Capital Markets

RBC

2022 Canadian Public Sector Issuers Roundtable Series

DECEMBER 2022

TABLE OF CONTENTS

FORWARD

RBC Capital Markets Government Finance team was pleased once again to facilitate three separate Canadian Public Sector Debt Issuance roundtable discussions in December 2022. Similar to past years, participants included representatives from the Canadian Federal Government, federal agencies, provincial issuers, pension asset managers, municipal issuers, offshore SSA maple issuers, and institutional investors. While the SSA Maple and Canadian Municipal Roundtables were held virtually, we were delighted to host the Canadian Public Sector Roundtable in person for the first time in 3 years. The discussions focused on the current economic environment in Canada, ESG themes, and trends in borrowing by public sector issuers in 2022 and expectations for 2023. This publication summarizes these conversations along with key insights and takeaways from issuers and investors in the Canadian public sector. We thank all the participants who dedicated the time to share their views and experiences.

Canadian public sector issuers completed C$189.3 billion of funding across all currencies in 2022, with C$136.5 billion (72%) of that borrowing completed in the domestic market. Though both domestic and gross offshore borrowing figures have moderated from the financing activity of the pandemic years of 2020 and 2021, they remain on pace with the 5-year historical average. The decline in overall public sector borrowing was primarily driven by decreased borrowing needs from provincial issuers. Provincial borrowing needs steadily declined throughout the year as fiscal results were bolstered by stronger than anticipated economic growth and elevated resource prices. In all, provincial borrowers completed C$81.5 billion across all currencies in 2022, down from the C$111.5 billion seen in 2021. In the domestic market, provincial issuers completed C$69.3 billion in 2022, representing 85% of their overall borrowing and a decline of C$12.5 billion from 2021. Though provincial borrowing declined, the Canadian SSA sector had a record year. Issuers in the sector completed C$56.0 billion equivalent across all currencies as federal pension issuers utilized additional leverage capabilities, and the Federal Government completed multiple targeted transactions. Canada Housing Trust ("CHT") maintained its C$40.0 billion program, and completed its inaugural 5-year CORRA-linked Floating Rate Note ("FRN") in May 2022. The Canadian Municipal sector saw C$4.7 billion of volumes (excluding Quebec unrated munis), a decline of 21% from the record high C$5.9 billion seen in 2021. International issuance by Canadian public sector issuers declined to C$52.9 billion equiv. in 2022, down from C$71.8 billion in 2021 as provincial issuers placed increased focus on the domestic market amid heightened volatility. Cross border funding from Canadian SSA issuers remained strong at C$40.6 billion equiv. and represented ~73% of that sector's issuance. Despite the lower overall offshore financing activity, Canadian public sector issuers continued to display currency diversity with offerings completed across AUD, CHF, EUR, GBP, NZD, and USD.

ESG issuance reached another record high this year for public sector issuers with Green, Social and Sustainable Bond offerings in the sector totaling C$22.7 billion from provincial, SSA and municipal issuers across 26 issues, +63% from the C$13.9 billion seen in 2021 across 19 transactions. Of note, the Government of Canada issued an inaugural C$5 billion Green bond in March, and intends to continue issuing in support of its climate and environmental objectives and to further develop the Canadian sustainable finance market. SSA Maple issuers accounted for C$5.7 billion of 2022 ESG supply, provincial issuers accounted for C$4.6 billion. Two areas of growth in the Canadian ESG market are pension / asset managers with C$4.3 billion of supply, while Municipal issuers also completed C$1.04 billion compared to the C$575 million seen in 2021.

RBC finished the year #1 in debt capital markets activity overall in Canada once again, reflecting our client-first approach, ability to leverage market insights to deliver differentiated advice, execution leadership and uniquely global breadth of our fixed income franchise. Our global public sector capital markets teams continue to focus on the ESG market as a key growth area and we are proud to lead with a Green, Social, Sustainability, and Sustainability-Linked (GSSS) debt market share of 19.4% in Canada #1 ranking since the market was established in 2014, and an outsized number of structuring agent roles.

Looking ahead to 2023, we expect the volume of issuance by Canadian public sector issuers to be broadly consistent with 2022 levels. Borrowing requirements by the Canadian provinces are expected to be driven by the need to balance improving revenue growth against rising cost pressures and the potential for an economic downturn in 2023. Provincial issuers are keen to increase their offshore funding activity and will continue to monitor relative financing levels for opportunities. We expect any reduction in provincial issuance to be more than made up for by continued growth in domestic issuance from the pension / asset managers sector in 2023 and beyond.

We look forward to continuing to partner and support you in navigating a market environment that is likely to be characterized by ongoing uncertainty. We thank you for your confidence in RBC and wish you continued success in the year ahead.

Alex Caridia
Managing Director, Head of Global Public Sector Markets
Debt Capital Markets
RBC Capital Markets

Public Sector Roundtable

ISSUER REPRESENTATIVES

Stephen Thompson
Executive Director, Capital Markets, Treasury Board and Finance, Province of Alberta

Nicolas Moreau
Associate Assistant Deputy Minister, Financial Sector Policy Branch, Department of Finance, Canada

Jim Hopkins
Assistant Deputy Minister Finance, Province of British Columbia

Dave Ayre
Treasurer, CMHC

Sam Dorri
Managing Director, Exposure, Leverage & Liquidity Management, Total Fund Management, CPP Investments

Chadrick Buffel
Principal Portfolio Manager, Export Development Canada

Mike Manning
Executive Director and Chief Executive Officer, Capital Markets, Ontario Finance Authority

Andrew Bastien
Senior Director, Liquidity & Funding, PSP Investments

Amy Gates
Director, Banking and Cash Management, Province of Saskatchewan

Guillaume Pichard
Managing Director, Capital Markets and Treasury, Ministry of Finance, Province of Quebec

INVESTOR REPRESENTATIVES

Matthew Cassell
Principal Portfolio Manager, Healthcare of Ontario Pension Plan (HOOPP)

Pier-Andre Blanchet
Portfolio Manager, Industrial Alliance Investment Management

Ryan Goulding, CFA
Fund Manager, Leith Wheeler

Abid Dobani
Managing Director, Head Portfolio Management, Execution and Strategy – Corporate Treasury, RBC Capital Markets

MODERATORS

Alex Caridia
Managing Director,
Global Head of Public Sector Markets, RBC Debt Capital Markets

Jason Daw
Managing Director,
Head of North America Rates Strategy

Jigme Shingsar
Managing Director
RBC Debt Capital Markets

Kevin Martin
Director, RBC Government Finance

PUBLIC SECTOR KEY THEMES

1 **Strong Growth in 2022 Gives Way to Uncertain Outlook for 2023:** Canada emerged from the pandemic with strong economic growth. The positive momentum supported an improvement in Provincial revenues through the year, which allowed many Provinces to revise their fiscal deficit estimates significantly lower than originally forecasted, with many Provinces reporting surpluses. However, elevated inflation, geopolitical concerns and high interest rates represent headwinds to future growth and will be top of mind as the Provinces prepare their 2023 budgets and consider the need for additional fiscal cushioning in the event of an economic slowdown or recession scenario.

2 **Inflation:** The effects of higher inflation are being felt on the capital investment side by the Canadian provinces due to increases in materials costs and labour shortages. However, the prudent budgeting processes for many provinces allow for fiscal contingencies to help offset the financial blow of rising inflation.

3 **Interest Rates:** The focus of monetary policy in Canada is expected to shift from a question of 'how much higher will rates go?' to 'how much longer will central banks keep rates at higher levels?'

4 **Higher Cost of Debt Has Been Manageable:** Issuers noted that they are not yet concerned about the impact of rising debt servicing costs; with many noting that interest rates and debt servicing costs remain low from a historical perspective.

5 **Housing Affordability Challenges:** There are cyclical factors and structural factors that are currently working in different directions within the housing market and are expected to continue through 2023. Higher interest rates drove a significant increase in Canadian mortgage rates in 2022 resulting in a spike in home ownership costs. Affordability was also negatively affected by a significant housing supply shortage across the country. Cyclical economic factors are looking weaker, which poses the potential for downside risks to the housing market in 2023.

6 **Increase in ESG Issuance:** Canadian public sector ESG issuance volumes reached a record high in 2022, notably with the Government of Canada's inaugural C$5 billion Green bond providing a boost to the Canadian ESG market. While Ontario and Quebec continue to lead the provincial green bond issuance space, there has been a surge in ESG activity from pension asset managers this year. Provinces who have not yet issued an ESG bond emphasized that they would like to eventually embed ESG into all their programs, and are mindful of the impacts of labeled ESG issuance on the overall liquidity in their conventional financing activities.

7 **Overall Issuance Levels Expected to be Steady in 2023:** Bond issuance by the Canadian provinces returned to pre-pandemic pace in 2022. The domestic market absorbed much more of the total provincial new issue supply then in prior years and issuers commented that it was more difficult to find favourable issuance conditions in the latter half of the year. Pension / asset managers are increasingly active issuers in the Canadian market and are working towards a more provincial-like issuance pattern. The outlook for debt issuance by the Canadian public sector in 2023 is expected to be similar to the volume seen in 2022 as the provinces balance improving revenue growth against of the impacts of higher expense growth and the potential for an economic downturn.

8 **International Market Dependent on Relative Financing Opportunities:** There was a significant decrease in offshore market issuance for the Canadian public sector in 2022, as relative financing opportunities were not as robust as issuers had hoped. The Provinces noted that they are still committed to issuing in international markets to diversify their funding base, and will continue to actively monitor relative financing levels for offshore issuance opportunities in 2023.

ECONOMIC UPDATE & GROWTH PLANS

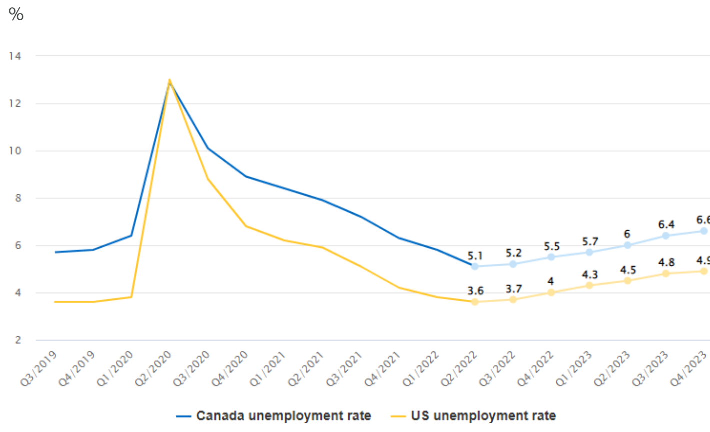
Alex Caridia (RBC): With this being the first in person meeting since 2019, thank you everybody for taking the time to meet with us. Today we'll be focusing on a number of themes topical to the issuance environment in Canadian Public sector markets, starting with a discussion on the macro backdrop and then moving on to some more specific funding related issues during the second half of the discussion. With that, let's get started. Jason, I'll pass it over to you for RBC's views on the macro backdrop.

Jason Daw (RBC): 2022 was obviously a very interesting year for the bond market. It was a one-sided risk scenario – how high would inflation and rates go. So while it was a very challenging year for everybody involved in the market, 2023 could prove to be as, or more, difficult to navigate. As we enter 2023, the key question revolves around the Bank of Canada and the path of monetary policy; will they stop hiking soon, cut rates later in the year, or pause and then be forced to tighten further. We expect to see some push and pull in the market in different directions until there is better clarity on which of the three scenarios will play out. The clearest outcome will be that economic growth is going to be weak, and at the very least, our base case is that there will be a recession in the first half of the year (a very mild recession versus historical standards - unemployment rate expected to increase a couple percentage points, putting us in the bottom quartile of what we've seen during historical recessions). We are below consensus on growth and the risks are to the downside. The housing market slowing, buckling under the pressure of the unprecedented speed of rate increases. Slowing housing demand will continue to filter through to the economy to broader consumption. Fiscal revenues have been generally good alongside high inflation, which is perhaps one positive development. But as we go into 2023, it will be interesting to hear everybody's outlook as far as what you are thinking with respect to the economy from a growth standpoint.

> As we enter 2023, they key question revolves around the Bank of Canada and the path of monetary policy; will they stop hiking soon, cut rates later in the year, or pause and then be forced to tighten further.
>
> *Jason Daw, RBC Capital Markets*

Stephen Thompson (Alberta): I completely agree with you. We don't have a house view on a recession next year. We are looking at about 4.85% GDP growth through 2022, and then we expect it to moderate pretty quickly down to 2.0%-3.5%. We obviously have high risk, in Alberta with respect to investment in the oil sector. We've seen good investment in non-energy through this cycle, which is interesting, but our house view is that a fairly significant risk of recession.

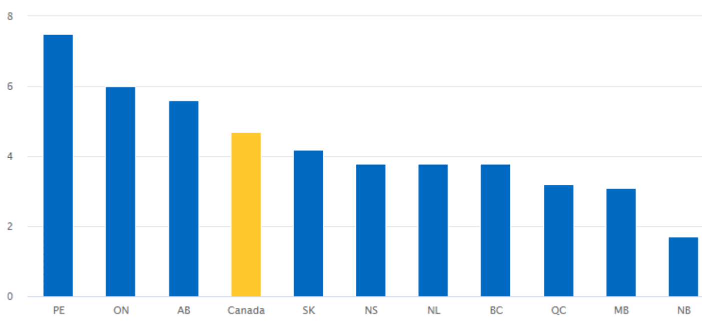
UNEMPLOYMENT RATES WILL DRIFT UP FROM HISTORIC LOWS



Source: Statistics Can, RBC Economics

DEMAND FOR LABOUR CONTINUES TO BE STRONG ACROSS THE COUNTRY

Employment, annual % change, first seven months of 2022



Source: Statistics Can, RBC Economics

Jason Daw (RBC): For everybody's benefit, does Alberta assume a certain oil price as far as your budgeting is concerned?

Stephen Thompson (Alberta): Yes, we do. We generally forecast below the private sector consensus. So for the current fiscal year, we're coming in pretty much right on forecast. With respect to WTI, we are looking at C$91.50 average for the 2022-2023 fiscal year, and then down to about C$78.5 for the next two fiscal years.

Jason Daw (RBC): Okay. Kind of where we are at the moment.

Stephen Thompson (Alberta): Yeah, we're never too far off the consensus.

Jim Hopkins (British Columbia): I'd like to add that in British Columbia, the outlook is sort of mixed. We've got an economy that's still quite resilient and still showing strong beats of growth. Employment growth is 3.5%, while unemployment has reached historical lows. Notwithstanding what you'd expect, our housing starts are quite sustained, and well above historical averages. But, I do think it's reasonable that the private sector forecasters have given a haircut to their growth prospects for BC. So where they were at about 1.5% for 2023 in August, they're at about 0.5% now for 2023 for British Columbia. I think they've downgraded the growth expectations for most provinces in the country. As is typical, we didn't provide an economic outlook in the Q2 report that we just released. Rather, the forecast will come in the February budget. It will take the consensus and apply a haircut as a measure of prudence. Again, the outlook will have to grapple with mixed signals. Our exports are running at 30% growth but the headwinds will be inflation and interest rates rising, and the impact that will have on the consumer, and an expectation that our trading partners' economies will slow. We don't believe export growth at 30% is sustainable. However, our story to date is about a diverse economy which attracts immigration and has proven to be resilient. We just have to watch and monitor a slowing outlook as the Fed and the Bank of Canada come to the end of hiking rates.

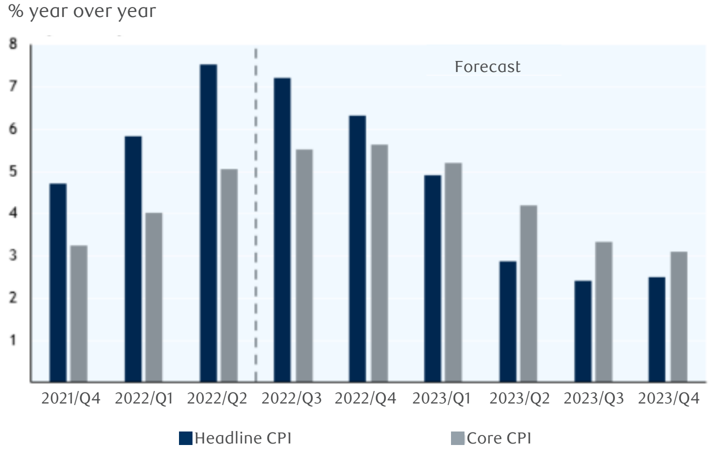
Nicolas Moreau (Department of Finance, Canada): Despite lower growth prospects since Budget 2022, the Canadian economy has seen a significant boost to national income from higher commodity prices following Russia's illegal invasion of Ukraine. Higher prices for a range of commodities that Canada exports pushed up our terms of trade (the ratio of export prices to import prices) to an all-time high in the second quarter of 2022. Higher export prices have, in turn, boosted the revenues of Canadian exporters, corporate profits, and GDP inflation. These trends have been widespread across sectors and regions of Canada, supporting revenues of all orders of government, including provinces and territories.

> Looking ahead, we're not ready to call a recession yet. Most private sector economists continued to expect that Canada would avoid a "hard landing"—that is, inflation will moderate without a recession. However, this growth outlook is subject to significant downside risks.
>
> *Nicolas Moreau, Department of Finance, Canada*

Looking ahead, we're not ready to call a recession yet. Most private sector economists continued to expect that Canada would avoid a "hard landing"—that is, inflation will moderate without a recession.

However, this growth outlook is subject to significant downside risks. Primarily, this relates to the path of inflation. How quickly inflation moderates will determine how high interest rates will rise and how long they remain elevated, and therefore how sharply global activity will cool. A more pronounced slowdown, both in Canada and globally, is possible if high inflation becomes more deeply entrenched.

STRENGTH IN CORE CPI TO OUTPACE HEADLINE IN 2023



Source: StatCan, RBC Economics

Amy Gates (Saskatchewan): Saskatchewan is having a very strong year in 2022, following drought conditions that significantly impacted the agriculture sector and provincial GDP in 2021. Our 2022 real GDP forecast is now 4.7%, driven by high resource prices and a strong resource sector. While we are hopeful this resource cycle will last a while longer, our growth projections for next year soften slightly to 1.4%.

Mike Manning (Ontario): Ontario is starting from a very strong base like everyone else. We use a consensus forecasting process using private-sector economists and have a 2.6% real GDP growth forecast for this year, and we see a downshift next year to 0.5%.
Our economists are operating differently now by using scenario forecasts to adjust for the high uncertainty levels. So we have a planning forecast, then we have a slower growth scenario and a higher growth scenario. In the slower growth scenario we see -0.9% real GDP growth next year. Right now, the employment picture is still pretty strong, with an unemployment rate of 5.5%, which is historically pretty good. We're seeing that going up marginally to about 6.3% next year.

Jason Daw (RBC): One of the big themes for everybody next year is going to be revolving around the housing market. There's positive supports, for example, the unemployment rate might not go up that much, which would inherently put a floor on the housing market, as well as a number of different structural factors ranging from immigration and land supply. However, the cyclical factors are looking quite poor which argues for downside risks. Seeing as Ontario, British Columbia, and Alberta have the highest household debt across provinces and will likely be most sensitive to changes in interest rates, Dave, would you care to speak on the housing market? It's obviously a big topic, and I would love for you to share some of your insights on the cyclical and structural factors impacting this key sector of the Canadian economy.

Dave Ayre (CMHC): Housing definitely remains a big topic and affordability continues to be challenged by a significant supply shortage. If you look at some of the analysis we've done, the numbers kind of range in and around a current supply shortfall of about 2 million units, which is substantial and expected to grow to a nearly 3.5 million unit shortfall by 2030. Housing starts are tracking fairly strong compared to historical figures but will still not be enough to close the supply gaps. In addition, our unemployment levels are quite low right now and immigration is a huge potential positive factor in housing demand. This is not to say we don't see some headwinds coming down the line with a potential recession. There's a number of different initiatives going on, at all levels of government to try and address various hurdles which impede the creation of more housing supply, but it's going to take a long time. So looking at the quality of our mortgage loan insurance book, we continue to see it performing very well.

> Consumers can look at this and anticipate much easier policy in the future, suggesting a significant potential tailwind for housing.
>
> *Matthew Cassell, HOOPP*

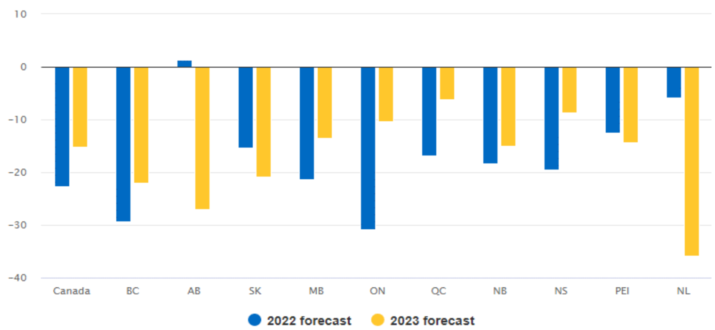
Our mortgage arrears rates sit at a record low of 0.25% and actual defaults remain very low. The implementation of the mortgage rate stress test in 2016 has been an important factor in keeping arrears and defaults low. The stress test was built for exactly what's happened over the last year. We wanted to shock people with much higher rates in an environment where previously people had the benefit of very low rates for many years. We are hoping that most will be able to withstand the higher rates environment we are now in and feel that the underwriting standards in Canada are continuing to work very well.

> Housing starts are tracking fairly strong compared to historical figures but will still not be enough to close the supply gaps.
>
> *Dave Ayre, CMHC*

Matthew Cassell (HOOPP): An interesting element of the yield curve right now is the inversion from the overnight rate relative to the 4-year swap rate. As we know, the 4-year swap rate is really the key driver for 5-year fixed mortgages in Canada. If we extrapolate from the implied forward rates from the swap curve, the market is pricing in mortgage rates sub 4.50% within the next year. This is not that

ANNUAL % CHANGE IN HOME RESALES

Housing markets to cool into 2023



Source: Canadian Real Estate Association, RBC Economics

restrictive for households. In allowing the strong inversion of the yield curve, the central banks are taking away a significant amount of effective tightening. Consumers can look at this and anticipate much easier policy in the future, suggesting a significant potential tailwind for housing.

