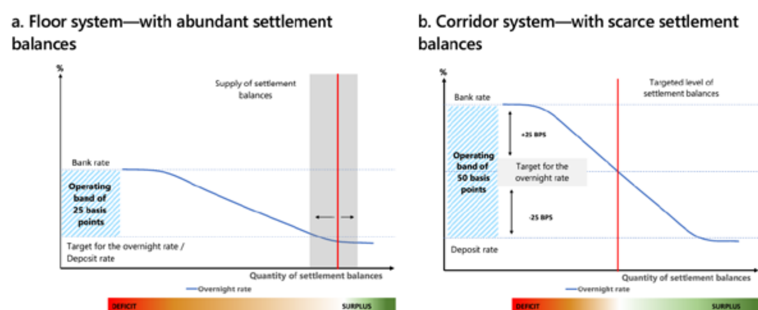
For now, under the status quo, the effective net supply in 2023-24 isn't *too far* removed from last year. And the $195 billion excess settlement balances still in the system suggests there's plenty of cash to absorb marginal debt over coming quarters. As noted at the top, the BoC sees the ultimate destination for settlement balances at somewhere between $20-60 billion. By this time next year, they should still be *at least* slightly above the upper end of this range. (Again, it's only here where CMB consolidation as well as still-considerable net financial requirements could begin to bite more significantly).

If you go back to 2019, you'd have seen settlement balances that were well below this new expected range. Until COVID hit, the BoC targeted a level of settlement balances less than $1 billion (save for a brief period in late-2009/early-2010) and actively enforced this. That was necessary under the corridor system for monetary policy that the Bank employed. In such a system, the deposit rate is 25 basis points below the overnight target and controlling settlement balances is needed to ensure the overnight rate remains near target.

In March 2020, the Bank turned to the floor system (where the deposit rate is equal to the overnight target and there are more than enough settlement balances to meet demand) allowing them more flexibility to introduce other policy tools (i.e., QE). As the Bank will explain, this is an operationally simpler framework and, in addition to other benefits, is able to better handle increased demand for settlement balances driven by structural changes in the payment system.

Chart 8: Visualizing the floor and corridor systems

Relationship between O/N rate, settlement balances in floor/corridor system



Source: Bank of Canada

And when it comes to the Canadian payments system, a major transformation has been/is underway. In 2021, the LVTS system was replaced by Lynx, a modernized high-value payment system that facilitates payments between Canadian financial institutions. One of the key features of Lynx is that it provides real-time gross settlement. While that was technically offered in the LVTS system, it was more liquidity-intensive and was thus used far less than the deferred net settlement component (whereby a joint collateral pool and a residual guarantee from the Bank of Canada would cover any losses in the event of participant defaults). The bottom line is that Lynx participants need to have funds in the system to settle payments in real-time which suggests there is more structural demand for settlement balances than under the old LVTS framework. This amount is uncertain and untested in practice but BoC research suggests the minimum level needed is somewhere between $10 and $30 billion.

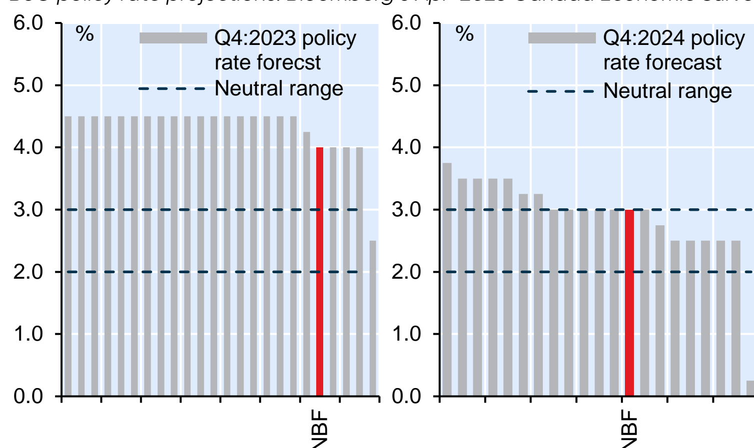
Similarly, there's a modernization of the retail payment system underway via the eventual implementation of the Real-Time Rail. This too will provide real-time settlement and will be operational 24/7/365. Participants will hold settlement accounts at the BoC, fungible with those of Lynx, but will only be able to be fund these accounts during Lynx operating hours. This too implies greater demand for settlement balances, particularly since participants will want to maintain a precautionary buffer when Lynx is closed on weekends and holidays. Again, the amount of the demand is uncertain, and will depend on participant behaviour under the new system. Taken together, this helps explain how the Bank's $20-60 billion estimate for 'steady state' settlement balances is derived. The upper bound of that range may be conservative but it's clear that the optimal stock of settlement balances is still well below today's level.

When will we know when we're approaching settlement balance scarcity? The key will lie in short-term funding markets. Sustained upward pressure on CORRA settings would be a tell-tale indication that settlement balances are too scarce. Recall, this is effectively what was observed in the United States in 2019 when a reserve shortage sent short-term rates higher and prompted the Fed to rapidly inject liquidity via emergency repo operations. Fortunately, existing Bank of Canada facilities (e.g., Standing Liquidity Facility, Standing Repo Facility) suggest an acute liquidity crisis like we saw in the U.S. in 2019 could be avoided, or at least limited. Back then, a Standing Repo Facility didn't exist in the U.S., and was introduced by the Federal Reserve in 2021, partially in response to those disruptions.

Finally, it's worth speaking to the interaction between the policy rate and QT. We've heard it posited that the onset of rate cuts will need to coincide with an end to QT. We're not so sure that will be the case. Yes, if we find ourselves in a situation where the Canadian economy is in outright recession and in need of stimulus, simultaneously draining liquidity while cutting rates would be counterproductive. But that's not the base case outlook from the BoC or most private sector forecasters. A period of below-trend growth with the policy rate moving from 4.5% to ~3% through 2024 is *not* a shift to easy monetary policy. It's simply a less restrictive policy stance but restrictive, nonetheless. As a result, our expectation is for the Bank to continue to wind down its balance sheet through much of 2024 until the steady state on settlement balances is achieved. This appears to be the Bank's expectation too as Gravelle noted QT will likely end "sometime around the end of 2024 or the first half of 2025". Eventually, the BoC will return to its regular course GoC bond/bill market purchases, to offset structural growth in currency in circulation. But that time is not now, and it may not be for some time, rate cuts or not.

Chart 9: Modestly restrictive 2024 policy supports ongoing QT

BoC policy rate projections: Bloomberg's Apr-2023 Canada Economic Survey



Source: NBF, Bloomberg | Note: Private sector forecasts as of 24-Apr

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