Abid Dobani (RBC Corporate Treasury): It's clear the sophistication of the Canadian consumer has consistently been underpriced by the market. Clients are willing to move away from non-maturity deposits paying lower rates, and pivot into more structured deposit products like fixed-rate GICs. The same can be said for mortgage preferences which have moved down from 5-year terms to the shorter end of the curve. Consumers are forecasting rates will be lower in 2 years' time and are thinking about refinancing levels. These preference changes have significant impact to bank requirements for duration and liquid asset portfolios, and this will be a key driver of spreads in the sub-five-year part of the curve in 2023.

To touch on the broader mortgage comment, major Canadian banks have reported lower than expected provisions for credit losses, and this should come as no surprise. Stringent stress tests to qualify for a mortgage, shorter refinance periods than most of Europe and the US, and a conservative and resilient banking sector ensures systemic stability. The one area that will garner more and more attention as we come to the end of this hiking cycle is the three quarters of variable rate mortgages outstanding that have fixed payments which are only covering interest and not principal. When the trigger rate (the interest rate whereby interest is no longer covered in the fixed payment) is breached, then the fixed payments will need to be adjusted, and that may cause some duress to those who are financed on the margin. One last point to consider is the 2023 refinance pipeline - fixed 5-year rates are now ~250bps higher than they were five years ago and may put some pressure on the margin to liquidate and downsize or rent rather than refinance. Again, this is within the stress test conditions, however household financial situations in an inflationary environment have changed from when mortgages were originally taken out.

> It's clear the sophistication of the Canadian consumer has consistently been underpriced by the market.
>
> *Abid Dobani, RBC Corporate Treasury*

Jason Daw (RBC): Yeah, on that point, if we look back to the 90s when Ontario went through a pretty pronounced and extended housing market slump, we see delinquencies at the consumer mortgage level remained quite low. If there's any types of problems that have typically provided more stress to the financial system, it's more from lending to real estate developers, etc. Yes, there's going to be some stresses from people that purchased in February at the highs and had an adjustable rate mortgage, but from a broader perspective, it should be relatively contained.

Chad, with strong growth in 2022, how has that impacted your business model with respect to borrowing? Even though the CAD has been very well behaved this year compared to other asset classes, have customers been affected at all on the currency side?

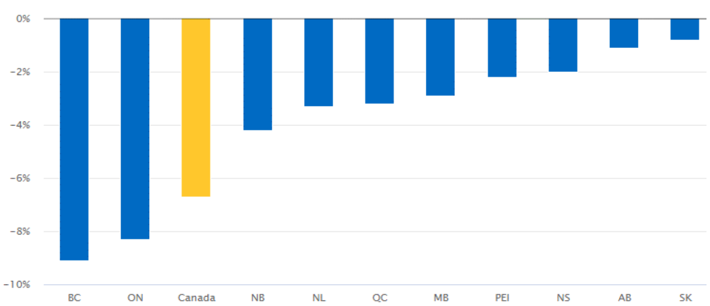
Chad Buffel (EDC): We will have to keep an eye on that for sure. I think, business model wise, the only thing we've been looking at is how it affects our borrowing program. A lot of loans seem to be settling a little faster. We've seen a faster turnover of loans closing. Some of that might be due to rates and the pace of recent rate hikes. We believe that people may be trying to get ahead of further increases.

My personal speculation is that there is a potential concern over credit and what credit availability might look like in the next quarter and into next year. Oftentimes, what we experience at the end of the year, are more prepayments as businesses start preparing their balance sheets for year-end reporting. This activity is lighter as we finish off the fourth quarter. The impact of this, is that we're pretty much on track in terms of what we forecasted to borrow at the beginning of the year. Usually when we get to this point of the year, we can lighten up because more money is coming in than we expected. Typically, it's stable at this stage. When we look at syndicated loans and bilateral loans, we are currently seeing larger notional size and longer terms from the treasury side. As well, we've seen a bit more interest and uptake in local currency. Focusing on the currency side of it, we assume that our borrowers are trying to reduce their exposures to some of the risks associated with foreign exchange and interest rates. As we get into next year, I think we will begin to see some of the effects from this year beginning to gel even more. As troubles arise, consumer demand goes down, and commodities start lightening up, prices will drop. There will likely be more financing demands to come, but, it's hard to put a definitive pin on it yet.

> We've seen a faster turnover of loans closing. Some of that might be due to rates and the pace of recent rate hikes. We believe that people may be trying to get ahead of further increases.
>
> *Chad Buffel, EDC*

DECLINE IN HOUSEHOLD NET WORTH ARISING FROM EXPECTED HOUSING PRICE DROP, IN %

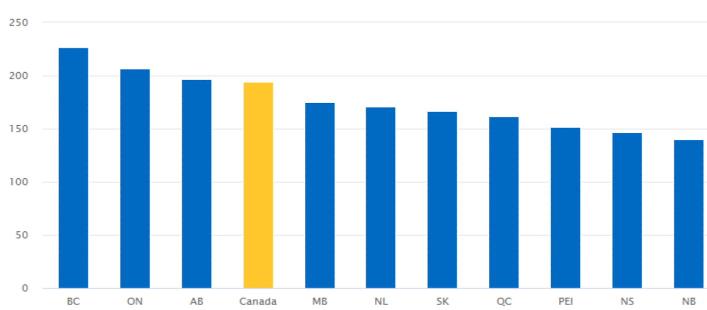
Hit to households' net worth larger in BC and Ontario



Source: Statistics Canada, RBC Economics

HOUSEHOLD DEBT TO DISPOSABLE INCOME RATIO Q1 2022

BC, Ontario and Alberta housholds are most sensitive to interest rates



Source: Statistics Canada, RBC Economics

INTEREST RATES

Jason Daw (RBC): Shifting gears from the growth side to the interest rate side, our expectation currently stands that the Bank of Canada will likely be on hold for all of 2023. We probably won't see any rate cuts. They need to be very cautious and wait to ease policy until they are absolutely sure they will meet their inflation objective. Yields have come off the highs and curves are now quite inverted. I would suspect that some of these yield curves can stay inverted for a decent portion of next year before we get to a point where there's the possibility of a rate cutting cycle happening. We have had higher rates now than we've been used to over the last while, and obviously the shape of the curve is very odd versus what we've been used to. You'd have to go back to the early 1980s to see a 2s5s or 2s10s yield curve that's as inverted as now. At this point are there any concerns or comments on interest on debt? And given where we are in interest rates and the shape of the yield curve, is there any impact on your borrowing strategies?

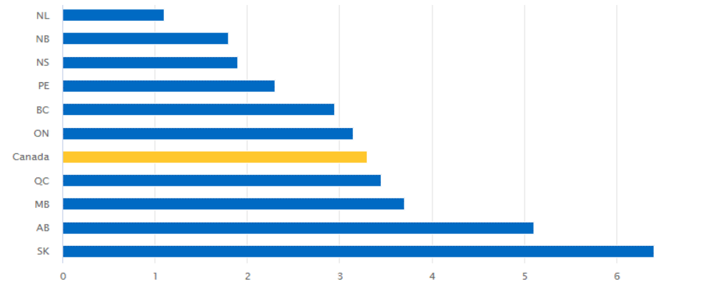
Sam Dorri (CPPIB): I can kick it off. We're not a fixed rate borrower. We examine our cost of funds on a swapped equivalent basis. The credit spread widening environment has had an impact on our cost of funds. Though it's important to remember that we're an asset manager – so the asset side of the balance sheet can deploy into these wider spreads offsetting the marginally higher cost of borrowing vs swaps. As for the shape of the curve and the impact on borrowing, we've done our best to be tactical on the curve and cross-market while maintaining the right presence in each of our core markets. That said, the market has also dictated its clear preference for the front-end, and we've been responsive to that demand. This has been particularly evident into the inverted yield curve in the USD market, but it's been a theme across a number of core markets, where you had that three-to-four-month period in EUR that saw predominantly 5-year issuance. This is a clear departure for that market, which has historically provided 10-year to the plus duration for borrowers. As a result, while we started the year with a weighted average maturity of funding of 7.9 years, this year our weighted average maturity was 5.25 years, reflecting the better demand for front-end product.

> We've done our best to be tactical on the curve and cross-market while maintaining the right presence in each of our core markets.
>
> *Sam Dorri, CPPIB*

Mike Manning (Ontario): Yes, I would say that we've had a fairly consistent approach over the last several years to extend the term of our borrowing program. This reflects the fact that we have had

REAL GDP GROWTH – 2022

% change



Source: Statistics Canada, RBC Economics

large annual borrowing programs, and the resulting refinancing risk is something that we have had to manage proactively. At the same time, interest rates have been low on a historical basis, although obviously we've had a change here in recent months with the backup in interest rates. Nevertheless, interest rates still haven't really got to the point where they're higher than the average over the last 20 years. If you go

> We really have benefited from the fact that our fiscal situation has improved so much this year. It just means that we're borrowing a lot less money than we anticipated.
>
> *Mike Manning, Ontario*

to the period before the global financial crisis, they look even more attractive. So, we're pretty happy just to stick with our curve extension. I think we may re-evaluate that strategy if longer term rates go up a lot from here, but having said that, the inverted yield curve doesn't really pay you for going short, at least in the short term. In terms of Interest on Debt ("IOD"), we really have benefited from the fact that our fiscal situation has improved so much this year. It just means that we're borrowing a lot less money than we anticipated. You don't think about it, but the reality is, when you're borrowing a lot less money, you're not paying interest on the money that you're not borrowing. So we found that we've have about C$1.9 billion that we're saving over the next three years in interest costs, just by the fact that we're borrowing less. So that's all been beneficial. When we forecast IOD, we tend to be conservative and have a lot of provisions, so the impact has actually been much less than you would have thought. Our IOD forecast is only C$100 million more this fiscal year relative to our annual budget forecast in April of this year. It's C$13.6 billion versus C$13.5 billion this fiscal year, and it's C$14.5 billion versus C$14.3 billion for the next fiscal year. So the increases have been fairly manageable so far.

> Debt servicing cost is still significant, but when you look at the big picture, we're still in a better place than we were like 10 years ago, even with the impact the debt load we took on during the pandemic.
>
> *Guillaume Pichard, Quebec*

Guillaume Pichard (Quebec): For us we are seeing a bit of the same as Mike just mentioned here. If you look at it, debt service is actually going down. Next year we will see it at 6.4% down from 7.3%. Investors keep asking us about the impact on interest rates, and I'm happy to tell them that back in 2010, debt service was over 10%, so it's still an improvement. Therefore there is a sensibility in our debt service. Like if rates overshoot our projection by 1%, we will pay C$600 million more, while over five years, it's a C$2 billion impact. This is still significant, but when you look at the big picture, we're still in a better place than we were like 10 years ago, even with the impact from the debt load we took on during the pandemic. In terms of issuance, similar to Ontario, we're going to be there in 10-years and we're going to be issuing longs. This year has been very good in terms of the average maturity of the debt issued. This year its 18 years, which is good, and the average cost is 3.8 versus the average cost of our current debt at 3.06. So it is higher, but it's not significant, like 300-400 basis points higher. Still very manageable.

> In Alberta, we've been a bit fortunate this year, so we're paying all of our debt maturities off with cash.
>
> *Stephen Thompson, Alberta*

Stephen Thompson (Alberta): In Alberta, we've been a bit fortunate this year, so we're paying all of our debt maturities off with cash. We're going to take out about C$19 billion in debt stock on a hundred billion dollar portfolio, so we really aren't too worried about rising rates in terms of debt servicing costs. I mean, it does have an impact on revenue, so our sensitivity is a similar number to yours (Quebec). So, a 1% change on forecasts is about C$525 million in terms of the revenue side. We are remarkably unconcerned with rising rates at the moment.

Nicolas Moreau (Department of Finance, Canada): At the federal level, we want to continue to issue across the curve. During the pandemic, the government has been successful in maximizing long bond issuance to fund COVID-19-related debt, taking advantage of low rates and to lock in the Government of Canada COVID debt. Now that the COVID crisis is behind us, the Government has already started to adjust its bonds allocation more towards the belly of the curve. Moving forward, the government will closely monitor financial markets and may adjust issuance in response to shifts in market demand and/or changes to financial requirements. Having access to a well-functioning government securities market contributes to lower costs and less volatile pricing for the government, ensuring that funds can be raised efficiently over time to meet the government's financial requirements. Moreover, to support a liquid and well-functioning market for Government of Canada securities, the government strives to promote transparency and consistency.

> To support a liquid and well-functioning market for Government of Canada securities, the government strives to promote transparency and consistency.
>
> *Nicolas Moreau, Department of Finance, Canada*

Andrew Bastien (PSP): Similar to CPP, our business model involves leveraging the balance sheet to buy private market assets. More specifically, we borrow to buy real estate, infrastructure, and natural resources projects. This means that even at interest rates of 3-4%, which is much higher than what we've seen in recent years, our business model doesn't change and still makes sense, since our expected return on the assets we are leveraging are much higher than 3-4%. My view of the move in rates is that we're kind of moving back to levels that are more normal from a historical perspective. At PSP, we look at both our assets and the debt programs from a long-term perspective, so we're looking at long-term returns and long-term costs for the debt programs. The rates volatility in the short-term doesn't change anything for us in terms of how we manage the business.

> At PSP, we look at both our assets and the debt programs from a long-term perspective, so we're looking at long-term returns and long-term costs for the debt programs. The rates volatility in the short-term doesn't change anything for us in terms of how we manage the business.
>
> *Andrew Bastien, PSP*

Jim Hopkins (British Columbia): We don't think today's interest rate environment is unexpected nor frightening in a historical sense. Levels are actually relatively modest in any historical context. Our interest bite going into this period is very modest; only 2.3 cents of every dollar of revenue is going to pay debt service costs. Our debt metrics have improved materially like I believe they have for the other provinces. As we go into this period, while it may be volatile, there's no cause for knee jerk changes to borrowing strategy. Our view will be to continue to look at 10s and longer, and if interest rates remain relatively high, 5 and 7 year offerings may also have a fit. We lament the fact that the economics of the offshore market wasn't with us this year. We did not do any offshore financing, but we hope that it will come back and we'll be monitoring that very closely. BC derives a lot of value from a diverse and global investor base and we actively direct the province's investor relations to that end. This year big kudos are due the domestic market for absorbing as much provincial debt as it did and, uniquely, at terms right out to 30-years. We did not suffer shortage of offshore interest in the Province's name, for which we are grateful. The interest was often limited to shorter dated opportunities, at least in the public format, and not with attractive economics. We'll just hope that it turns soon, and the focus will be to try to make a bigger statement in the offshore markets as the borrowing economics show better results.

This year big kudos are due the domestic market for absorbing as much provincial debt as it did and, uniquely, at terms right out to 30-years.

Jim Hopkins, British Columbia

Jason Daw (RBC): I think the Bank of Canada is probably done raising interest rates. Maybe there's a residual hike in January if some of the upcoming data doesn't cooperate. From investors in the room, any views on what you think, as far as terminal, and what will happen to policy rates in 2023?

Ryan Goulding (Leith Wheeler): So the way we look at that is, I mean, you can't ask terminal without asking how long, but we're really talking the time value of money here. I think that central banks, given those two levers of time and value, are nearly done adjusting the value one. The real one we should be talking about now is the time and expectations of how long the rates are high for. I think they continue to be pushed out. So instead of terminal rates, we should really be asking ourselves how long will they be there? And then on a forward basis, what is the catalyst that gets them to start going down and what do they go down to? What that really comes down to is the reaction functions of both monetary and fiscal policy makers when we do hit some bumps down the road, and the sequencing of those reaction functions. Those to me are the really interesting questions. Whether it's another 25 or 50bps, I no longer care, and I'm looking at those down the road and because I think those are the ones that are really going to tell us if the curve's priced properly, they're going to give us those indications as to when that curve is going to go through and when it will begin its next cycle here.

So instead of terminal rates, we should really be asking ourselves how long will they be there? And then on a forward basis, what is the catalyst that gets them to start going down and what do they go down to?

Ryan Goulding, Leith Wheeler

Jason Daw (RBC): So would your base case be rates higher for longer?

Ryan Goulding (Leith Wheeler): I would say high for longer, not higher. I think we're going to pull on that time lever and be at high rates for a much longer amount of time than we consider, partly because of the fiscal response functions that are now going to happen. It could offset the necessity for central banks to cut in the future, and I think we're going to have a little bit of a different interaction.

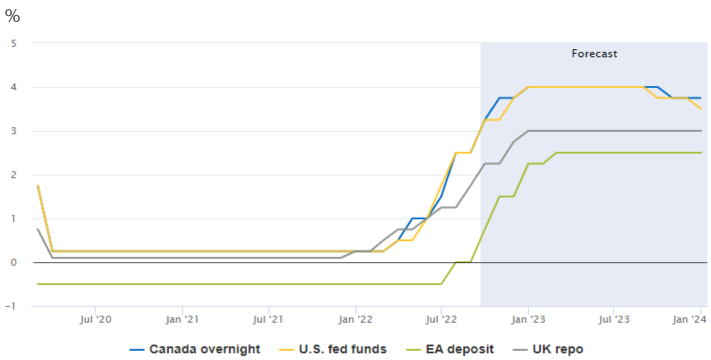
Jason Daw (RBC): We expect 2023 growth close to 0%. In 2023 we could see a scenario where the bank is holding rates at a high level for all of 2023. Yes, there could be some sectors that provide an offset, but 2024 could be a pretty poor growth backdrop also if rates aren't cut in 2023. It also won't be your traditional rate cutting cycle; maybe there are corrective cuts but not a large easing cycle, which could mean sluggish credit demand for a few years. Matt, what are you thinking?

Matthew Cassell (HOOPP): What has surprised me sitting at the table here is that all the provinces say that these rate hikes are having a very minimal impact on their bottom line, given term funding rates are not that restrictive yet and their long term maturity profile. Consumers have not really felt the pinch either from rate increases. I think central banks next year must convince the market that they're going to be higher for longer or they're going to have to continue to hike. I don't believe they've been able to achieve truly restrictive policy because the curve inversion has taken much of it away. The central banks have not been able to get the yield curve priced in a way which is going lead to enough restrictive policy to get inflation back to target.

I think central banks next year must convince the market that they're going to be higher for longer or they're going to have to continue to hike.

Matthew Cassell, HOOPP

CENTRAL BANKS HIKE INTEREST RATES TO FIGHT INFLATION



Source: Haver, RBC Economics

INTEREST RATES

%, end of quarter 2022

				Forecast									Forecast		
	22Q1	22Q2	22Q3	22Q4	23Q1	23Q2	23Q3	23Q4	24Q1	24Q2	24Q3	24Q4	2022F	2023F	2024F
Canada															
Overnight	0.50	1.50	3.25	4.25	4.25	4.25	4.25	4.25	3.75	3.50	3.25	3.00	4.25	4.25	3.00
Three-month	0.60	2.08	3.58	4.15	4.15	4.15	4.15	3.90	3.50	3.25	3.00	2.85	4.15	3.90	2.85
Two-year	2.29	3.09	3.80	3.90	3.75	3.65	3.60	3.30	3.00	2.90	2.80	2.70	3.90	3.30	2.70
Five-year	2.41	3.11	3.33	3.15	3.05	2.95	2.85	2.75	2.70	2.65	2.60	2.55	3.15	2.75	2.55
10-year	2.40	3.23	3.17	2.90	2.85	2.80	2.75	2.70	2.65	2.60	2.60	2.60	2.90	2.70	2.60
30-year	2.38	3.14	3.09	2.90	2.90	2.90	2.85	2.85	2.85	2.85	2.85	2.85	2.90	2.85	2.85
Yield curve (10s-2s)	11	14	-63	-100	-90	-85	-85	-60	-35	-30	-20	-10	-100	-60	-10.00
United States															
Fed funds*	0.38	1.63	3.13	4.38	4.88	4.88	4.63	4.38	4.13	3.88	3.63	3.38	4.38	4.38	3.38
Three-month	0.52	1.72	3.33	4.70	4.80	4.75	4.50	4.25	4.00	3.75	3.50	3.25	4.70	4.25	3.25
Two-year	2.28	2.92	4.22	4.50	4.25	4.10	3.85	3.65	3.35	3.05	2.80	2.55	4.50	3.65	2.55
Five-year	2.42	3.01	4.06	4.00	3.70	3.50	3.40	3.30	3.20	3.10	3.00	2.95	4.00	3.30	2.95
10-year	2.32	2.98	3.83	3.75	3.75	3.65	3.55	3.45	3.35	3.25	3.20	3.15	3.75	3.45	3.15
30-year	2.44	3.14	3.79	4.00	4.00	3.90	3.90	3.85	3.80	3.75	3.70	3.65	4.00	3.85	3.65
Yield curve (10s-2s)	4	6	-39	-75	-50	-45	-30	-20	0	20	40	60	-75	-20.00	60.00
Yield spreads															
Three-month T-bills	0.08	0.36	0.25	-0.55	-0.65	-0.60	-0.35	-0.35	-0.50	-0.50	-0.50	-0.40	-0.55	-0.35	-0.40
Two-year	0.01	0.17	-0.42	-0.60	-0.50	-0.45	-0.25	-0.35	-0.35	-0.15	0.00	0.15	-0.60	-0.35	0.15
Five-year	-0.01	0.10	-0.73	-0.85	-0.65	-0.55	-0.55	-0.55	-0.50	-0.45	-0.40	-0.40	-0.85	-0.55	-0.40
10-year	0.08	0.25	-0.66	-0.85	-0.90	-0.85	-0.80	-0.75	-0.70	-0.65	-0.60	-0.55	-0.85	-0.75	-0.55
30-year	-0.06	0.00	-0.70	-1.10	-1.10	-1.00	-1.05	-1.00	-0.95	-0.90	-0.85	-0.80	-1.10	-1.00	-0.80

Note: Interest Rates are end of period rates. * Midpoint of 25 basis point range

Pier-Andre Blanchet (Industrial Alliance): Our internal view is higher for longer. We are pricing another 25bps basis point hike for early next year in January, and yesterday's statement clearly signaled that we are off autopilot and are more data dependent. I think we're going to see a waning CPI momentum by the end of Q1/Q2 and next year.

Jason Daw (RBC): On the topic of how high policy rates need to go and how long they need to stay high for, revolves around the inflation outlook. The Bank of Canada might be very cautious and make sure they get to their inflation target before contemplating cutting rates. I think the difficulty with 2023 is there's going be a big cyclical impulse in inflation to the downside. All the supply driven inflation that we had in 2022 is going to disappear and might even turn to a deflationary impulse. Shipping costs are back at the levels they were before COVID. Energy prices have come down quite a bit versus where they were earlier in the year. Goods driven inflation should come down under the weight of higher rates. However, the big question is - is inflation going to be structurally higher than it has been in the past? While there are arguments in that direction, whether it's demographics, de-globalization, or labour market frictions these are definitely possibilities. One of the things the bank's going to have to keep an eye out for is what's happening on the labor cost side. The union wage settlements that we've had over the past couple of months are closer to 3.5-4%, while pre October they were all 2% or below. British Columbia had union wage settlements that were close to 3.5-4% and on the public side in Ontario, we've had 3.5%. So, there is that risk on the inflation side which we should have more information on in the incoming Business and Consumer Outlook Surveys. But, as far as the provinces go, revenues have been good, partly because inflation has helped. Have you seen that feed into your cost/expense base?

Amy Gates (Saskatchewan): We are also seeing the impact of inflation, in particular the impact on capital projects. Supply costs are up and labor costs are up. To keep government capital spending on budget, some projects have been scaled back. As well, Government is cognizant of competing with the private sector for the limited labour pool. There has been quite a lot of private capital investment in the province recently, for large scale agriculture sector projects in particular. Inflation is very real and is an important part of budget discussions, as government assesses how to maintain capital spending at an appropriate level without unduly impacting private capital projects.

Jim Hopkins (British Columbia): Yeah, I totally agree with that. We're also seeing pressure on the capital side of our spending programs, and we may have to recalibrate because I think it's actually systemic. I think the labor shortfalls and the overall capacity limitations are real. On the operating side, inflationary pressures are a reality and our answer to it in British Columbia is to budget with contingencies. For example, this year, we've got C$4.8 billion of contingencies for all matter of exogenous events over which we have no control or other things that we can control. The answer is just to make every effort to manage through downturns and not surprise to the downside. Contingencies are a big part of that equation, and play an important role in how we manage pressure on our operating budget. Except for the most recent year of COVID, we've been able to hit our targets and generally manage to the upside of our targets.

Guillaume Pichard (Quebec): Yeah, we have some of the same contingencies built into our fiscal framework which was just updated today. Jason, as you've mentioned, inflation affects both revenues and expenses, but it is a risk, and it's a risk we will be building in contingencies for the rest of this year. We have to build in for contingencies until March, not only for inflation, but also the possible downside. We also planned for C$2 billion of contingencies next year, and just like Jim said, it's planning in our fiscal framework, and not to be caught on the downside.

Dave Ayre (CMHC): On the housing side we're seeing inflation having a major impact on addressing the housing affordability problem and we're starting to see projects being sidelined, either due to labour shortages or supply chain issues, but it depends on the project. When we talk about that backlog of supply this is another hurdle to getting more supply built to address the gap. We simply don't have enough workers and the costs are increasing. We're not only seeing that in the construction space, but we're seeing housing affordability in the rental space get hit too with year-over-year rent increases up as much as 30% in some areas. Obviously when people cannot afford a home or condo the next logical step is rental but when rental is going up by those kind of numbers, it's a challenge.

Mike Manning (Ontario): We're seeing the same thing in Ontario with the capacity problem. I think there are two things that are going to happen: new builds are going to have to be delayed or we're going to have to pay more for projects. Ultimately that could come back and impact our borrowing program, so it's an evolving situation.

Stephen Thompson (Alberta): We've faced the same challenges as all of our provincial peers in terms of the inflation side. The revenue side is obviously dominated by distortion from natural resource revenues, but the thing on the expenditure side is that we've had a government in place now for almost 4 years, and we have been hyper focused on expenditure reduction, expenditure restraint and bringing Alberta's per capita spending in line with the larger provinces (the three provinces being, Ontario, Quebec and British Columbia). They've actually been quite successful in reducing expenses, so the impact of inflation has been somewhat lost in that process. That being said, thinking about that process is a challenge, but our expenditure side has actually fared well.

REAL RETURN BONDS (RRBS)

Jason Daw (RBC): Okay. Last topic before I turn it over to Alex for the second part of the roundtable. Nick, could you give us background on the recent decision to stop issuing Real Return Bonds? As a follow on question, directing to the provinces and the issuers, have you been thinking about, or would you consider, issuing a real return bond product?

Nicolas Moreau (Department of Finance, Canada): Yes, we recently announced that we terminated our Real Return Bond program.

The decision to cancel the Real-Return Bonds (RRB) program was taken because the demand for this sector is too low to justify maintaining it.

The decision to cancel the Real-Return Bonds (RRB) program was taken because the demand for this sector is too low to justify maintaining it.

Nicolas Moreau, Department of Finance, Canada

The government and Bank of Canada, in its role as fiscal agent, undertook extensive consultations in 2019, which showed poor demand for RRBs. The summary of these consultations is available on the Bank of Canada website: Government of Canada Real Return Bond Consultations Summary (bankofcanada.ca). At the time, the decision was taken to reduce the size of annual RRB issuance and to continue to monitor the performance of RRBs in achieving the government's debt management objectives of stable, low-cost funding and well-functioning Government of Canada securities markets.

The government and Bank of Canada perform annual debt management strategy consultations, including in September and October of 2022, the summary of which is also posted on the Bank of Canada website. The RRBs are always discussed as part of these consultations and the low level of demand for RRBs was once again reinforced by market participants. This continued trend of low demand for RRBs was the main determinant for cancelling the program.

Jason Daw (RBC): What about on the Provincial side?

Mike Manning (Ontario): We issued our last real return bond in October of 2009. It was for a very specific purpose; we had an inflation linked liability on our books that we wanted to replace at a lower real interest rate and lock in savings, so it made a lot of sense. But we find with RRBs, they're difficult to hedge; if you change your mind, it'll be difficult in the swap market to manage the risk. So, we have no issuance plans. We certainly haven't had much investor demand for them as well.

Guillaume Pichard (Quebec): We get the demand now and then but it would not be large enough to sustain a bond program. Also, to Mike's comment, we were issuing a lot of RRBs in the past, but we stopped because of lack of being able to hedge out inflation. Now if we ask, Jason, can we take a place with the Bank of Canada and Finance? I don't think so. Especially without a benchmark market, and we're not going to do that.

Jim Hopkins (British Columbia): We have no plans in British Columbia to issue RRBs.

ESG & SUSTAINABLE FINANCE INITIATIVES

Alex Caridia (RBC): Okay. We'll go into the second part of the discussion, which is more focused on funding. I want to start with discussing ESG and green bonds because I think that topic is frequently spoken in any meeting with either an investor or an issuer these days. I think just over half the issuers around the table here have issued something in a sustainable format. To kick things off, Kevin, can you give us an overview of ESG issuance in the Canadian Public Sector Space?

Kevin Martin (RBC): Yeah, I would make a couple of observations. Looking at it globally, the amount of green, social, and sustainability & sustainability-linked bond issuance is actually down over the year. Canada's going against that trend. If you look at the Canadian public sector issuance of ESG product, it's C$17 billion so far this year. That represents about a 180% increase over 2021. What's driving that significant increase? Two things. The Government of Canada, certainly with their C$5 billion 7-year inaugural Green Bond, which made a splash in the domestic market. But the other aspect is that the Canadian pensions are coming back to issue in Canada. And so we've seen inaugural ESG issuance not just from Canada, but PSP Capital, CADEPO, and Ontario Teachers Finance Trust. CPPIB also returned to the Canadian market with a green bond in 2022. So that's really what's been driving the increase here in Canada. I'd be interested to hear from others around the table, in terms of their experience in the domestic ESG market so far this year.

> If you look at the Canadian public sector issuance of ESG product, it's C$17 billion so far this year. That represents about a 180% increase over 2021.
>
> *Kevin Martin, RBC Capital Markets*

Nicolas Moreau (Department of Finance, Canada): Yes, the government is committed to an annual green bond program. This means the government will conduct another green bond issuance before the end of fiscal year 2022 – 23. Further details will be announced closer to the date of issuance.

The updated debt management strategy for 2022 includes a place holder of $5 billion for an issuance in fiscal year 2022-2023. The actual issuance size will be guided by the availability of expenditures and market conditions. Fall Economic Statements 2022 also announces our intention to explore the development of a sustainable bond framework. This is consistent with consultations on the future of green bonds and the potential for social bonds which have been performed over the last two cycles of debt management strategy consultations. We will continue to consult market participants and observe international developments within the sustainable finance space to determine next steps. Further details will be made public once consultations have been completed; all details remain subject to further analysis at this time.

Alex Caridia (RBC): On the topic of sustainability versus green, Chad you recently updated your framework. Could you give us an update on that?

> Putting that framework together, adding new categories, enhancing it, bringing more clarity on the types of projects and working with partners like RBC to do that brought a lot of expertise into the development of the framework.
>
> *Chad Buffel, EDC*

Chad Buffel (EDC): Yeah, we started our initial framework with the green bond back in 2013, so it was really in need of an uplift in that context, and we wanted to expand on it as well because there's been a lot of recent efforts to drive a lot more behaviors within the social/environment side of things. If we're going to be involved, let's put a program and framework in place that'll try and drive a lot more of that behavior. We needed to bring things up to the current standard. There's a lot of work that's gone on certainly over the last 8 years on the standards front. We are obviously helping the export sector, but how do we encourage and help companies evolve so that they can become more sustainable or greener.

Driving some of the other aspects of our framework, whether it's on the social side or environmental side, we are trying to make sure that we've got that keen focus, as well as the measures, and reporting, and the kind of people/resources that understand today's standards. Putting that framework together, adding new categories, enhancing it, bringing more clarity on the types of projects and working with partners like RBC to do that brought a lot of expertise into the development of the framework. Now with the framework in place we've got a way to help businesses start and enhance their journey for sustainable projects. While we are not necessarily looking at doing a Transition, or Social Bond right now, there's a lot of internal work to do, to ensure that we've got the right tools, the metrics, reporting and management for each of these areas.

I think putting the new framework out there is really a way of having dialogue, getting feedback, and talking to investors to try to get a better sense of what they see as issues and what expectations they have. Especially transition: I think that's probably going to be the most interesting dialogue with investors. We want to get a lot of feedback so that when we are in position to do it, we want to make sure that we have full transparency on what's there so that investors can make informed decisions; they understand the details behind the projects.

Ideally, we'll be out with a green bond next year, we've got that framework in place, and we've done them before. That'll be our ambition for next year. We just want to make sure that we've got a lot of the legwork, especially in the reporting and the metrics, which are stronger drivers now than in the past. So that's our focus at this stage, which will help drive processes internally. I think probably the biggest struggle we have is trying to keep the people. There's a lot of turnover in this area, so keeping the people that have the expertise, who give us a consistent approach in the measuring and reporting processes, has been a challenge during 2022.

Alex Caridia (RBC): Talking about transition now. Steve, do you have anything to add?

Stephen Thompson (Alberta): It is a space you believe in, and I think the ESG space will mature to the point where it's not going to be seen as disingenuous for the Province of Alberta to put up some sort of sustainability framework. I would expect it to include transition, probably be focused on transition, but I would envision something that would allow us to issue green, social or transition bonds. We have spent a lot of time in the past few months meeting with investors, many of whom are at the table, many of our peers and investment dealers, introducing our ESG secretariat and our jurisdictional ESG framework. I think we've actually made a lot of progress in this space, and if and when we ever borrow money again, I have to imagine that we would include a sustainability program of some sort.

Alex Caridia (RBC): One of the things that always surprised me on green bonds is that, even though there are 10 provinces in Canada, only two of them have issued in Green format so far. They have been issuing since 2014, but to start I wanted to focus on some of the other provinces. Maybe starting with, Jim, in terms of your view and potentially looking at a Green Bond or an ESG bond, can you expand on what BC thinks on that?

> We feel that we get more dividend payback from getting that understanding with investors so that it's embedded in our borrowing program. So, when an investor buys a BC bond, they're going to accept it as actually a purchase of an ESG compliant security.
>
> *Jim Hopkins, British Columbia*

Jim Hopkins (British Columbia): Yes, a green bond is not on the agenda this year. Never say never, and the province of BC may want to issue one day but our focus is really on trying to get the story out there that BC is a jurisdiction that truly embraces ESG values and the outcomes, and that the government embeds ESG into its programs, policies and projects. In August 2022, our government released the first, comprehensive report to summarize the province's ESG profile and credentials (a copy of which is available on line). We feel that we get more dividend payback from investors when we can earn acceptance that the government embeds ESG in our borrowing program. So, when an investor buys a BC bond, they're going to accept it as actually a purchase of an ESG compliant security. I think a Green Bond can be overstated sometimes as to exactly what impact it's having on the quality of life. I think there's a greater bang to be realized from ESG by putting issuers up against an ESG metric rather than looking at whether or not a transit system is financed by a Green Bond or a traditional bond. That project happened however it was financed and the benefits for climate were realized in any case; it wasn't a function of the form of the finance. But, I get it that investors, have a place for these instruments in their portfolio and we listen and may well, one day, issue a green bond. I would add that relatively smaller issuers like British Columbia have cause for caution when considering issuance of green bonds. We have always been reminded by investors and investment dealers of the importance of liquidity. We're also mindful that we risk diluting liquidity in our mainstream program by launching a green bond program. Liquidity is precious and optimizing it will always remain top -of-mind to support BC's overall performance in the capital markets.

> Now we're seeing investors asking for issuer ratings more than looking at the instrument or framework.
>
> *Alex Caridia, RBC Capital Markets*

Alex Caridia (RBC): Yeah, I think that's an interesting point when you talk about the instrument versus the issue overall. It's interesting to see, over the last 15 years, how the market has evolved. A lot of issuers were actually making a similar point to what you're making now, which is, that everything we do is a social or green given their mandates as public sector issuers. They then put frameworks in place because in many cases there was political pressure to do so. Now, we're seeing investors asking for issuer ratings more than looking at the instrument or framework. Maybe a question for some of the investors around the table. Do you look at the issuer more than the actual bond? Given the liquidity or the constraints on a green bond, would that make more sense for you?

Ryan Goulding (Leith Wheeler): I like how you frame that. I like Jim's answer as well. We look at every green bond the same way we look at any other bond. We're portfolio constructors, not bond buyers. The way that it fits into the portfolio that I'm trying to create for my clients, given the mandates they've given me. We've bought green bonds in the past, but for the most part, I do think that the give on liquidity is not necessarily worth it. We do however look, and I like the approach that Jim said, and the same thing with BCMFA and First Nations Finance Authority in saying, "Look, we're trying to do the best we can overall, and we shouldn't be necessarily carving out, there's a lot of work going into carving out these specific bonds." I get a call for every single green bond issue from clients saying, "Did you buy that?", and most of the time, my answer is "No". They then say, "Why not?", and I respond with "There's never been a project today that hasn't, wasn't going to get financed anyway, and by us not buying this, it didn't change whether or not that project got done". We do look at the overall investment and we take a much bigger view in terms of what the overall issuer is doing instead of the specific issues coming up.

Jim Hopkins (British Columbia): To Ryan's point, I think investors should hold us as issuers accountable to tell the ESG story. So what's the evidence? What we did, as I mentioned earlier, was report in August on our ESG profile and provide a waterfront perspective on BC in the ESG world. The report has areas for improvement but we think it's really important to take the initiative. We are also following Alberta's lead in ESG governance. Alberta, as you know, has a Secretariat, and we're hoping in the spring time to roll out what we are planning to call an ESG Center for Excellence. This is intended to further substantiate the province as a jurisdiction which actively values ESG. Robust reporting is a multi-year journey and undertaking. As I said, I think that the shortcoming in our reporting, which we took back in terms of feedback from investors and bankers, is interest in more performance-based data. So we have to go back and work on that and do a better job. I think if issuers are listening then hopefully this approach will provide a large part of the answer for investors.

> We are working on a Sustainable Bond Framework to replace our Green Bond Framework.
>
> *Mike Manning, Ontario*

Stephen Thompson (Alberta): I think we're actually very likely to follow you in terms of reporting something for Alberta as a jurisdiction. We have the jurisdictional framework set up and we have some data, though we don't have enough data for a proper report to your point. I think that's just the way we're going to go, and if we don't own it now, it's going to be imposed on us by someone else.

Matthew Cassell (HOOPP): We find green bond liquidity to be asymmetric. It's very easy to sell a green bond and we generally find there is superior bid side liquidity relative to non-green bonds. This is because there remains some sticky green cash that doesn't often sell and a focused buyer base. On the opposite side, it is very hard to buy green bonds in secondary markets for the same reason. As with most investors, we always try to buy in primary because we just can't find it on the secondary market. Given this asymmetry, we view owning green bonds as a bid side liquidity upgrade.

Alex Caridia (RBC): Thank you Matt. Perhaps Mike, moving over to your plans on green bonds.

Mike Manning (Ontario): For the past several years we've been issuing two green bonds per year. We started off by issuing just once a year, and we've found the strategy of increasing issuance to work quite well. We're planning for our second green bond of the year, probably in January or February of 2023. Like some of the others here, we are working on a Sustainable Bond Framework to replace our Green Bond Framework, which is a little bit dated. It came out in 2014, and so we expect to have the new framework in place probably at the start of the next fiscal year, April of 2023. We will have the ability to issue social bonds, but I don't think that the market is there yet in terms of investor demand or cost savings. I think having the ability to potentially issue social bonds will be beneficial to have as a part of our overall borrowing program.

> We continue to work with industry partners on an ESG framework for CMHC's securitization programs.
>
> *Dave Ayre, CMHC*

Guillaume Pichard (Quebec): We've just updated our framework, and we'll keep the green label. We did look into it and one thing we found out was that the projects we actually fund that are infrastructure qualify more as green than social and sustainable. Not that we don't have these types of projects, but we fund them with taxes and other revenues. So we raised that for capital projects, and I think we made the right choice to keep the full focus on green when we look at our pool of projects that are upcoming. This year, to Kevin's point, we've been part of the higher issuance in Canada, and for the first time we've done two green bonds six months apart. The first one was a 10-year C$1 billion bond, which is also our biggest one ever on the board. Just a few weeks ago, we brought C$800 million green bond to the market, so all in that brings our total to C$5.1 billion of green projects funded over the last 5 years.

Alex Caridia (RBC): Thank you Guillaume. Dave, any comment?

Dave Ayre (CMHC): We continue to work with industry partners on an ESG framework for CMHC's securitization programs. We do not have a timeline at this stage. We did initiate a project in early 2021 to facilitate some funding of affordable multi-family mortgages in the 10-year space. Essentially what we did is we allowed priority access to CMB funding for mortgage originators that generated affordable multi-family housing mortgages that met certain criteria – and it's been pretty successful. We funded to date a little over C$11 billion for those originators since last year so even though that was not a labelled product, you could argue that it's provided an incentive to mortgage originators to actually go out and originate new multifamily mortgages, which should ultimately help support housing affordability for Canadians.

FUNDING PROGRAMS

Alex Caridia (RBC): I'll move on to the domestic funding now, and I think I'll start with Sam. Sam, you've just added another process to the way you fund domestically. Perhaps it's worth updating the group on what you've done, and why you've done it, and the success you've seen thus far.

> Our goal for next year will be similar, with a view to grow our CAD footprint in the years to come.
>
> *Sam Dorri, CPPIB*

Sam Dorri (CPPIB): Happy to. Last week we announced that in addition to the traditional two-day syndicated book build process, we're also going to be looking at retention style issuance in the CAD market. Earlier this year we had indicated that we would look to issue C$4 to C$5 billion of our C$15bn equivalent total funding in the CAD market. In the end we hit C$4.4 billion in CAD this year, which was the midpoint of that target. Our goal for next year will be similar, with a view to grow our CAD footprint in the years to come. Part of our desire to access retention transactions is to facilitate that growth profile. It's interesting, I had conversation with Matt Cassell who is at this table, and he made the point that as we hit steady state funding in CAD, we'll want our issues to be less of an event; it was something that resonated with me. And if you look back at this year, when we made our return to the CAD market those first couple trades were big events. As we move to steady state, becoming more regular and predictable, we think it's important to adopt the retention standard that is present and efficient for borrowers in this market. That was ultimately the logic behind the announcement; it wasn't a tactical shift based on this year's funding challenges in global markets, but rather a longer-term commitment to the Canadian market.

Alex Caridia (RBC): Yeah, I think from a liquidity perspective, it makes a lot of sense. I mean, we've spent the last few months traveling around, and it's amazing how Canada sets itself apart, particularly in the domestic Provincial market in terms of liquidity. In terms of turnover numbers compared to some of the SSA markets you've seen, spreads have moved less here in Canada, and we've seen issuers access the market more frequently with longer maturities than in other markets. Are there any plans to do similar on the PSP side?

Andrew Bastien (PSP): Well, I'm not sure we will immediately follow the same type of retention style issuance domestically since we don't have the same program size as CPP. I do think what Sam is doing in the domestic market is interesting because as far as the federal asset manager space is concerned, we kind of owned that space in Canada for a long time, while we were only issuing maybe a billion dollars a year. If you look 4 or 5 years down the road, I think the domestic issuance between the two of us is going to be huge, and it's going to be bigger than what you see from most of the provinces in this country. This will create a federal asset manager space that investors are going to want to look at, because to Sam's point, it's not going to be an event when somebody issues, it's going to be continuous issuance. Although we will also be focused on building out our program internationally, in USD and EUR, the Canadian market will always be very important to us. I think going forward, when I look at what CPP is doing, it's similar to what you should expect from PSP in 4 to 5 years from now.

> The story for PSP right now is that we are moving from a purely domestic program to being a global issuer.
>
> *Andrew Bastien, PSP*

The story for PSP right now is that we are moving from a purely domestic program to being a global issuer. We've been issuing domestically since 2008 but only established our Global MTN program in 2021 to access global markets. With a growing issuance program, we will eventually get to the point where we will need to think of new issuance formats. I think we're going to do interesting things in the future, both domestically and internationally.

Kevin Martin (RBC): It's an interesting theme. I do think it's one of the main themes for Canadian public sector funding in 2022. The return of the pension asset managers coming back to Canada to do their funding. This year, 8% of total domestic public sector funding has been pension asset managers, versus 2% last year. Based on what we're hearing around the table today, there may be considerably more issuance from this sector going forward over the next few years.

Alex Caridia (RBC): From the investor's point of view, Pier, do you have a view on the bookbuild versus a green banner type deal?

Pier-Andre Blanchet (Industrial Alliance): Well, as an insurance company with the biggest share of our portfolio tracking long-term liabilities, we're less involved in shorter term issuance. But I really like this process, so it encourages orders in advance and building the next deals.

> The provincial style type deal encourages orders in advance and building the next deals.
>
> *Pier-Andre Blanchet, Industrial Alliance*

Matthew Cassell (HOOPP): I was really happy and supportive to see CPP move to a more provie like issuance process. It's clear to me that over the next few years we are going to see a surge of issuance from pension funds and crown asset managers. But between here and there, there are a number of things the market is going to have to sort out. Can we make pension asset managers a true HQLA level one asset? How do we treat and price the stratification of CPP, PSP, CADEPO, ONTTFT? Can we develop a repo market for these assets? Will they be accepted as collateral under CSAs? I think these are critical issues that have to be dealt with ahead of the upcoming issuance surge. I feel like the coming issuance by pension fund and crown asset managers is not fully appreciated by the market. This is going to be such a significant part of our HQLA market in Canada, but there's still many things to solve on the way to getting there.

Alex Caridia (RBC): And Mike, from your perspective, any plans for the domestic market?

Mike Manning (Ontario): I think the domestic market has really served us well, and we have had fairly continuous issuance, supported by 24 domestic deals so far this year; and there's still a couple months to go. I think the thing that's really been very beneficial to our program is the liquidity that our bonds offer. I think that's one comparative advantage that we may have over some other issuers. So we're quite happy that we can take advantage of that.

Guillaume Pichard (Quebec): Well, we haven't talked about how it's been a lot more difficult this year than it was in the past years. Honestly, sometimes you really had to work your deal, meaning you had to call the dealers a lot and tell them that you need to get a few issues done, and find investors. Sometimes you had to be a little bit more vocal on your intentions to go to the market to get a deal done. Recently, things have been much better and in the last few weeks, we were able to do three deals in one week, which was a tremendous week for us. It was also a good week for everyone, it was definitely encouraging. Going forward, we are hoping that it stays this way. The Canadian market has been absorbing a lot of deals like Jim mentioned, but at the end of the day, it is not one of the big financial markets in the world. I am maybe getting off topic here, but, talking about the arbitrage on the international market, I do hope we get to see it soon. That would be helpful for the last quarter of the year.

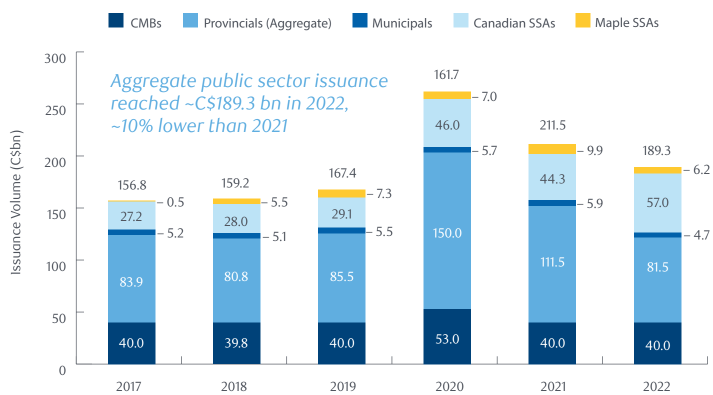
Alex Caridia (RBC): You make a good point and if I look at offshore funding this year, it's at a low, certainly since I came to Canada, with about 15% of total provincial funding. In 2017, that was at 35%. Interestingly, arbitrage for offshore SSA issuers is trying to access Canada, has also not been working that well. It worked in January or in February, but we've only seen eight maple deals this year, compared to last year which was 16. This means that it's 30-40% lower in terms of volume as well.

Guillaume Pichard (Quebec): So, we're only at 8% for this year, and we did a big GBP deal way back at the beginning of the year which was a positive deal. It's not that we haven't been looking. We've been looking every day, but when we look to the spreadsheet, the arbitrage is way off and the demand has also been lagging. It just hasn't been an opportunity that we could sit on, both in the US market and your own market.

Sam Dorri (CPPIB): One additional factor to consider has been the amount of covered bond issuance by Canadian banks. This has been particularly evident in a handful of offshore markets – markets like GBP and EUR – where the spreads they're borrowing at have had an impact on many of the borrowers in this room. We've heard some of this feedback directly from global investors and it has been a growing theme as they've increased their proportionate borrowing profile in the covered bond space by a non-trivial amount.

Alex Caridia (RBC): Think that's pretty good point. Amy, Saskatchewan did manage to get a USD transaction done, so perhaps do you want to comment on that and any plans for the future?

AGGREGATE PUBLIC SECTOR TOTAL ISSUANCE (ALL CURRENCIES)



Source: RBC Capital Markets

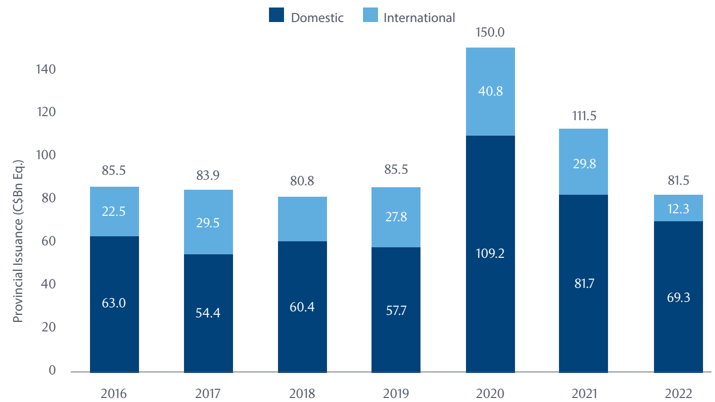
Amy Gates (Saskatchewan): Yes, Saskatchewan re-entered the USD market this year for the first time since 1994. The deal in 1994 was a 10-year deal. Our last 30-year issuance was in 1992 and had just matured this year. The recent deal went very well. It was oversubscribed, and we see one of the biggest benefits being that we introduced the Saskatchewan name to 50 new investors. In recent years, foreign issuance on a large scale - and maintaining SEC registration - hadn't made sense since the Province's borrowing program was not large enough. With increased borrowing in recent years, plus the desire to broaden our market access it made sense to reconsider re-entering the USD market. Going forward, we are committed to maintain about a third of our issuance in foreign markets. In the near term we expect this will primarily be USD, possibly in the next fiscal year.

Alex Caridia (RBC): Great. Thank you. Jigme, any comment generally on offshore and production?

> Going forward, we are committed to maintain about a third of our issuance in foreign markets.
>
> *Amy Gates, Saskatchewan*

Jigme Shingsar (RBC): Yeah, as you pointed out, the offshore issuance stats looked a little lean but I think that reflects a couple different things. One, obviously if you think about what the international markets are used for, most issues around the room use a combination of capacity management and diversification, and when your funding requirements are down then capacity management is less of an issue. Then, it's more about diversification, and then you have the luxury of becoming a little more price sensitive. I think it all makes sense, and if you actually put the numbers in the context of how the offshore markets have been, to the extent that the second half of the year has been particularly volatile and difficult for offshore issuers generally. So I would say if you got 15% with issuance only in the first half, I think we did quite well. I think that speaks to the quality of domestic market access that you guys have here and I think that's also reflected in moves like what Sam's doing, and the continued presence in the domestic market of PSP. If I was to put a positive spin on it, I think that there's a large portion of untapped capacity in the offshore markets. To the extent that you need it as an outlet for capacity management, I think there's a lot of access there. Obviously not always at levels that you guys like, but it's there, and it's undersupplied. I think investors remained receptive to the Canadian story. I mean, we just did this roadshow in Asia and I think none of us would've expected that the Canadian story would still stand out as much as it has this many years after the global financial crisis. I think 15% is a low number obviously in historical context, but it reflects a difficult market. Sam's alluding to some of the reasons why in terms of competing supply

PROVINCIAL ISSUANCE



Source: RBC Capital Markets

from covered bonds issuance and the reversal of some spread compression and all that sort of thing. But, despite that, got a 10-year benchmark done, which is rare enough anyway. In that context, I think this group of issuers has done quite well, so I'm quite optimistic in terms of a market going forward.

Mike Manning (Ontario): Yes, we're still very committed to the international markets. You have to diversify your borrowing program and expand your investor base in international markets because there's always a day that could arrive where the domestic market is not as cost-effective as you would like. It's still important for us to stick with the USD market. We've only done one USD issuance so far this fiscal year and normally we would have done two or three at this point in time, and this speaks to the poor arbitrage conditions. But I think as we move into January and February, we're still going to have to look at the US market.

> I think that there's a large portion of untapped capacity in the offshore markets.
>
> *Jigme Shingsar, RBC Capital Markets*

Pier-Andre Blanchet (Industrial Alliance): As an investor, I understand the need for large issuer to maintain a curve abroad and to diversify their funding sources. However, the consequence for smaller issuers is our inability to provide full support to lighter issuance streams. The allocation of government bonds in our portfolio needs to be really liquid, so the bigger the benchmark, the more we're supportive. Issuing a high percentage of funding abroad ultimately reduces domestic liquidity which has direct implications on our portfolios positioning and liquidity levels. Maybe that's just our perspective.

Alex Caridia (RBC): That makes a lot of sense, I have two questions for Chad. One is, will we see EDC back in the CAD market, because that's obviously not normally where you fund and secondly, what is your view and plans on offshore issuance?

Chad Buffel (EDC): When we look at CAD, we are really focused on the ESG side. Most of the regular lending business we have in terms of CAD, we support through our capital. This allows us to focus our borrowing program on the international side.

When it comes to CAD, we do issue on the ESG side. We recognized, when we first started our Green Bond Program that the CAD market would benefit from us providing more paper and giving more liquidity for green investors. So, we'll ideally be back, and we're hoping to be back in the coming year. It's been a while since we've issued.

Andrew Bastien (PSP): For offshore funding, I think the conversation goes beyond the fact that the cross-currency swaps don't really work right now for Euros and Dollars. To go back to what Jigme was saying before, when you get market volatility, it's normal for global investors to look towards their domestic issuers, the issuers they're comfortable with. We did some work roadshowing in Europe this fall, and we had a lot of great meetings. Investors liked the credit, they liked the name, and they liked Canada, but the market backdrop just wasn't there. There was so much volatility. The feedback that we got from investors was that they look forward to PSP issuing in EUR, but that the current timing for issuance was not great, which is fine with us because we've always been a patient issuer. It has been that kind of year, where conditions are tough and you need to work with the market, and I think everyone had to adjust their plans and timing for issuance. We expect that in the year ahead will be more of the same, where we will have to adjust our plans based on market conditions. We never try to force a transaction into the market, but we do look forward to doing that first EUR trade at some point, hopefully in the near future.

Going back to green bonds for a moment, it would be possible that our first EUR transaction could be green, since there's so much demand from investors in Europe. The current market backdrop doesn't allow you to set your plans 12 months in advance and just do everything you want to do. Instead, we will spend more time understanding investor demand across different markets and trying to feed that demand.

Jigme Shingsar (RBC): I mean that's the other thing that comes into play. There are two components here. It's not for lack of demand, but what the demand is for, and then obviously the price is the other consideration. There's many issuers around the room that, for example, don't like doing shorter than 5-year funding, and I would argue that, particularly the latter half of the year, the market has lent itself to do more of 5 years and shorter. This means there is once again a misalignment even before we talk about pricing. These are all factors, but I think they're all good reasons to make sure you're not locked out of the market because nobody wants you and that's not a problem this group of issuers has.

Alex Caridia (RBC): Yeah, I think that's a really good point actually. I mean, both points are really good. Both investors and issuers are focusing more on their domestic markets and even the Domestic European or US based issues haven't been able to churn out in their own markets, so that makes it even more difficult for some of the Canadian names to come to the market. So, it's been challenging for them for sure. Hopefully that changes. I guess we're nearing the end of the discussion. I'm just wondering if there's anything anyone else wants to throw in on any of the topics we've talked about?

A borrowing program is a marriage not a date, and arbs is a date.

Ryan Goulding, Leith Wheeler

Ryan Goulding (Leith Wheeler): I'll jump on international because from a spread perspective, it's something that we consider a lot. I monitored through the year on a weekly basis how much internationals had done, and what components were left domestically. There's going to be impacts left on domestic spreads and this year is obviously concerning that the amount has been there. But totally understand that the relative funding levels have been off side, but I think it would be important as an investor to shift the conversation away from the arbs not being there. To me that's shortsighted. A borrowing program is a marriage not a date, and arbs is a date. I would love to know, how many roadshows have you done non-deal? How are you keeping those markets open? So if you had a slide in your deck that just said "Hey, we went on two roadshows this year, we saw 50 investors, 40 of them were private and were previous buyers, 10 were potentially new. We're not doing an issue, but the door to Europe is open for us". I'd like a little more clarity on that, and I think that's something.

Guillaume Pichard (Quebec): It's not being shortsighted on the cost of arbitrage, it's also the depth of the market too. If we're going to pay 20-25 basis points, and I'm not even sure I'm going to reach C$1 billion, the message I'm sending the market would be awful. If I'm going to pay 20-25 basis points, and I'm really sure the market's really good. We can in five years, which we've done in the past, to reach C$2 billion, then we have no issues. We've paid it in the past. So, it's not just the arbitrage. It's really both, arb and demand and can you get the size that actually will matter completing your program. And yes, we have done non-deal related roadshows all the time except for recently with COVID and the election back in September.

Sam Dorri (CPPIB): Just to reinforce Guillaume's point, market access has been an increasingly important hurdle that all the borrowers in this room have needed to focus on. Unlike in prior year, it's increasingly difficult at the outset to know if a successful trade is available. We've seen a number of pulled transactions this year, which in the SSA space has historically been extremely rare. And so one major point of focus for us has been ensuring continued market access. This reframes the arbitrage discussion in my view.

> One major point of focus for us has been ensuring continued market access.
>
> *Sam Dorri, CPPIB*

Matthew Cassell (HOOPP): The current cheapness on a cross currency swapped basis of USD provincials I view as a testament to the current risk aversion of investors. I don't recall a time in recent memory where the arbitrage for USD issuance has been this expensive for borrowers for this long. This year we have seen 5-year Ontario in USD being 10- to 30bps cheap to domestics. In typical market climates, the domestic asset swap investors come in and they scoop it up. They drive the arb level to flat. This has been a very unusual climate where you haven't seen Canadian asset swap buyers coming in to just scoop all this paper up, absorb it and put it on book. I think it speaks to the demand for investors for liquidity in the form of domestic assets, and a huge risk aversion of the market. Because in most prior market cycles, the cheapness of USD provincials disappears very quickly, and it is very rare to be so sustained.

Jason Daw (RBC): It's been one of the worst total return years for bonds past 4-5 years. So, that made people cautious. I think 2023 could be better, but suspected that's probably what drove difficulties in 2022.

Chad Buffel (EDC): To pick up on what Andrew and Sam were saying, just in terms of nimbleness, and being quick to identify borrowing opportunities and seize it. We want to move in and try to do it as fast as we can. It is critical to manage it so that you've got the right size, the right spread and be flexible about term. I think that's how we've tried to approach it this year. Not every deal goes exactly the way you think, but, to the extent that you can do it and say, yeah, that's a reasonable outcome, that's what we expect. I think that's going to be the strategy going into next year. I think it's going to get more difficult, at least certainly the first half, until we get some resolve where markets are going to land, but that's the key, flexibility.

Stephen Thompson (Alberta): Transaction execution is different than program management if you're a Province with an ongoing funding source, and let's not forget that arbitrage often, particularly as a less frequent issuer is pretty theoretical. It's easy to call something off-side with nothing to actively compare to. It's often a question of funding versus not funding. So, there is a criticality to funding for provinces because the cost of not being able to raise funds is just too dire. That's not a theoretical trade, it's about meeting your cash obligations regardless of cost sometimes.

Alex Caridia (RBC): Okay. I think we're right on time so this feels like a good place to end the discussion. Thanks again to everyone for your time, insight and participation today, we really do appreciate it.

SSA Roundtable

ISSUER REPRESENTATIVES

Anthony Ostrea
Senior Treasury Specialist, Asian Development Bank (ADB)

Jorge Grasa
Senior Funding Officer, European Investment Bank (EIB)

Aldo Romani
Head of Sustainable Finance, European Investment Bank (EIB)

David Abensur
Senior Funding Specialist, Inter-American Development Bank (IADB)

Zauresh Kezheneva
Financial Officer, International Finance Corporation (IFC)

Piet Jurging
Vice President Funding, KfW

Randy Ewell
Senior Financial Officer, The World Bank

MODERATORS

Alex Caridia
Managing Director, Global Head of Public Sector Markets, RBC Debt Capital Markets

Jigme Shingsar
Managing Director, RBC Debt Capital Markets

SSA KEY THEMES

1. **Funding Programs Normalized with Increased Private Placement Activity:** SSA Funding requirements continue to normalize from 2020 peaks as the demand for COVID-related funding eased. At the same time, they faced more challenging conditions given the volatile market backdrop amid series of economic data releases and central bank rate hikes. Attractive funding conditions in the EUR market through most of the year took the pressure off key markets such as USD. Most issuers saw an uptick in private placement activity – much of it driven by interest in ESG themed issuance.

2. **Currency Selection, Market Volatility and Investor Demand:** Navigating a volatile market backdrop in 2022, SSA issuers tended to rely on their home currencies for at least 50% of their funding. While currency diversification remains a common goal, the final currency mix of SSA issuers' funding programmes were ultimately determined by investor demand as well as cost of funds. In addition, more challenging execution conditions and timing constraints around central bank events and economic data releases made for narrower and more crowded issuance windows. Issuers generally expect EUR to continue to offer attractive opportunities in 2023 but also expressed interest in maintaining a presence in USD as well as other currencies such as AUD, CAD, GBP and NOK.

3. **ESG Framework Standardization:** 2022 marked a successful year in thematic bond supply with SSA issuers diverging from the traditional Green projects to a wider range of themes such as gender, biodiversity, blue, and health. SSA issuers further embedded ESG initiatives to areas beyond bond origination by increasing their ESG offerings to their own customers while incorporating a more systematic approach on data and reporting transparency. Market participants noted that ESG investors continue to grow in sophistication as is reflected in their ability to absorb data usability and other disclosure.

4. **Maple SSA Issuance Moderated in 2022:** Maple issuances totaled C$6 billion this year compared to the C$10 billion seen in 2021, however the breadth of ESG issuance has increased with 7 out of 8 offerings this year being a theme bond. Despite a strong desire on the part of SSA borrowers to access the CAD market, higher funding costs relative to other currencies and the comparatively short issuance windows this year resulted in lower CAD supply in 2022. Market participants remain optimistic that 2023 will offer more stable issuance windows, a broader selection of maturities, and continued growth of the investor base in CAD.

FUNDING PROGRAMS

Jigme Shingsar (RBC): Let's start with providing a quick overview of your funding program for this year. Did your funding program change? Are there any developments that you'd like to highlight or talk about? I'll start with Zauresh since your program fluctuated a little bit.

Zauresh Kezheneva (IFC): Happy to start. Our fiscal year runs from July to June. Right now, we're in the second quarter of our 2023 fiscal year. The plan for this fiscal year is to raise about USD12 billion of medium and long-term funding, and it does not include our issuances under the discount note program, which can be kept up to USD5 billion outstanding at any point of time. There have been some changes in the size of the funding program. In fiscal year 2022, we were at the lower end of the funding range, as we had more demand for shorter term products on our lending side so our funding program reflected that. Our issuance of discount notes grew last year, whereas medium and long-term funding was calibrated to our lending needs. This year, we continue to evaluate our loan disbursement needs, and expect the funding program size to be higher than last year's. We've done USD 7 billion out of that program so far, and we'll continue to calibrate it later in 2023.

> In fiscal year 2022, we were at the lower end of the funding range, as we had more demand for shorter term products on our lending side so our funding program reflected that.
>
> *Zauresh Kezheneva, IFC*

Anthony Ostrea (ADB): We have a calendar year program. We're practically done for 2022 since we have raised essentially over USD35 billion this year. That's pretty similar to the size we raised last year, which largely resulted by the bank ramping its support for member countries due to COVID. The execution of the 2022 program was influenced by a number of factors including heightened volatility in the markets, what seemed like less straightforward issuance windows, and our desire to keep to our goal of having the average maturity of borrowings between 4.5 and 5 years. Given the aforementioned items, we strategically employed 3 dual tranche USD issuances, which allowed us to keep our outings to a minimum while providing reasonable size in total. The favorable USD EUR basis allowed us to issue in 10 and 15 year EUR market, which enabled a barbell approach in terms of allowing us to access the shorter end while keeping to the target average maturity. As far as composition of borrowings, there were no major surprises this year. We were able to fund about USD19.75 billion in the USD market which is on par with the percentage of total funding in previous years. Opportunistic financing in other markets including CAD was quite substantial as well, with volume eclipsing funding in 2021 in multiple markets. Next year, the program will probably be slightly less than this year's, but still quite substantial – most likely with a three handle still on it.

Jorge Grasa (EIB): Our initial funding target of EUR45 billion for 2022 was confirmed and achieved. We just finished the funding program with a total issuance of around EUR44 billion, of which the remaining was some pre-funding we did at the end of 2021. There has been 86 transactions with more than 15 currencies this year. The structure of the funding has been adjusted a bit in favor of the benchmark transactions, which accounted for roughly 70% of our total issuance. The benchmark transactions have been key to manage EIB's appetite for longer duration against what has been a very volatile year in many aspects.

> The benchmark transactions have been key to manage EIB's appetite for longer duration against what has been a very volatile year in many aspects.
>
> *Jorge Grasa, EIB*

Right now, we have two core currencies EUR and USD, which continue to represent the bulk of the funding program. Our funding program this year comprised of roughly 50% EUR, and around 30% USD. Regarding all the currencies, the share has remained in line with 2021, but it's been a little bit lower than the average level we've seen from 2017 to 2019. I think that the EMTN market has presented less opportunities of issuance for names like ours in the past three years. I assume this has been mostly caused by the volatility, the pandemic, the unwinding of the QE in many geographies, and also the energy crisis.

Piet Juerging (KfW): Our funding year has been incredible, as we had a record funding volume again. In the past, we got used to doing EUR80 billion, but this year we had to fund EUR90 billion and we just recently achieved. Surprisingly those record volumes came in combination with favorable funding conditions, mainly due to the EUR being our dominant currency with a share of over 65%. In this market, KfW benefited from the widening of the bond swap spread, which led to a spread of more than 80bps at times. In the past, this had been closer to 20 or 30bps.

Likewise, we had an extremely successful year in GBP, where we increased funding from less than GBP7 billion to above GBP8 billion. From my point of view, without those issues around formation of governments, it could have been way more this year. Private placements have seen a strong increase in volume too by almost doubling from EUR6 billion to more than EUR10 billion, mainly due to a heightened demand in EUR callables. Finally, we kept our promise to issue more than EUR10 billion in green bonds.

> Private placements have seen a strong increase in volume too by almost doubling from EUR6 billion to more than EUR10 billion, mainly due to a heightened demand in EUR callables.
>
> *Piet Juerging, KfW*

Randy Ewell (The World Bank): For IBRD, we are also on a fiscal year basis which goes from July to June, so we're just approaching the middle of our year. During the pandemic years, we were certainly at the peak level for funding as our lending spiked which is the key driver of our funding program. This year we anticipate the program to be somewhere in the range of USD40 to USD50 billion. As the effects of the pandemic have moderated, we are now seeing our funding program normalize to the levels we would expect. For CAD issuance our funding this year has been a bit constrained as compared to previous years and overall funding has favored USD issuance.

We've stayed a little silent on some of the other currencies such as GBP and CAD, simply because the market dynamics weren't quite there. We tend to take an approach of issuing large liquid bonds and letting them perform. We do look forward to the New Year where we hope markets settle down as we see further redemptions so we can look to continue our trend in the CAD market. We have stayed quite active in some of our private placements in EM currencies and callable, while staying a little quieter on benchmark issuances.

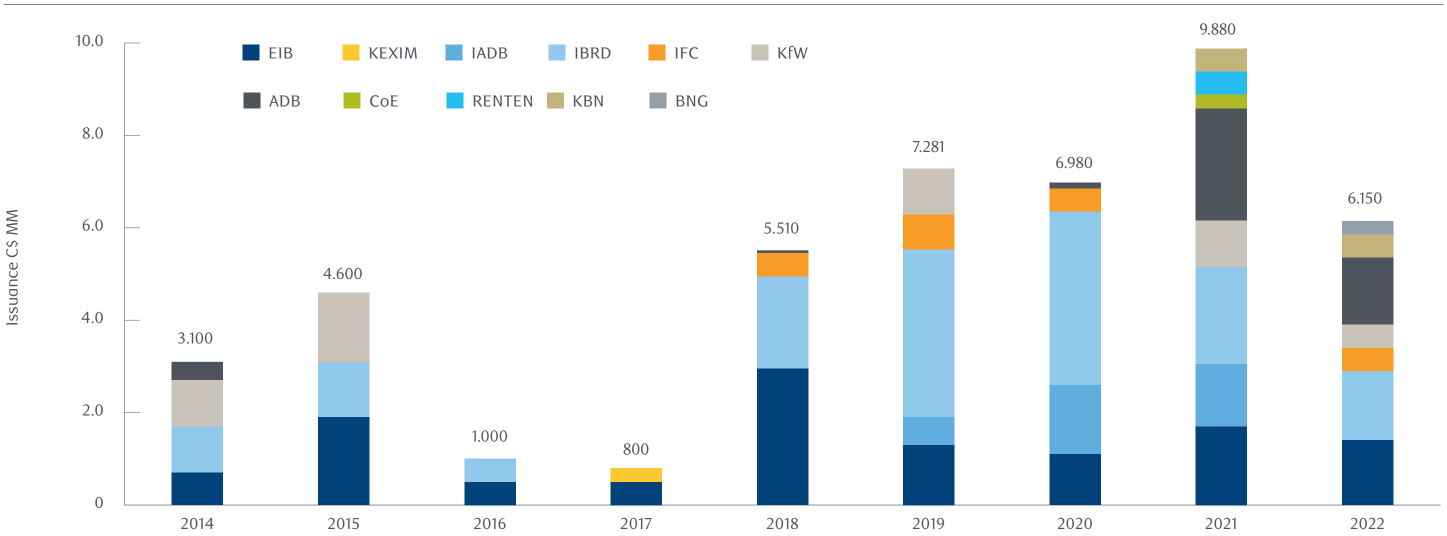
We are looking to re-enter markets in January. IDA is quite liquid at the moment so we will see how IDA funding needs play out. So far for IDA this fiscal year we have EUR2 billion.

Jigme Shingsar (RBC): David, Inter-American Development Bank's program has been fairly stable. Any comments in terms of your expectations going forward and how it went this year?

David Abensur (IADB): Inter-American Development Bank's program has been fairly stable. We did USD10.5 billion in benchmark trades this year including USD2 billion benchmark trades in SOFR. We labelled FRN benchmark trades as trades that are higher than USD1 billion in the floating rate market. GBP got a large share of it with around GBP1.6 billion. Unfortunately, we did not issue in the CAD market this year. We monitor the market on a regular basis and hope to be able to issue in CAD next year, subject to market conditions. This year we started the program with a goal of USD20 billion, but then we adjusted to a final size of USD17 billion, which have been successfully achieved. For next year, we are looking again for a size of around USD17 to 18 billion, but the number could be adjusted during the year according to the bank's cash flow needs.

> As the effects of the pandemic have moderated, we are now seeing our funding program normalize to the levels we would expect.
>
> *Randy Ewell, The World Bank*

ANNUAL MAPLE ISSUANCE



Source: RBC Capital Markets

CURRENCY DISTRIBUTION AND SELECTION

Jigme Shingsar (RBC): Thank you all for the quick overview. Just staying with your funding requirements, as we hit more volatile markets, I think you guys will allude to how much you do in different currencies. How do you benchmark the funding opportunity in various currencies? How does your home currency impact what you end up issuing when everything's going well finally? I'm curious as to how someone with a large funding program manages diversification versus pure cost and arbitrage. Why don't I start off with Randy just to comment on how you benchmark an opportunity in another currency?

Randy Ewell (The World Bank): It's no secret that our balance sheet is in USD floating rate so our funding curve is built around USD. That being said, investor diversification is important to the funding program of the World Bank so we look to other markets to enhance and bolster IBRD/IDA funding sources. We do have a general push for duration. This is simply because our lending goes out to 30 years on an amortizing basis so from an ALM perspective, we'd like to extend funding duration when possible and mitigate refinancing risk.

We like to be strategic rather than purely opportunistic in markets and currencies, and we like to build liquid lines and stay regular for investors in many markets. That being said, there are limitations to what we can do. On balance, we find in most years that works. What's key for us is organic demand, we don't want to be pushing out bonds where we don't see that demand. When we do get a pulse on demand and it coalesces in that region, than we push for larger, liquid issuances. That more or less tend to be the strategy. For EM/frontier currencies we're a little bit more flexible and can issue for shorter tenors.

> What's key for us is organic demand, we don't want to be pushing out bonds where we don't see that demand.
>
> *Randy Ewell, The World Bank*

Jigme Shingsar (RBC): Would you say, Randy, when you're going into the funding year, you had some sort of potential vision of where you think you'd end up funding across markets, and has that panned out this past year?

Randy Ewell (The World Bank): I hope it starts to normalize going forward. We did sit back when we had opportunities to issue in GBP and CAD last year where we didn't quite see the markets been conducive. The GBP secondary spread, for example, was pricing as much as 20 bps from secondaries and we didn't feel comfortable wedging bonds between different points on the curve and repricing the market, or do anything that could be unfavorable to the investor. We looked for opportunities to go longer if we could. Besides the widening vs secondaries, in the end, we didn't see the demand as being adequate enough to proceed. I do hope and expect this to change next year.

Jigme Shingsar (RBC): David, any comments in terms of how you guys decide which markets to access? Will you pay for diversification or is your idea to essentially maximize your USD funding and then see what you can do as close to that funding level as possible?

> We are also interested in maintaining a diverse investor base and this year we started issuing NOK settling domestically in Norway (VPS).
>
> *David Abensur, IADB*

David Abensur (IADB): Similar to the World Bank, it's not a surprise that all of our clients mainly demand loans in USD. As such, the USD is our core market. However, we do not want to raise the entire funding program in USD. Currency and investor diversification are an important part of our funding strategy. GBP, CAD, AUD, NZD are strategic markets for IADB. Unfortunately, we were unable to issue in the CAD market this year. However, we hope to print something in CAD in 2023. We are also interested in maintaining a diverse investor base and this year we started issuing NOK settling domestically in Norway (VPS). Non-USD currencies represented 20% of the IADB's 2022 funding program. As in previous years, the main volume will come from the USD fixed rate benchmark and to some extent, to the floating rate market. In addition, we also issue our first digital bonds settling through block chain.

Jigme Shingsar (RBC): Thank you. Piet you mentioned EUR has worked really well for you, but you also mentioned, the spread has become attractive for investors, which raised two questions. One is the traditional approach about seeing the cost back to your base home currency EUR. Do you also care about your spread to the Sovereigns and whether that looks too wide? So how do you put all that together in terms of what you decide as a good opportunity?

Piet Juerging (KfW): The spread to Bunds widened to levels never seen in the recent past and I'm sure that many traders thought the levels were not justified when reaching a spread of 50 or 60 bps. But they had been caught on the wrong foot when the level further widened. There's a specialness in the collateral market driving the bond swap spread. I expected it will tighten in 2023, meaning that the attractiveness of our EUR bonds will not diminish, but at least it will be less attractive. However, I'm pretty sure that this bond swap spread will stay at elevated levels going forward, at least in 2023.

Our benchmark is floating EUR at KfW. In general, we compare our deals to the one currency which offers the best funding. This has been EUR or GBP most of the time this year. However, in order to diversify and to maintain strategic presence in other markets like USD, GBP & AUD, it's always possible to pay up versus the cheapest currency. Especially it had been quite a challenging year for USD, maybe at the beginning we saw comparable conditions to the EUR but after that we had to pay up 10, 15, sometimes even 20bps. Still, we managed to issue four USD benchmarks raising USD18 billion. We are still the second biggest issuers in USD. So this just shows that there is some flexibility to maintain a strategic presence.

> In order to diversify and to maintain strategic presence in other markets like USD, GBP & AUD, it's always possible to pay up versus the cheapest currency.
>
> *Piet Juerging, KfW*

Jigme Shingsar (RBC): EIB has a strong presence in the EUR market and enjoys excellent funding levels, it must have been a challenge to maintain a presence in some of the other markets, and how did you manage that?

Jorge Grasa (EIB): We have two core currencies, which are EUR and USD. At the beginning, we don't have any specific targets per currency, whatever markets we can access, we will try to access them. Normally, the share of EUR issuance tends to be 40% to 50%, and USD is roughly between 30% and 40%. The share of the EUR has increased to 50% this year, and USD has been on the lower range around 30%. But like the other participants, we like to maintain a presence in other markets where we can.

We also had presence in GBP, although not in big volumes as in other years. We have also issued in other markets like AUD, CAD or PLN. In other EMTN markets, we have been present in more than 15 currencies and we will continue to issue in other markets.

Jigme Shingsar (RBC): So when you're benchmarking opportunity, let's say in CAD, will you have some flexibility to benchmark it versus maybe the USD curve as opposed to the EUR curve?

Jorge Grasa (EIB): Yes, what we tend to think is the currencies that are more linked to USD, for example CAD or AUD, we will benchmark them against the Bank's USD global secondary curve, while other currencies will probably be more benchmarked against the EUR curve.

Jigme Shingsar (RBC): Anthony, you've been active in a lot of currencies. I assume it's anchored to the USD curve, but must have some flexibility.

> Total transactions for the year was over 130, but the benchmark has always been versus what we can achieve in the USD market.
>
> *Anthony Ostrea, ADB*

Anthony Ostrea (ADB): We are also a USD based funder. We do benchmark other currencies versus what we can achieve in USD. This year in USD, we did just a little shy of USD20 billion in the USD benchmark space. We did quite a bit actually in opportunistic financing and in other key non-USD market such as GBP, AUD and NZD. We also had two trades in CAD this year. In private placements, we were able to issue in about 17 currencies this year. Total transactions for the year was over 130, but the benchmark has always been versus what we can achieve in the USD market.

Now, how we fine tune that over the year is we go through the year and figure out exactly how the markets are and where we can fund. We typically don't like to overload being in the USD market, but with a USD35 billion program, issuing what we did in USD was probably a necessity for us this year, and in recent years as well.

Jigme Shingsar (RBC): Zauresh you've always had a very stable funding program. You haven't had to do a lot of benchmark issuance in your home currency. If anything, sometimes that's probably the most expensive funding you do. How do you decide and value that? How does it all fit together in terms of how you look at other opportunities in CAD? You were recently active in GBP and always active in AUD for example.

> Issuances in local currencies are used for lending to IFC's clients and help to promote the development of local capital markets.
>
> *Zauresh Kezheneva, IFC*

Zauresh Kezheneva (IFC): Similarly, we also have a USD based balance sheet. The USD curve is the primary curve against which we benchmark. We also established some presence and focus on certain parts of the curve in different markets over the years. For instance, AUD is a very important market for us, especially when we seek an attractive cost of funding relative to USD. For instance, this year to date, more than 20% of our funding volume has come from the AUD market.

USD is traditionally one of the most expensive markets for us. The idea here is to be strategic and to also have a forward-thinking approach. As you may know, the capital increase that the World

Bank Group received in 2018 was based on commitments from each institution within the group. For IFC specifically, there is a commitment to double our investment portfolio by 2030. So, we aim to maintain our presence in diverse markets and to position ourselves for potential growth in the future. I would say USD does stay the key market for us. On average, it's between 40% and 50% of funding volume and everything else we fund in different currencies like GBP, NZD, AUD, CAD, SEK or NOK.

We are also very active in different EM market currencies. They account for a smaller portion of our funding but are very important from a strategic standpoint, as issuances in local currencies are used for lending to IFC's clients and help to promote the development of local capital markets.

ESG PROGRAM, LEGISLATION & REPORTING

Jigme Shingsar (RBC): We'll move into the ESG section, and please feel free to jump in when someone's made a point that you either agree with or have a different view on. ESG obviously dominates a lot of the headlines not just in terms of the SSA bond issuance, but also in a lot of the announcements and articles we see from your institutions, there's a lot of focus on climate and just ESG in general. Why don't we start off with EIB? I know Aldo has been at the forefront of the development of this market and a great person to kick us off here.

How does this continuing drive around climate awareness affect your funding program? I know you already have a long history in this, but is there any changes there? Then there's a follow on, when we talk about ESG, a lot of the focus has been on the E part of it, and I think more on the S now, and then perhaps G gets incorporated in there somewhere. Any comments on what you've seen so far and where do you see things going?

Aldo Romani (EIB): First of all, let me start by saying that in 2022 ~EUR20 billion equivalent, or 45% of EIB's total funding program were issued in the format of Climate and Sustainability Awareness Bonds (CABs and SABs). It is a remarkable enlargement from the 8% that we had four years ago. This development is driven essentially by the link that we established in 2018 between the allocations of these bonds and the evolving EU legislation on sustainable finance, notably in terms of a gradual alignment of the CAB/SAB allocations with the EU taxonomy that is in the making.

In terms of composition, two thirds of our sustainability funding last year - covering around one third of total disbursements - were in CAB-format, and were therefore allocated to lending activities contributing substantially to climate change mitigation. This highlights the strong engagement of the Bank in this area.

What characterizes our approach is absolute consistency through time, in the first place in the area of clean energy, which has been an operational priority for the EIB since 2006. Already in 2007, the first Climate Awareness Bond promised accountability on disbursements in renewable energy and energy efficiency based on a precise definition of the eligible projects. This accountability has meanwhile been extended to low-carbon transport and technologies.

Importantly, in the past, eligibility criteria were set only by the EIB; now they are externalized and more comparable: since January 2022, the economic activities with substantial contribution to climate change mitigation have been classified by EU law. Investors can monitor the CABs' convergence process in a fully transparent way via the comparisons that we publish in our CAB Frameworks, with the reliability provided by KPMG's reasonable assurance in accordance with ISAE 3000.

Investors do appreciate this strategy and the factual evidence we provide, including areas not yet covered by the Taxonomy, where our engineers have already started to apply their expertise in line with the logic and structure of the EU Taxonomy. In this way, Sustainability Awareness Bonds can cover areas beyond climate change mitigation, using a coherent approach in relevant fields of EIB's "green" and "social" engagement granting access to water, education, health and housing.

I would say that the main feature that has built our credibility in this area is the willingness from the very start to create transparency and accountability on EIB's gradual alignment process with the objective screening criteria that are being put in place by the EU. It's a discovery process that builds on a triangulation between funding, project evaluation and external audit.

Based on the audited growth of the disbursements contributing substantially to EU sustainability objectives and notably climate change mitigation, sustainability funding has grown to such an extent that the Bank has decided to mainstream the bulk of CAB/SAB issuance into its benchmark funding programs.

Jigme Shingsar (RBC): Zauresh, you've obviously been focused on ESG for quite a long time now. Institutionally, I know that you're very active in green and now looking at other aspects of the ESG. Any comments on what you're up to? Any new developments there? Particularly with regard to the S and G aspect of ESG?

Zauresh Kezheneva (IFC): A new development we can highlight is the update of IFC's green bond framework to include biodiversity and blue economy projects, which have both garnered a lot of attention in recent years. Earlier this year, IFC published Guidelines for Blue Finance which were developed to provide guidance to the market on the identification and selection of blue economy projects in a way that is consistent with the Green Bond and Loan Principles. We have since adopted these guidelines and incorporated them into our own green bond framework.

At IFC, we have two thematic bond labels, namely green and social bonds. Sustainability is at the core of IFC's DNA, as every project we finance has to comply with our Sustainability Framework. However, we specifically focus on green and social themes to cater to investors who seek to make an environmental or social impact alongside a financial return. Projects financed by these bonds go through additional selection, filtering, and reporting.

We also started thinking about how to apply ESG aspects beyond traditional areas as an issuer, which led to incorporating ESG measures into the management of our liquid assets. This process includes negative screening for certain industries and referencing ESG ratings where relevant.

Jigme Shingsar (RBC): Piet, obviously green and climate bonds have been a big part of most headlines. Is there anything new there? You're also the only state agency, the only MDB on this panel. Just looking at the headlines, obviously there's some pressure in terms of energy and things in Germany. Does that impact how you do things going forward, or are you able to manage in the context of your mandate right now?

A major internal sustainable finance project called Transform will further develop KfW towards a transformative promotional bank in order to improve economic, ecological and social living conditions worldwide.

Piet Juerging, KfW

Piet Juerging (KfW): Those are two different topics. Because of the war in Ukraine, we are doing some mandated business for the Federal Republic of Germany. Those mandated transactions are in the area of energy security and the gas price cap. It is on our balance sheet, but it will mainly be financed via the Federal Republic of Germany. Since October we are allowed to make use of the Economic Stabilization Funds to receive funds from the government. We already made use of this Stabilization Funds during the COVID crisis.

What's new with KfW is currently we are realizing a major internal sustainable finance project called Transform, which will further develop KfW towards a transformative promotional bank in order to improve economic, ecological and social living conditions worldwide. Also, to meet the 1.5 degree Paris Climate Agreement. Likewise, in this process, KfW implemented a new group wide IT system to gather economic, social, and ecological impacts data. This increases transparency in our financing activities throughout the entire group. Ultimately, this system should make it possible to provide impact data of every loan handed out at KfW. Potentially, this could be the preparation work to issue even social bonds in the future and not just green bonds. However, we will still stick to our green bond framework for next year and we would like to issue at least USD10 billion in green bonds in 2023.

Jigme Shingsar (RBC): Randy, any comments in terms of what's changed on your funding program? Any new themes that the investors can look forward to?

Every project that gets approved goes to a very strong climate lens. Over 90% of our projects had some additive with some climate component.

Randy Ewell, The World Bank

Randy Ewell (The World Bank): It's probably no secret that we've taken more of a holistic approach. Even though we're one of the earlier pioneers in the green bond, and are part of that format and its growth, we realized that ultimately, we had to come to terms with ourselves that we are first and foremost a social bank. We had to pivot and tell the larger story of the World Bank. Even so, we continue to issue green bonds in a segregated portfolio that are also ring-fenced with proceeds allocated to fund pre-selected green projects. But it's fair to say that we have more green projects than we have green bonds to allocate to them, and we tend to issue green bonds in private placement format based of reverse inquiry. As a percentage of our annual funding program, about 1% to 2% of funding are green bonds dedicated to fund green projects. The remainder of our issuances are sustainability bonds or what we call Sustainable Development Bonds. We have an impact report that we publish every year which goes through World Bank projects where we've taken a holistic approach. This approach always applies climate considerations and funding in nearly everything project do. In terms of impact, it's also important to note that the World Bank is much more than a lender of funds – we are a knowledge bank with deployable expertise in projects, so our lending goes with a technical package depending on what it's lending into.

Every project that gets approved goes to a very strong climate lens. Over 90% of our projects had some additive with some climate component. A third of the money from an issuance goes towards something that's related to climate. Every project, whether it's a school or a hospital, always has climate related financing.

We also work to stay innovative in other areas. You may have heard something about an IBRD Rhino bond that was done to mobilize private funding to help with funding of wildlife parks in South Africa, designed to support the growth of the Black Rhino population. It took a little bit of time to put together, but those are sorts of things that we like to do where we can help mobilize private money to help fund worthy public concerns. This bond was set up so that coupon payments were provided to fund the park as part of a grant. It was structured like a zero-coupon bond with a kicker towards the end and rewarded investors in connection with the growth of the Rhino population. Those are the sorts of things that we do in the biodiversity realm. We are at the moment where sometimes we will label bonds to highlight some of the projects that the World Bank is focused on, sometimes it comes with examples of what those projects are.

Jigme Shingsar (RBC): David, you have also moved towards a sustainable bond format as well as having EYE (Education, Youth, and Employment) Bond. Do you see any new developments there, different kinds of demand that you're seeing, or comments on what you've done differently this year?

David Abensur (IADB): In 2014 we started our thematic bonds with the EYE Bond, which is attached to loans focused on education, youth and employment. In 2019, we started doing Sustainable Development Bonds (SDBs). Our approach is that all IADB's loans are aligned to the sustainable development goals. Just to give you a sense of magnitude, this year, we printed around USD408 million, around 2.4% of our funding program in EYE bonds because we are limited in the amount of loans that are focused on education, youth and employment. However, we did 17 SDB bonds, for USD6.6 billion which is around 39% of our funding programs. Combined, both programs represent around 41% of our total funding volume. In terms of new development, we are working on looking to publish a report for the SDB bonds during next year. This report will be in addition to what the bank already publishes (e.g. Development Effectiveness Overview, Corporate Sustainability Report).

Jigme Shingsar (RBC): Anthony, you've been doing sustainable and then you've obviously made a splash with the issuance on gender. Where do you see your program going on that front as far as ESG themed issuance goes?

> The thematic approach, rather than the portfolio approach, provides a good balance of responding to specific investor demand to be associated with specific themes that ADB is involved, while highlighting specific projects that ADB is funding.
>
> *Anthony Ostrea, ADB*

Anthony Ostrea (ADB): We regard ourselves really as an ESG institution, ESG is in our DNA first and foremost. In our long term strategy - Strategy 2030, the priorities map out to the SDGs. We have two areas of ESG issuance, the first being Green Bonds, the framework of which was updated in 2021 to include Blue Bonds and the second being thematic issuances, which include Education, Gender, Health, and Water.

On these thematic bonds, they are basically investor driven. It's a different approach where we feel that the thematic approach, rather than the portfolio approach, provides a good balance of responding to specific investor demand to be associated with specific themes that ADB is involved, while highlighting specific projects that ADB is funding. We've been actually pretty successful in terms of thematic issuances this year. Traditionally we would issue most thematic bonds in private placement format, but starting a couple years ago we started branching out and we've done that in public format in non USD market. We've issued thematic bonds in a number of currencies including AUD and NZD. In CAD, these have been gender bonds. It's been a banner year for us in terms of thematic issuances. As far as new themes, we always look at our portfolio to see whether or not we have the assets ready to accommodate additional themes, which we can highlight to investors.

Jigme Shingsar (RBC): Why don't we go back to the EIB team? I have a two part question. One is we've heard from some MDBs that they have been able to essentially label most of the program and all benchmark issuances as sustainable to some degree. Is that something you've considered? And secondly, when you began this, there was a lot more reliance on third party opinions, and investors didn't necessarily have the infrastructure to deep dive into some of what they were investing in. We've noticed that among the investors, there's been a lot more infrastructure built up to be able to analyze everything on their own terms. Any comments in terms of how you see that developing and in terms of how sophisticated investors have become in this regard, and what sort of questions are they asking?

Aldo Romani (EIB): Your second point explains EIB's prudence on holistic labelling at this stage and I'll address it first. Let me clarify core ideas that are important not only from an EU perspective but also in the broader international context.

Investors are indeed becoming increasingly attentive and demanding because the overall regulatory and supervisory framework in Europe is evolving rapidly towards a more factual and objective clarification, as to where the moneys are presently going and where they should be going in the future. This process aims to contain nominalism and eye-catching marketing that cannot be substantiated via auditable evidence. It does so by creating the conditions for fairer competition in the market as well as more effective collection of information along the investment chain. Investors are being empowered to become a catalyst of due diligence and assessment of sustainability.

A few years ago, based on lack of clarity on what constitutes green finance – a reflection of lack of clarity in the real economy - European Union institutions concluded that a set of core definitions and technical screening criteria would be key to promoting the efficiency of capital allocation to sustainable economic activities. This would strengthen the internal market and provide a common reference across investors and end users of capital in the economy. By asking investors to report on the sustainability content of their portfolios, they would inevitably become a key driver of clarification. This is the framework that has been put in place.

> ESG framework should be living documents, they should not be cemented, but rather adjusted as more knowledge is gained and disseminated throughout the market.
>
> *Zauresh Kezheneva, IFC*

Implementation is underway in a stepwise fashion. In 2020, the European co-legislators adopted a so-called taxonomy regulation establishing the principles for this approach, initially with a focus on economic activities that contribute substantially to environmental sustainability objectives. These activities are therefore also the focus of CABs and SABs. The European Commission is now working on the classification details, and a first taxonomy for climate action entered into force in January 2022. A second wave of criteria that will cover other areas of environmental protection is expected to be adopted in 2023. To complete the picture, the EU Platform on Sustainable Finance, EUPSF, which gathers the inputs of a large group of international experts and stakeholders, has already proposed a taxonomy extension to include other types of sustainable economic activities. These are for example "amber" activities that do not contribute substantially but also cause no significant harm to sustainability objectives, or activities that cause harm at present but can be "corrected" to no-significant harm via adequate investments. An extension to social objectives has equally been proposed.

The bottom line is that, from a European perspective, clarification and classification are part of a dynamic, step-by-step discovery process that needs to take place on the basis of objective criteria rather than in an auto-referential manner, as so far the case. It therefore requires time to produce solid results. Green bonds are just a litmus test for the broader application of this principle. In the Climate Bank Roadmap's five-year operational plan, EIB has committed to a) aligning its tracking methodology for green finance with the framework established by the taxonomy regulation as it evolves over time; and, b) to reflect such alignment to capital markets via progressive extension of CAB/SAB eligibilities and gradual alignment of CABs/SABs with the proposed EU Green Bond Standard (EUGBS). It is a voluntary commitment, as the EIB is not subject per se to the regulatory framework.

The EUGBS requires full alignment of the use of proceeds with the EU taxonomy. The required information is only partially available at this point, notably in the fields of "do-no-significant-harm" and "minimum safeguards", which the taxonomy considers in addition to "substantial contribution". We have therefore highlighted to investors and regulators alike that, at this stage, the EUGBS may only be used as a touchstone. The core objective is the clarification of where issuers stand, where they want to go, and how they intend to get there. If non-financial disclosures are then properly set up – i.e. in a way the market can use, investors will be able to monitor how things are evolving in reality, helping to steer the process via efficient pricing of green finance.

The new criteria are indeed redefining the landscape and it is clear that this discovery process is testing a number of claims that have been made in the past with regard to what is green and what is sustainable. This doesn't mean there was greenwashing before, it simply means that a more orderly debate on sustainability is underway, in which verifiable and comparable evidence becomes a condition for labelling. This approach has become relevant not only for our dialogue with investors subject to EU regulations, but also beyond European borders, where EU legislation is becoming a test case and a benchmark. We have been receiving an increasing number of calls from international investors - as well as from national market supervisory authorities - that ask us regularly and in detail about our progress in the operationalization.

> If non-financial disclosures are then properly set up – i.e. in a way the market can use, investors will be able to monitor how things are evolving in reality, helping to steer the process via efficient pricing of green finance.
>
> *Aldo Romani,EIB*

Jigme Shingsar (RBC): Zauresh, all of the pioneers or early issuers in the ESG space have been spending a lot of time on reporting and so on. As investors who have grown in sophistication, I sense that maybe we've hit peak volume in terms of information and disclosure. Are you seeing any changes in terms of what they're looking for?

Zauresh Kezheneva (IFC): I basically agree with Aldo on standardization. I wouldn't say that we've seen many differing questions; there are many similar questions but I think with more clarity and standardization introduced, investors' inquiries are converging closer in terms of topics that they're interested in.

Jigme Shingsar (RBC): Do you think frameworks are something that are flexible enough or does there need to be things coming out of the frameworks that need to be adjusted? Therefore, do people need to update their frameworks regularly?

Zauresh Kezheneva (IFC): I think frameworks need to be balanced and should consider inputs from both issuers and investors. They should be living documents, they should not be cemented, but rather adjusted as more knowledge is gained and disseminated throughout the market.

Aldo Romani (EIB): To add on a point, evolving legislation on sustainable finance is putting the green and sustainability bond frameworks in a new perspective that is instrumental also for the issuers' broader strive for compliance with non-financial disclosure requirements. In the transition to the new regulatory set-up, issuers are inevitably facing uncertainty not only as to the comparison between new and past classification criteria, but also with regard to the availability of information on both stocks and flows of their overall economic activities, with discrepancies across different categories of investment counterparties. At the same time, there may be questions on the suitability of some reporting indicators established by law to fully reflect the sustainability of investment portfolios. An example is the so called "green asset ratio" ("GAR"), which does not consider relevant categories of lending and investment activities.

At the EIB, we are currently assessing the best way to address these disclosures going forward, notably with regard to the taxonomy-based classification of EIB's assets. This cannot be only from the point of view of best banking practices, which typically consider only regulatory requirements (notably when the EIB is formally out of scope), it also needs to live up to stakeholders' expectations in the most effective way, possibly via additional voluntary reporting - exceeding the regulatory requirements wherever necessary to reflect well the sustainability of EIB's balance sheet.

In the present and still uncertain phase of assessment, the CAB/SAB Frameworks assume a new and very significant value in the flow of information that goes from the Bank to its stakeholders. Developed organically over time, such frameworks provide a clear and already established perimeter for the dialogue, permitting focus on core aspects and their progress through time. In addition, the reliability provided by the auditors' reasonable assurance secures a degree of factuality that is unique among the reports otherwise issued by the Bank in this space – which are audited with limited assurance. In a nutshell, the CAB/SAB Frameworks have turned into an effective instrument for the management of stakeholders' expectations, and the build-up of their constructive understanding of the alignment process, while EIB's broader work on non-financial disclosures is still underway.

A secondary, but equally important potential use of the experience gained with the CAB/SAB frameworks, lies in the dialogue with EIB's clients on the lending side. The capacity of mediating dynamically between the regulatory requirements and the borrowers' actual capacity to deliver on those requirements, gauging gaps and structuring credible and monitorable actions within a predictable timeline, and using the logic and principles of the Taxonomy to make these actions intelligible to markets, supervisors and policymakers via a common language, are becoming increasingly important for all parties. Again, this is not only true within the borders of the EU, and in fact may even be more relevant for the provision of technical assistance beyond European borders. In these countries, EIB can provide unique intelligence on how to develop interoperability between European standards and local circumstances in cooperation with other development financial institutions, thereby facilitating European investments.

Jigme Shingsar (RBC): But would you say, that as investors hire more specialists and develop expertise, they will start going beyond seeking you as the seal of approval, but also asking you for more to substantiate about their own concerns?

Aldo Romani (EIB): The aim of the EU regulatory framework is to facilitate sustainable investment via the definition of core criteria that focus on essential aspects of sustainability and are easy to use and to verify. This is ground-work that both establishes core comparability for the market at large and paves the way for further analyses of additional aspects relevant to specific investor constituencies. So, one thing does not exclude the other; on the contrary, it makes it more effective.

Now, European investors are required to produce evidence for the statements that they make on the investment products they offer to their clients. Even in Europe, there are a number of usability issues, inter alia because the various parts of the regulatory framework are not yet perfectly matched with each other. Exactly in this area, the role of an institution like the EIB is coming forward, because we have to operationalize on the ground, ascertain pragmatically the reality of our interlocutors on the lending side, organize available information in conformity with the logic and principles of the Taxonomy, and report thereon to the capital markets.

This is, by the way, an incremental process that is also supposed to provide systematic and trustworthy feedback to legislators and policy makers regarding the usability of the criteria that are being established. The law contemplates regular reviews and improvements of the taxonomy and the detailed assessment of usability is a core task of the upcoming second round of the EU Platform on Sustainable Finance. If it is not possible for committed institutions like ours or for others that are already advanced in this process to operationalize things, then something needs to change also on the side of the criteria themselves.

From this point of view, I think that the role of the Bank is developing into new fruitful directions. The provision of advisory and technical assistance needs to be articulated in a coherent and standardized fashion on behalf of all stakeholders: capital market investors, lenders and borrowers - within and outside the European Union, other multilateral institutions, and official authorities in charge of international cooperation. A revolutionary process is underway.

EIB's issuance and the associated fact-finding are a litmus test for this whole process and have already produced a number of acknowledgements. For example, we have been able to clarify in an unequivocal way that the technical screening criteria for substantial contribution used for CAB-allocations in 2020 were only partially aligned with the criteria proposed by the European Commission's technical expert group ("TEG") in the same year. We could thus close the gap in 2021 and further align the criteria with those of the climate taxonomy of January 2022 already in the course of last year. Our 2021 CAB-Framework, which is about to be published – with some delay due to the heavy analysis and assurance work involved – also compares in detail EIB's Environmental and Social Standards with the DNSH- and MS-provisions of the taxonomy regulation, yet another milestone on the path to gradual alignment with the EU Green Bond Standard. These inputs are being offered for consideration to the other business lines of the Bank and are equally appreciated by an increasing number of official authorities around the world.

Jigme Shingsar (RBC): With more headlines around energy pricing and shortages, are you getting more questions around Germany's overall approach? How are you managing that?

Piet Juerging (KfW): Our government announced a special fund of EUR200 billion in order to manage the energy crisis and to subsidize private households. KfW will take a role in this too. This doesn't mean that there are any additional funding needs for KfW. We are allowed to make use of the economic stabilization fund. With this fund, we are able to draw loans from the German government since October. We have done it already in small amounts, and we made use of this fund in 2020 and 2021 due to the COVID crisis. Essentially, the energy crisis is a different topic, but nothing new for KfW. It just underlines the strong relationship between the Federal Republic of Germany and KfW.

Jigme Shingsar (RBC): Randy, you focus a lot on reporting. Are investors asking for different things now than they used to? Is the focus more on the type of disclosure as opposed to just more disclosure?

Randy Ewell (The World Bank): I'm not the person who deals directly with that, but what I can say is we've always shifted to sustainability, we've always essentially kept it an open discussion. I think Zauresh touched on it. We recognize that these considerations are still largely fluid and the standards and metrics are fleshing themselves out between issuers and investors. Discussing what's happening in Europe, we are hearing our investors and understanding what they want to see. It's an ongoing discussion that we stay very open to. Internally, I think I mentioned the World Bank's project approval process as well as the project cycles. We have audit teams that go through what's being done, what's agreed to how it's performing though our project cycle. We collect a lot of data internally and are working on how to best coalesce and present the data in meaningful and useful ways.

Aldo Romani (EIB): In line with the logic of the new regulatory framework, we are trying to direct investors' attention to what is most relevant. As highlighted at length in the past years, the market, at large, will not be able to work with too much and too complex information on sustainability. It has therefore become increasingly important to convince our project experts that a distinction must be made between the essential conditions for eligibility and all the other output indicators that describe the project in a more extensive manner. Lending activities must be firstly and foremostly be assigned to a primary sustainability objective with clear and comparable information on why they contribute substantially to that objective. The rest is ancillary information completing the description of the underlying projects.

> A distinction must be made between the essential conditions for eligibility and all the other output indicators that describe the project in a more extensive manner.
>
> *Aldo Romani, EIB*

In the upcoming 2021 CAB Framework, we have thus started separating the two sets of information in the attempt to highlight what is essential from a substantial contribution perspective. This approach is also key to standardization, which in turn is instrumental for the proper functioning of the market. In the end, it is a coherent application of the use-of-proceeds green bond approach, which concentrates on accountability of what you claim to already do well to establish a monitorable keyboard for your further action over time. This approach puts core aspects in front for everybody's own assessment. In the more holistic ESG approach, you inevitably need the authority of a third party – at the cost of comparability - to verify ESG relevancy based on a much broader set of parameters.

Jigme Shingsar (RBC): Anthony, you mentioned some theme bonds, when do you find that you have to change your reporting or impact reporting? Essentially your system is set up, it's just a different theme – does it create new challenges or new questions? Or is it fairly easy to meet the disclosure that they're looking for?

Anthony Ostrea (ADB): I talked earlier about how we have a two-prong approach. We have our green and blue bond framework, and then we have our thematic bonds, which are health, gender, water, and education. As you said, it's a continuous process of trying to add new themes now. We get questions from investors during meetings on each particular theme since at least this year, we've predominantly been issuing in thematic format, primarily gender bonds and health bonds. The one thing that I did want to highlight during this call is although these thematic issuances may not have the framework such as our green and blue bond, when we set up these themes, they go through the same rigor we did when we did set up the green bond framework.

Initially, it goes through the process of meeting with specialists where we look at our projects and we figure out if a project is appropriate for a particular theme. There is also tracking of these projects, reporting in the form of a newsletter that we put out every year for all our themes. There have been questions from investors during our meetings just drilling down on these particular themes. We have been scheduling calls with investors as well as our sector specialists to illuminate some of the data. It's a well-oiled process where when we come up with a new theme, it goes through the same rigor as what we've done in prior themes.

Jigme Shingsar (RBC): Thank you, David. Any new changes you want to add? When you go down this road, do you sometimes bring in the sector specialist to answer questions?

David Abensur (IADB): From our side, it's a similar story. There is a lot of information, and everything is published on our website. The main problem for investors is trying to figure out the data, too much data becomes cumbersome. We are aiming to present our available data in a more friendly way for SDB in a new report that we should be releasing during late 2023/early 2024.

> The main problem for investors is trying to figure out the data, too much data becomes cumbersome.
>
> *David Abensur, IADB*

Jigme Shingsar (RBC): Before I end the ESG section, anybody else have any other comments?

Aldo Romani (EIB): I would like to underline that in my view it is the responsibility of a funding officer or product developer on the funding side to spearhead the required clarification and simplification process. I see this very much as a business opportunity as well, also for the intermediaries. In this respect, RBC has been such a good partner to us, showing full understanding and providing us with substantial support in disseminating core information in different parts of the world. A key element of EIB's growing recognition beyond the borders of the European Union has been the consistency with which we have jointly and timely raised awareness about the investor value of this assumption of responsibility on the funding side. The AUD and the CAD markets have been exemplary in this respect.

As described earlier, the material cascading effects of this capital market centered approach on the lending side of the Bank are becoming increasingly apparent. The green, social and sustainability bond market segment is delivering results and will increasingly do so thanks to the injection of additional transparency, and comparability promoted by sustainable finance legislation and its operationalization on the ground. This will benefit issuers, investors, intermediaries and end users of the funds at the service of facts rather than words in the pursuit of sustainable development. In this regard, it is at this stage essential to explain that the upcoming EU regulation on European Green Bonds is establishing a touchstone against which to improve the capacity of this market segment to prove the sustainability claims in the real economy over time. This is the condition for the effective use of the EU Green Bond Standard as benchmark for the gradual improvement of the status quo.

Randy Ewell (The World Bank): Just to add to that, I think for us, given our business and who we lend into, I have a lot of sympathy for the EU approach. It's important that some of the lending we do will be benefiting a bit of Transition bonds from one to the other. I think what's important to us is that what's happening is trending and moving the world in the right way. What we want to do is pull investors, issuers and others into the community and not disincentive participation. Some of the projects we may lend into in South Asia, for example, could have far greater global climate benefits but not qualify or classify as a green project in certain taxonomies. The trajectory is important- having this community of regulators or the community of the green bond principles or the other principles, as well as the investors agree on what sort of approach moves us all forward.

CAD FUNDING PLAN, LIQUIDITY & INVESTOR PARTICIPATION

Jigme Shingsar (RBC): Moving onto CAD, Alex, why don't you kick off with what we experienced in the CAD market this year and what we think is going on, and then we can go into some questions with some of the panelists.

Alex Caridia (RBC): In terms of CAD of the Maple market, like most other markets, we've seen lower issuance volume, totaled C$6 billion versus around C$10 billion last year. We have 8 deals YTD versus 16 deals last year. If I look at the year, most of the issuances were concentrated in January and February, and we've seen a couple of issues over the last month, but most of the year was pretty quiet, and it's been mentioned a few times by various people on this call that the arbitrage levels from CAD back to LIBOR or whatever reference rate haven't really been competitive.

Nevertheless, I think there have been a couple of good developments. One is that there's been an increase in the breadth of issuers. All participants on the call here are what I'd call the regular issuers. This year, we've seen some of the second tier names came into the market.

Another point worth highlight is that, 7 out of the 8 deals that have come to the market have been ESG, which underlines the strong demand from Canadian investors for the product. Typically we'll price an ESG deal slightly through the non-ESG deal and in the secondary market, they tend to trade even further through.

When you look at some of the domestic issues like the large ESG issuers down here, Ontario and Quebec, they trade anywhere from 3 to 5 bps through their non-green curve in the secondary market. We've also seen Government of Canada issued a C$5 billion green bond, their inaugural green bond. Canada also issued a Ukraine support bond recently.

I think in terms of spreads, like most other markets, spreads have trended wider.

> We found that the windows in CAD tend to close up pretty quickly versus other markets.
>
> *Anthony Ostrea, ADB*

Jigme Shingsar (RBC): Just continuing the theme of the last topic of ESG, there's no question there's a competitive advantage for ESG-themed issuance of any sort, and investors are really looking forward to that.

Alex Caridia (RBC): On the domestic side, investors are certainly willing to pay a little bit more for an ESG themed bond. The Canada deal came in 2bps through the curve. Most Ontario and Quebec deals priced a little bit through the curve as well. Similarly, we had a City of Toronto long dated Green Bond, which was also tighter than where they would've come in had it not been green. There are more domestic investors that have green specific or ESG-specific mandates. From a pricing perspective advantage, and also just from a book diversification perspective, we'll see more domestic uptake for ESG.

Jigme Shingsar (RBC): David, you mentioned that the very first benchmark Sustainable Development Bond IADB issued was in CAD, while you haven't been so active this past year, do you think you'll be able to come back to this market soon?

David Abensur (IADB): This ties up with the fact that we are a USD based institution. Everything gets swapped into USD. So unfortunately, we did not have the opportunity to issue CAD this year, but it is important to highlight that CAD is a strategic market for us, and we want to maintain our presence. CAD has been in the right path in past years, but unfortunately, we did not manage to issue this year. Our first SDB bond was a Canadian bond reflecting the fact that Canadian investors are very keen in bonds that have a positive impact. Last year, we issued CAD bonds on a 5-year tenor and a tap of the August 2027.

Jigme Shingsar (RBC): Anthony, you've been very active and the Gender theme has really played well for you in the CAD and other markets. Any comments in terms of how it fits into your plan? All plans are variable in this environment, but do you expect to be back in this market?

Anthony Ostrea (ADB): Short answer had been mentioned by another participant. It is a strategic market for the ADB as well. The last two years have actually been pretty good for us in CAD. Prior to last year, I think it had been a number of years since we were in the market, not for the lack of trying. Like I just mentioned earlier, we do benchmark all markets against USD. It just so happened that in prior years that cost efficiency in CAD didn't really stack up nicely versus USD. We found that the windows in CAD tend to close up pretty quickly versus other markets.

Just to give you some numbers, last year we did about C$2.35 billion across 5 and 7-year tenors. This year, the 3-year tenor has worked well for us, so we did one in January, and the second one in late August. Total fund raised this year was C$1.45 billion. Both were gender bonds. It is something that we would like to keep the momentum going into the New Year.

Jigme Shingsar (RBC): Randy, you'd like to do large liquid benchmarks, do you feel that's viable and do you expect to be back in this market?

Randy Ewell (The World Bank): Canada is our neighbor, and we have made a point of being intentional about looking for opportunities in CAD. For the past 12 years we've done large size benchmark issuances in the Canadian market, and we fully intend to continue our commitment to that strategic presence. Unfortunately, for much of this past year pricing was offside and due to market volatility demand was not stable. We are now seeing some trends in the right direction and we hope to be active in the not too distant future. The CAD investors have been great supporters of IBRD's themed sustainable development bonds.

Jigme Shingsar (RBC): Randy, could you comment on the maturity preferences and maybe your aspirations in terms of growing the curve further out?

Randy Ewell (The World Bank): We are always happy when we can achieve duration in our funding. We maintain a redemption profile that we're very mindful of and take care to equalize these funding buckets so that we're not simply funding redemptions but loans. Our projects are long dated, so we like to fund long when it works.

Jigme Shingsar (RBC): Any comments from IFC? You've been able to sort of pop up in the CAD market at least once a year.

Zauresh Kezheneva (IFC): CAD market is important to us. In the last few years on average, CAD funding represented 4% to 5% of our funding program. We have also noticed an increased interest from Canadian investors in ESG which is very heartening to see, not just specifically from investors that have green or social mandates, but from the general crowd. It feels like in the CAD space, ESG is becoming quite mainstream. In January 2022, we issued a social bond which was well received. Our presence in the CAD market corresponds well to our strategic view in terms of types of products that we are offering and in terms of investor base.

> We have also noticed an increased interest from Canadian investors in ESG which is very heartening to see, not just specifically from investors that have green or social mandates, but from the general crowd.
>
> *Zauresh Kezheneva, IFC*

Jigme Shingsar (RBC): Piet, do you expect CAD as one of the projects you'd like to see next year?

Piet Juerging (KfW): Definitely, we managed to issue in the last two years. That'll be a goal for next year again. By looking at this year, we just accomplished to issue C$500 million via conventional bond. At least we got it done to be subscribed. I'm pretty sure that especially for CAD, it will be helpful to add the green label to it to get a bigger size deal done. So, a C$1 billion green bond will be one of our goals for 2023. Unfortunately, with CAD, it's a bit more difficult, the market depth isn't there, so that 3 or 4 issuers can easily sweep into the market, which is causing a problem.

> With CAD, it's a bit more difficult, the market depth isn't there, so that 3 or 4 issuers can easily sweep into the market, which is causing a problem.
>
> *Piet Juerging, KfW*

Jigme Shingsar (RBC): Last but not least, EIB, you have the flexibility to do a lot of markets. Will you have the flexibility to come back to CAD, particularly with something that's green or sustainable?

Jorge Grasa (EIB): I hope so, like all the other participants, the CAD market is an important market for EIB. In 2022, it was the fifth ranked currency for EIB, a similar position to last year's. We really hope that we are able to do a similar successful deal next year as we did at the beginning of this year, which was C$1.4 billion. As I was pointing out, we also have to consider that we need to go a little bit longer than three years, I hope that five or seven years also opens at some point, and we can access that market.

Jigme Shingsar (RBC): One of the questions that's come up quite frankly is liquidity. Alex, just a comment on the investor base in CAD on market liquidity here, and what you see in terms of trends.

Alex Caridia (RBC): Taking a step back, if I look at public sector Canada Complex, it's probably one of the most liquid markets in the world. I'm talking specifically provincials and CMBs, where you can trade all the way out to 30 years with C$200 to C$300 million on less than 1bp bid offer. I think that doesn't hold true for the Maple market, just by the virtue of its size and the smaller issuance volume. It's fair to say that liquidity in the Maple market has improved over the last few years as issuance has started ramping up. Two or three years ago, Maple bond traded anywhere from pretty wide sort of 3 to 4, maybe even 5bps depending on the line, I think we're now looking at 2 or 3bps in terms of a typical bid offer. A Maple bond, which compared to some of the larger markets, such as USD, still seems pretty wide, but it's definitely come in a long way from where we were a few years ago.

> Maple issuers are not as liquid as some of the other CAD public sector products or some of the larger markets, but it's definitely trending the right way.
>
> *Alex Caridia, RBC*

As more domestic investors have started to re-engage in the product, a lot of them obviously got burned on the product in the past and have had long memories. We're seeing those investors re-engage and that's obviously helping liquidity. I guess in a nutshell, I'd say it's not as liquid as some of the other CAD public sector products or some of the larger markets, but it's definitely trending the right way.

Jigme Shingsar (RBC): Randy, you've got a fair amount of data given some of the very large liquid benchmarks you've done. Is there any comment in terms of any sort of changes or revolutionary interest of investor base, and whether you're getting any sort of different or specific questions around your CAD issuance around liquidity or pricing?

Randy Ewell (The World Bank): I've had some recent discussions with several CAD investors and I'm hearing that they'd appreciate high quality triple A SSA investment opportunities. There's been a fair bit of provincial issuances and other things, and the market at the moment certainly has its limitations but it seems like it's moving in the right direction.

Jigme Shingsar (RBC): Would you say in terms of the investor base then, Randy, traditionally there's obviously been a lead investor component of treasury demand. Do you see that evolving a little bit or maybe, still being important, but maybe less reliant on that as the key source of domestic demand?

Randy Ewell (The World Bank): I think we need less. It does feel like in the past year, the international investor base for CAD issuances has participated less in the CAD market. Whether that holds into next year remains to be seen. Certainly for us, we value the diversity of our investor base and like to appeal as broadly as possible. Some of the themes do get some investors involved who may not have otherwise been involved just on the margin.

Jigme Shingsar (RBC): It's interesting your comment around international investors maybe being less active. On one hand I guess there's been less issuance as well, but Alex, on the other hand, would you say in CAD we've seen more international demand but it has been the interest in CAD more broadly, rather than in SSAs, and maybe that will filter through to the SSA market over time?

Alex Caridia (RBC): I guess broadly so, I don't think it's necessarily picked up between last year and now, but generally, over the last few years we've seen an increase in international interest. I guess I've put that into a couple of different buckets. One would be the Asian real money demand, Japan in particular. There's been times where the hedge back to JPY has been very attractive and they've been very active. There's also the central bank component, which has been relatively steady, but maybe increased over the last few years as well.

Jigme Shingsar (RBC): I think many of the issuers in the SSA or the Maple space have a bigger name recognition in the international markets than the provincials. As a result we've seen decent international demand for Maples that we don't see for provincials, but obviously having a balanced investor base is key. Anthony, last year you were one of the more active issuers in CAD, and then this year you've had some very nice issuances as well. Any sort of changes in the investor base, or is it sort of fairly stable in terms of the kinds of investors buying your paper in CAD?

Anthony Ostrea (ADB): Not dramatically different – I think over from last year we've had a healthy percentage of light or dark green investors, which has probably been more or less the same. The components in terms of international versus domestic is also roughly the same. In terms of good support from bank treasuries, I echoed the comment that we would like to see more support outside the bank Treasuries, but no major changes that we've seen at least from last year.

Jigme Shingsar (RBC): Piet, any comments on your experience with the CAD market? If you were able to move to green, maybe do you expect a significantly different investor base than what you saw for your outing this year?

Piet Juerging (KfW): The experiences we made or the comparison between green and conventional bonds is that with green bond, the participation of bank treasuries is way higher. Whereas in our conventional bond, the majority has been allocated to central banks. I would go with Alex's statement that international interest is building up in the recent years. However, I would say that 2022 have been rather difficult for international investors because of increased volatility and spread movements in the market. I would say that some international investors have been reluctant to invest in CAD, as Alex mentioned the Japanese investors. From my point of view on a FX basis, it doesn't make a lot of sense right now to invest in CAD, but I'm still hopeful for January.

Jigme Shingsar (RBC): Are there any comments on CAD distribution, what you'd like to see, what you think might happen, or what you think would make a difference in terms of expanding the CAD market for you?

Jorge Grasa (EIB): I would like to see more domestic participation as my colleagues are commenting. It's very much focused on some Bank Treasuries participating there, and a few names that also are pretty keen on adding some green label. At the beginning of the year we did see a little bit participation from central bank rather than domestic accounts. Let's hope that a wider variety of domestic accounts will look again at the Maple market. It will also be good if bank treasuries can look beyond five years instead of sticking to three to five years.

Let's hope that a wider variety of domestic accounts will look again at the Maple market.

Jorge Grasa, EIB

Alex Caridia (RBC): On the bank treasury point, there have been some bank treasuries that have been trying to push (duration) out longer, but just in terms of the comment around the books, they seem to be fairly bank treasury heavy, it's also a little bit of a self-fulfilling prophesy with issuers often making a treasury order a condition of a mandate. So it's hard to argue that banks need to bring an order but actually we'd rather see other investors, right? I know that the bank treasury demand would probably be lower for sure, if that wasn't a part condition of the mandate.

Jorge Grasa (EIB): I guess that we like to build some kind of foundation in our deals and that is given by the support from the bank treasuries. And once books are open we try to grow the transactions to have other kind of investors. But I would say that bank treasuries are very helpful to be able to access this kind of market, so we don't really have anything negative to say about that. But it's true that it would also be helpful that all the domestic participants also support this market.

Jigme Shingsar (RBC): Zauresh, I know CAD is something that you always keep an eye on. In particular, do you feel like there's any sort of prospects to reduce our reliance on certain parts of the demand that we've relied on as essentially at least in the building block? Are you having more investor engagement away from bank treasuries, for example?

Zauresh Kezheneva (IFC): We do have a regular investor engagement with general investors. I guess on my Christmas wish list, I would want more of every kind of demand: more bank treasuries, more central bank demand and more demand for green or social bonds from asset managers. As of now, we don't have enough data to draw specific trends. At least in the last issues, we saw more Canadian investor participation and less of central banks, which was the opposite in prior years. It would be great to see more depth and longer issuance windows, and may the basis be always in our favor!

Jigme Shingsar (RBC): To the people with some of the larger programs, I would suggest that perhaps making more of a commitment to the CAD market in terms of maintaining a presence, and mimicking to the extent possible, some of the domestic issuers, may help generate some of this liquidity, which could reduce the premium versus a CMB. That's something I would throw out, I don't expect an answer on this panel.

Aldo Romani (EIB): As a matter of fact, in the past couple of years our sustainability funding has been able to raise the share of Canadian investors in the books quite substantially - to around 40% in the large transaction that we did at the beginning of 2021. This, combined with the strong central bank demand that we saw at the beginning of 2022, shows that indeed the CAD market can also be a source of good diversification.

Jigme Shingsar (RBC): You mentioned the SRI and the ESG premium. Do you think that's just going to persist for the time being just because there isn't enough supply?

Alex Caridia (RBC): I think so and more broadly, there's 10 provinces here, and obviously it's a big, active, liquid market, and only two of them issue in green or ESG. The largest issuer, CMB, have been working on a framework for quite some time, which is well known, but it doesn't feel like it's anytime soon. In the absence of a lot of domestic ESG supply, investors will look to some of the people on the call here, and the maple market more broadly for that. I think there'll be more demand than there is supply in our market right now as more investors come in with specific ESG mandates.

I'd see the premium in the secondary market to stay where it is going forward. So anywhere 3 to 5bps for some of the provinces. In the maple market, I'd see a similar dynamic.

Jigme Shingsar (RBC): I think we've got through the bulk of what we were looking to do. Are there any concerns or what are you thinking about for next year?

Zauresh Kezheneva (IFC): We hope to have a new calendar year with longer issuance windows and more opportunities for everyone, despite volatility. Regarding opportunities, as the year opens, we expect investor interest to put cash to work, so we will be monitoring that interest and continue our investor engagement work. We will continue diversifying our funding across different currencies and markets and thank our investors for their support.

Jigme Shingsar (RBC): So if there's a concern, it's really volatility more than anything at this point.

Anthony Ostrea (ADB): The worries for next year might be a lot similar to this year. When you look at what played this year, geopolitics was a concern, COVID hasn't gone away really, although it's getting better. Inflation, monetary policy tightening, we're hopeful some of these may abate but if it doesn't, then it might be a repeat essentially of this year where you have heightened volatility, and as aforementioned, issuance windows that are compressed or not as frequent as in past years.

This year we managed to navigate the program throughout these concerns by trying to minimize our outings in the market. For example, in USD, we did 3 dual-tranche outings. This also plays nicely into our barbell approach to calibrate our average maturity, the sweet spot being 4.5 to 5 years. So this year we were lucky to do a few of these longer tenor benchmarks including a 10 year and a 15 year EUR trade. All of these allowed us to issue in the front end, including in CAD. That's why we were able to do the two 3 year CAD deals this year. At the end of the year, our average tenor was around 5 years.

Jigme Shingsar (RBC): Thank you, EIB, any concerns? EUR swap spread compression? Any particular concerns?

Jorge Grasa (EIB): One concern is the volatility in the market that make issuance windows to remain very short. You have to be very precise on which days you want to access the market. Also, Central Banks are going to stop hiking rates at some point, or the ECB will start QT this year and the question is what the effect will be on EIB's spreads, if the energy crisis is going to be over or is going to restart again. Presumably, we will speak again in August or September about what's going to happen in winter 2023-24. I think it's going to be a little bit of remix of what we have been seeing this year.

David Abensur (IADB): We have similar concerns. During COVID, most central banks decreased rates and did quantitative easing. Now central banks are increasing rates and doing quantitative tightening simultaneously. The world is moving into one direction, there could be more potential dislocations of the financial markets, like what happened in the UK with the pension funds. In addition, if for example, the conflict in Ukraine escalates further or there is a potential surprise related to the pandemic, these events could adversely impact the financial markets.

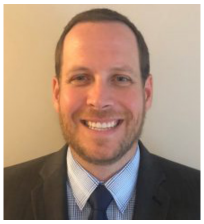
Randy Ewell (The World Bank): I think everyone has already kind of said it I mean, I think what we can all hope for a bit of stability and less volatility. There still are a lot of things out there that could sort of shake things up and hopefully we're near the terminal rate.

It does feel like things are improving but we still have the war in Ukraine and how that conflict may continue to affect the markets, but I'm hopeful. There's a lot of overlapping issues that are affecting our countries that we lend into but this is our mission. This is when the World Bank has steps forward and remains a strong partner for development. When the markets are turbulent, we remain a strong partner. We likely have a lot of work ahead of us. Wishing everyone a good holiday season and a happy new year, and we should all just hope everything goes well.

Jigme Shingsar (RBC): Seems Hope for more stable markets is the plan. From my perspective, I agree in terms of hoping for longer issuance windows. Well this brings us to the end our discussion - I appreciate everyone taking a lot of time out to do this. We will circulate the transcript as soon as possible. Thank you again for your business, your trust and for being such great partners for RBC.

Municipal Treasurers Roundtable

ISSUER REPRESENTATIVES



Matthew O'Rae
Chief Financial Officer,
Municipal Finance
Authority of BC

Heather Taylor
Chief Financial Officer
and Treasurer,
City of Toronto

Craig Dyer
Chief Financial Officer,
Region of Waterloo

Laura Mirabella
Commissioner of Finance and
Regional Treasurer,
Region of York

RBC ECONOMIST

Rachel Battaglia
Economist, RBC Economics

MODERATOR

Mansoor Khan
Director, RBC Government
Finance

MUNICIPAL TREASURERS KEY THEMES

1. **Cautious Outlook:** Municipalities are approaching the 2023 budget planning process with higher inflation, interest rates, immigration and shelter program spending top of mind. Municipalities benefited from the economic rebound in Canada but are cautious about a recessionary environment in the upcoming year, as it could lead to higher operating costs to support social services, shelter systems and public health programs which could place more burden on municipalities.

2. **Support from Federal and Provincial Levels of Government:** Canadian municipalities had a significant amount of monetary assistance from the Federal and Provincial levels of government throughout the pandemic. These COVID related funding are likely starting to dial back in the upcoming year and municipalities with large transit systems who received extra support during the pandemic are anticipated to incur higher operating costs in 2023.

3. **Transit:** Municipalities with responsibility for transit saw an increase in ridership compared to last year, however not all saw a recovery back to pre-pandemic levels due to the new hybrid work environment. Regions with stickier ridership such as students have seen more of a bounce back. In addition, the volatility in the commodities market also had an adverse impact to the cost of transit this year, with some municipalities noting each cent of fluctuation in gas prices costs the municipality thousands of dollars. Transit operators will continue to experience headwinds based on what the "future of work" will look like, as well as unpredictable gas prices.

4. **Interest Rates:** A topic affecting individuals around the globe, municipalities noted that there are a few areas affected as a result of the higher rate environment. Firstly, there have been delays or pauses in housing development within cities due to higher interest rates, which is pushing housing and rental prices up on the back of Government of Canada's target of half a million immigrants each year by 2025. Secondly, a recession will cast additional impacts on City services with higher expenses on subsidies, food banks and shelter systems, which would put pressure on municipality budget. Canadian municipalities are not permitted to budget for operating deficits and must plan to cover any unforeseen shortfalls in their operating budgets within a year.

5. **Borrowing Programs:** Canadian municipalities continue to offer investor's attractive value relative to other government credits as local governments must balance their operating budgets. There was a total of C$4.7 billion in Canadian municipal issuance in 2022, moderating from the record high of C$5.9 billion in 2021. MFABC is expected to increase their funding needs in 2023 due to refinancing after a slightly lower 2022, and Toronto having increased their borrowing from C$1 billion to C$1.2 billion last year is expected to continue issuing similar terms next year. Issuers such as Region of York who remained on the sidelines in 2022 are expected to return to the market in 2023, and Region of Waterloo who have been a consistent issuer in the space will return to the market in spring as well. Large Canadian municipal issuers are expected to continue to focus on 10-year, 20-year, and 30-year bullet maturity issuance, while smaller municipal issuers are expected to issue via 1-10 year and 1-20 year serial debenture issuance.

6. **ESG:** The market continues to evolve with more issuers looking to update or create new ESG frameworks to include social use of proceeds in addition to green use of proceeds. The ESG performance report published by City of Toronto has served as a great example for other municipalities to follow in the coming years. Investors continue to show solid demand in ESG issuances and while it may be difficult to quantify the relative pricing benefit given volatile markets, it is clear that these labeled bonds have been very well oversubscribed allowing issuers to upsize their transactions.

FINANCIAL PERFORMANCE AND INFLATION

Mansoor Khan (RBC): I would like to welcome you all to RBC's third annual Municipal Treasurers Roundtable Conference. There are several interesting topics related to the municipal sector that we will be discussing today with our esteemed panelists which include Heather Taylor from the City of Toronto, Craig Dyer from the Region of Waterloo, Laura Mirabella from the Region of York, Matthew O'Rae from Municipal Finance Authority of British Columbia ("MFABC"), and Rachel Battaglia from RBC Economics.

Perhaps before we begin our round of questions from the treasurers, I would like to start with you Rachel. Can you please provide an overview of how you see the economy as it stands today and what are some of the notable challenges that the provinces are facing, which can potentially impact municipalities in the coming year?

Rachel Battaglia (RBC Economics): Thanks for having me everyone, my name is Rachel Battaglia, I'm an economist at RBC. In terms of the macroeconomic outlook for Canada, this year is shaping up to be a bit of a mixed bag. 2022 started off quite strong with many provinces feeding off rock bottom interest rates and the reopening of the economy after a series of lockdowns. Areas in Ontario and BC in particular inherited robust demand and a booming housing market from 2021, sustaining strong GDP growth in the first quarter of the year. That narrative, however, did start to shift after the Bank of Canada began its rate hiking campaign in March - raising interest rates 3.5% (at the time of the roundtable) just this year. As we've seen, higher rates have put a damper on consumer spending and investment; as such, we're expecting economic growth in Canada to moderate this year from the 5.0% reported in 2021.

Although we've seen the economy start to soften, it's been more resilient than anticipated. Q3 real GDP figures for Canada were released recently, reporting another quarter of positive growth and an annualized growth rate of 2.9%, which again, was stronger than many were forecasting. Most of that growth was coming from a rebound in net trade and another inventory build so we're still expecting to see economic activity slow further in upcoming quarters, bringing us into a mild recession in early 2023.

> Tension in the labour market will likely cushion employment from reaching typical cyclical lows.
>
> *Rachel Battaglia, RBC Economics*

On the inflation front, price growth is still top of mind. Inflation has been a bit more stubborn than folks at the Central Bank were probably hoping. Although CPI growth has started to come down slowly, it still looks like it's going to be at least another year before we get back to that targeted 2% territory. With that in mind, at RBC we are projecting another 25 basis point rate hike next week, bringing us to a terminal rate of 4%. There is some upside risk to that projection and a 50 point increase is certainly still on the table but a 25 point increase remains our base case.

With the recessionary period ahead, we're also expecting to see employment contract, so social services at the municipal level might feel a bit more strained. However, labour markets are still quite tight. That tension in the labour market will likely cushion employment from reaching typical cyclical lows, and might also buffer from a dramatic overburdening of those municipal services.

On the housing front, we are in the middle of a correction. Home prices and resales are likely to continue declining next year – although there have been early signs that the rate of decline has started to level off somewhat. We're expecting to see the largest declines to come from some of Canada's most expensive markets in Ontario and BC where home prices saw some of the largest gains in the country over the last two years. Given affordability issues tend to force Ontarians and residents of BC in particular to park a large share of their wealth in housing, homeowners in those provinces will likely see a chunk taken out of their net wealth as the real estate market continues its decline. That of course will draw in household consumption, making the recession a bit more pronounced in those two provinces than elsewhere in the country.

Even with home prices coming down, high interest rates are continuing to put pressure on affordability. Stubborn inflation is expected to keep interest rates in restrictive territory for the entirety of next year. On top of that, home prices are only expected to drop about 14% nationally, which won't completely undo the gains that we've seen over the last two years. With those forces at play, affordability is expected to remain stretched for the next little while, which will be felt at the municipal level given a lot of housing related supports fall there.

It's important to note the depth of the recession in the US, China's zero COVID policy, and the conflict in Ukraine are all recognized risks to the outlook I just described, but at this moment in time, that's the landscape that we're projecting for next year.

Mansoor Khan (RBC): Thanks for that Rachel. It would be interesting to hear about the financial performance from the Treasurers joining us in this panel as it relates to specific municipalities and regional districts. Maybe we can start off with you Heather. How have you seen Toronto's financial performance play out last year? During the pandemic, we had a lot of challenges. What would you say are the most notable impacts that you're feeling right now because of what happened two years ago? We can turn it over to Laura and Craig after your response.

Heather Taylor (Toronto): That's a big question, because there's a lot of different aspects. If we look at just the economic recovery, I would say that the City's biggest impact from COVID was a decline in its transit system. The fare box was dramatically impacted. We have seen a return of some ridership, but we are still well below pre-pandemic levels. We don't truly understand what ridership will look like. In 2022, we were hoping to get to about 80% of pre-pandemic levels. We are stuck in the high 60s, maybe 70%, so is that the new norm with hybrid work? It really is hard to say, especially with new waves of viruses coming out in the tail end of the year, so we are anticipating that to continue into 2023.

Other massive impacts on 2022's financial performance stem from COVID-related pressures such as transit as I mentioned, but also our shelter program. I think COVID was a catalyst for the vulnerable homeless population. Pre-COVID days, we had around 6,000 shelter beds a night. We are actually budgeting for 2023 to have 10,000 shelter beds a night, and we're well over 8,000 currently. Some of that pertains to the immigration policies in the sense of the refugees, the borders being open, and the Ukrainian situation. I'd say that about 2,200 beds a night are specifically refugees. These are the two main drivers on the city's finance that stem from COVID.

Municipal Land Transfer Tax ("MLTT") would be another financial performance item that is linked to the economic cycle. With the housing market softening, the fear was that it would dramatically impact our budget. Thankfully, a few years ago, we actually pivoted and split our MLTT up by dedicating a portion funding the operating budget and a portion funding our capital plan, so we've insulated ourselves to some extent on the softening of the real estate market. That would be another aspect of the financial performance, but I think we're managing okay.

Laura Mirabella (York): The situation's slightly different in York Region and other regions because we're an upper-tier municipality, we don't have the same pressures as Toronto. Our council did choose to put forward a relatively low tax levy increase last year, as it was under 2%. We did continue to have pretty significant COVID-related costs, but the reduction in our transit ridership recovered a bit more quickly than Toronto's in terms of revenue. We are expecting to finish the year within our overall budget, as we don't have the same levels of pressures, but we're still having some of those pressures. There is more demand in our shelter services and public health services, so we are continuing to have to reallocate resources internally to meet some of those increased COVID costs.

We have had to look really closely at our transit services to try and align the service levels to demand, but we still have a gap because we must continue to offer some of those services, whether the ridership is there or not, because you can't actually bring the ridership back unless the service is there to begin with. We were really impacted by inflation, we had projected inflation just under 3%, but it was around 7% last year, impacting us in terms of contract renewals and similar issues.

On the capital side, it impacted us more. We have a very ambitious capital program, and we were experiencing inflation of 16 to 17%. On the other hand, some of the other factors that were happening in the economy in terms of labour shortages and supply chain issues made it so that we're actually only going to achieve about 75% of our capital plan in 2022. As a result, some of those inflationary pressures have been absorbed within the overall capital envelope.

There is more demand in our shelter services and public health services, so we are continuing to have to reallocate resources internally to meet some of those increased COVID costs.

Laura Mirabella, York

Craig Dyer (Waterloo): My response is going to be very similar to parts of Heather's and Laura's. I think the two areas that were most impacted due to COVID were also transit and our homeless shelter system. Our transit recovery has been a bit of a different story – as of October, we hit pre-COVID ridership levels, and we attribute that to a great extent to our student population here in Waterloo region between the University of Waterloo, Wilfrid Laurier University, and Conestoga College. While transit ridership has bounced right back with people returning to class in-person, this is also putting great pressure on our service levels at a time when inflation and the price of diesel fuel remains very high. We're at the early stages transforming our fleet of buses from diesel to zero-emission electric. We have 270 diesel buses and the price of diesel is 60 or 70% higher than what we budgeted in 2022.

Impacts on the homeless shelter system have also been significant for us, as the delivery model for shelters changed due to COVID and it's not going back. We have added system capacity and millions of dollars to our homelessness budget. And we are proposing to add more next year, at a time when provincial funding in the form of the Social Services Relief Fund is expiring.

My other comment would be on our capital program – while CPI gets the headline every month, we don't buy what a consumer buys and we are impacted by cost inflation in a variety of ways, whether it is service contracts, collective agreements, or capital projects. Project tenders are coming in anywhere between 20 to 50% over what we budgeted. Trying to deal with that has been our third most significant challenge.

Mansoor Khan (RBC): Heather, maybe you can also comment on the inflation impact for the City of Toronto, as Craig and Laura just commented on that.

Heather Taylor (Toronto): On the capital plan side, I completely agree with everything my colleagues have just said. Projects are coming in, and we know that inflationary pressures are being triggered by the COVID supply chain issues, the Ukraine crisis as well as a competitive labour market that we haven't experienced in decades. It's very challenging to actually find the skilled workers, so that's all driving the prices up. The other element that I'd like to point out is just with increased interest rates, as we go into our very large capital plan, it is partially funded by debt, and we have financing ratios that we need to stay in compliance with.

> Some local governments are still flushed with that higher level government support that came in during COVID. They're funding some of their capital expenditures with cash as a result instead of debt.
>
> *Matthew O'Rae, MFABC*

When interest rates go up, we're able to finance less, so to keep our capital plan balanced we need to revisit our capital projects and adjust available funding for investments. The headwinds on the capital plan are being triggered by the inflation that we're experiencing in contracts and projects, but also by the increased interest rates. Our debt available to fund our capital plan is lower. That has had an impact on 2022 and will continue to have an impact in future years. As we go into the public bond market, the bonds we're issuing are for multiple years, 10, 20, or 30 years, so we're going to be carrying some of these higher interest rate debt for years to come.

Laura Mirabella (York): If I can just add on top of that, depending on what you're using debt for, it impacts the capital projects. In the case of York Region, most of our asset management is meant to ensure our existing assets are in a state of good repair, and necessary repairs are funded from the reserves that we've been building up over the last little while. But we fund our growth-related capital from debt. As interest rates have risen, and we've had to be a bit closer to the line in terms of the new financing we can put out each year, if we need to slow down our growth-related capital, that impacts the availability of housing for all those new immigrants that are coming in.

Mansoor Khan (RBC): Rachel, the market is expecting Central banks to do whatever it takes to try to bring inflation back down to under 2%. How do you see the current chances of the central banks being able to do so in the coming year?

Rachel Battaglia (RBC Economics): Many components of the Canadian economy have been slow to react to interest rate hikes. Despite raising rates, economic growth and employment have held relatively strong and inflation has remained a bit stubborn. Geopolitical tensions in Ukraine have put upward pressure on commodity prices and China's zero COVID policy has continued to test supply chains. With CPI growth expected to reach nearly 7% this year, we are forecasting inflation to remain high for all of 2023 – easing up to just over 2%, by Q4. As such, rates are likely to remain in restrictive territory for all of 2023 as well. Clearly everything is a moving target but, at this point, we're not projecting any rate cuts from the Bank of Canada before 2024.

Mansoor Khan (RBC): Moving to the west coast, Matt, from your perspective, what are you seeing from the MFA members? Any interesting trends as it relates to the finances for the borrowing municipalities?

Matthew O'Rae (MFABC): One of the things we're seeing here is somewhat reduced activity in our short-term loan program year over year. Among the reasons this is happening is that some local governments are still flush with that higher level government support that came in during COVID. They're funding some of their capital expenditures with cash as a result instead of debt. I think the other thing, just to echo what Craig, Laura, and Heather touched upon, is that supply chain pressures and labor issues are leading to slower spending. On the other hand, construction inflation is clearly off the charts, and our members are reporting exactly what Craig alluded to, with tenders coming in at 20% to 50% over budget, leading to some projects being scaled back or postponed altogether.

Overall, it's causing our members to reevaluate some of their priorities and slow their capital expenditure plans as Heather and Laura alluded to, that interest bite and serviceability really adds additional pressure. Other trends that we are seeing echo a lot of what you've heard from my counterparts so far.

I'll touch on a couple more themes here. Some of them are a bit repetitive, but without a doubt, there's a continued focus on infrastructure expansion and renewal, as we've heard from Heather and Laura. That's top of many local governments' priority list right now in British Columbia. They're really working hard at incorporating climate adaptation and risk strategies into their infrastructure asset management plans. We've seen a big focus on that piece. We've talked about soaring construction costs and where tenders are coming back, so we've been working closely

CANADIAN CPI AND BUSINESS WAGE/PRICE PLANS PEAKING

Source: StatCan, CFIB, RBC Economics

with local governments to layer on efficient debt financing strategies and investment alternatives for long-dated capital reserve requirements to ensure they are best protected against inflation.

Some of the larger municipalities talk about housing affordability and strains in healthcare and public safety demands. We're really encouraged by Premier Eby's comments at his recent swearing in ceremony to devote additional resources to these areas, but as everyone knows, they are not easy problems to address.

If we're going to see a deterioration anywhere, although we're in a good position of strong reserves and historical surpluses, I think the discretionary services will be impacted up front. We tended to see that during the pandemic, households tightening their finances. Some of the recreation centers may very well be some of the first areas that we see a weakness in for example. I think the last thing I'll comment on is wage inflation. Some of the local governments are in the middle of negotiating some of their contracts with their unionized workforce. We'll certainly see upward pressure on labor expenditures that will require offsets to balance budgets.

REAL ESTATE AND IMMIGRATION

Mansoor Khan (RBC): Building on your comment about housing Matt, are there any notable observations you have seen on the real estate market in British Columbia? And would that have any potential impact on the borrowing members?

Matthew O'Rae (MFABC): Activities slowing, there's no doubt. Maybe we're at a floor here. There is clearly subdued demand as purchasing power has been eroded due to interest serviceability and increased inflation on other essential items such as food and energy. Perhaps there's still some more weakness to come. We're obviously monitoring that closely, but the labour market has been extremely resilient. Our medium and long-term outlook on housing in the province is still very strong, supported by population growth both from within Canada and through immigration. Property tax collection rates remained extremely high during the pandemic. We're not expecting any material impact on our members nor are we expecting it to have any impairment on their loan serviceability.

Mansoor Khan (RBC): Turning it over to the other panelists to comment on the notable observations related to the real estate market in their respective regions starting off with Laura?

Laura Mirabella (York): I very much agree, we have not seen any real delinquency in terms of property taxes. As a region, we're accepting property taxes from the locals, but our locals haven't been experiencing losses. In the first year of the pandemic, we made an arrangement with our local municipalities to allow them to defer submission of the property taxes to the region so that they could provide a deferral program to their residents to manage the uncertainty around the pandemic, and we actually found that it wasn't really necessary. People will pay their mortgage and their property taxes first, and as a result, that hasn't been a major pressure for us.

Craig Dyer (Waterloo): Specific to the real estate question, I would concur with Laura. We had the exact same experience here in Waterloo Region, we put the same deferral options in place which did not need to be exercised, as the vast majority of tax payments were still being made.

Laura Mirabella (York): I was just going to add, on the capital side, what we did notice, 2021 was a real slow down in the pulling of permits, but that has recovered. Where our development charge collections were lower than we had anticipated in 2021 and 2020, 2022 has actually been higher than we forecasted. As at the end of October, we have already exceeded our forecast for the year, so those permits are being pulled at a faster rate than expected – they've really recovered.

We put the same deferral options in place which did not need to be exercised, as the vast majority of tax payments were still being made.

Craig Dyer, Waterloo

Heather Taylor (Toronto): The City of Toronto's experience is very similar to what my colleagues have said. From a city perspective, we too offered a deferral program by the end of the year, but our delinquency was no different than any prior COVID year. It is nice to hear that it is a common experience across different jurisdictions. With regards to development, we were seeing some particular developments actually paused, not because of the city, but because of interest rates. The interest rates were impacting developers' rate of returns, and we were seeing certain projects paused. We too, were looking at specific projects where we were partnering with the development community for affordable housing. The business case has to be there, it has to be driven by the amount of market rents, but the market rents did fall off during COVID, and they have rebounded as we all know from the news. I think there's different elements: the interest component, the market component, and the development pent up demand aspect. Where you make positive gains in some areas, you're being restricted, or you're seeing some potential deferrals for other reasons.

> With regards to development, we were seeing some particular developments actually paused, not because of the city, but because of interest rates.
>
> *Heather Taylor, Toronto*

Mansoor Khan (RBC): Thanks for your valuable insight. The real estate market is always at the forefront of investors' minds when it comes to the Canadian market. Immigration of course is also a significant contributor to the rise in housing prices that we have experienced over the last number of years.

Rachel, we understand that Canada has ambitious immigration targets in the years ahead. How do you see that impacting the Canadian economy as a whole? Also, which municipalities or regions will see the most meaningful impact from it?

> In the near-term, the uptick in unemployment and Ottawa's increasing immigration targets will provide some temporary relief to the crunched labour market.
>
> *Rachel Battaglia, RBC Economics*

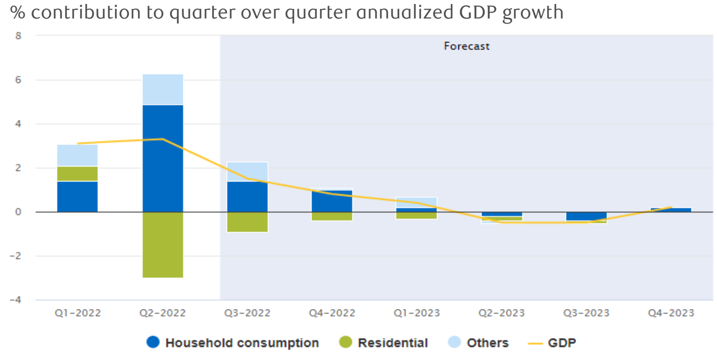
Rachel Battaglia (RBC Economics): Labour shortages have held back growth in many areas of the country over the last two years. And that speedy economic recovery put a real strain on businesses which struggled to find the skilled workers they needed. In the near-term, we are expecting a slight uptick in unemployment given the upcoming recession; we also know Ottawa is upping immigration targets to make up for the last few years. Both of those factors will undoubtedly provide some temporary relief to crunched labour markets in the short-term. But fundamentally, we're up against an aging population. We're already seeing the baby boomer generation start to retire in droves and Canada's skilled workforce isn't being replaced quickly enough.

Additionally, we're seeing a dispersion of international immigrants across the country, which is a change from historical patterns. Newcomers in the past would settle in urban areas of Ontario by far and large, now we're seeing unprecedented levels of international migrants settling in the Maritime Provinces instead. Cost of living is no doubt a driving force of that shift, and with affordability being the pressure point that is it in Ontario and BC, I think it's likely that we'll see that dispersion of migrants across the country continue moving forward.

From a municipal perspective, there are a lot of services that municipalities are responsible for: EMS, housing supports, recreation, etc. Any large influx of people will add strain to those services, and in order to keep them efficient and available to serve a growing population, it takes diligent planning and the proper investment. On top of that general influx, I expect municipalities to see a strain on services that are used disproportionately by newcomers to Canada. Ottawa is targeting almost half a million immigrants every year until 2025, and we're on track to hit those targets. With the dispersion of newcomers across the country, I suspect municipalities out east will face more of a shock than anywhere else, given they just aren't used to seeing these levels of in-migration. That said, the absolute number of newcomers is going to expand across the board. Even though some areas of the country might see their share of the pie shrink, the absolute number of immigrants is growing, and that's going to increase demand for services and the need for infrastructure across all municipalities.

HOUSING AND SPENDING SLOWDOWN TO DRIVE LOWER GROWTH

% contribution to quarter over quarter annualized GDP growth



Source: StatCan, RBC Projections

MUNICIPAL BUDGETING AND POLICIES

Mansoor Khan (RBC): Rachel, you touched on this topic earlier but if you can elaborate a little bit on your views as it relates to the potential recession that the market is expecting next year. In terms of the official RBC forecasts, do we have any views on how long, and how mild you expect it to be?

Rachel Battaglia (RBC Economics): The upcoming recession is expected to rank among the mildest in the country over the last 70 years – certainly less severe than the 2008 financial crisis. And tight labour markets are a major contributing factor to our expectation for a shallow recession. Employment strains have been a real hindrance to economic growth in recent quarters; and, although those labour market tensions might ease in the year ahead, employment is unlikely to reach its typical cyclical lows next year.

> The upcoming recession is expected to rank among the mildest in the country over the last 70 years – certainly less severe than the 2008 financial crisis.
>
> *Rachel Battaglia, RBC Economics*

Mansoor Khan (RBC): Thanks Rachel. Going back to you Matt, municipalities are in the midst of their budgeting period right now. How much of a concern is a potential recession next year for you? Perhaps others can also opine on it after.

Matthew O'Rae (MFABC): BC consumers are quite levered with both consumer and mortgage indebtedness, of which, a portion is floating rate. The unprecedented speed of rate hikes is going to be felt and a mild recession is probably inevitable as Rachel alluded to. There is no doubt interest rates are going to have an impact on the consumer and the housing market. But the Province's economy is quite well diversified from an economic exposure perspective and MFA itself has never experienced a loss through any other historical periods of economic weakness. We don't foresee those tighter economic conditions materially impacting our clients, their loan book, and their ability to service those obligations. The majority have ample reserves and have shown their ability to right size their budgets as needed. Property tax collections in the province have always been very stable even during economic contractions and recessionary periods.

Craig Dyer (Waterloo): It's hard to know where to start. It feels like a perfect storm in some respects. Everything we've talked about so far in terms of impacts in 2022 are our most significant budget factors going into 2023 as well. In no particular order: inflation and cost escalation, fuel prices, the need for programs for people experiencing homelessness, transit service recovery, higher interest rates, and the public expectation that as municipalities we are going to address complex social problems in the absence of long term stable funding. All of this is impacting our 2023 budget, both operating and capital, at a time when there is an expectation of a recession, and housing affordability remains out of reach for huge segments of the population. And we have recently come through a municipal election. In our case, we have a Regional council with over 50% turnover from last time, and we are working with our new council to bring them up to speed on this myriad of economic and service level related issues. For me as a municipal treasurer, this is likely the hardest budget I've ever done - I just can't think of another budget that has had that significant mix of material impacts all at once. Budgeting over the last 10 years has been done in an environment of relatively low and stable inflation and historically low cost of borrowing. And this has changed dramatically over the last 12 to 18 months. So we are in a highly unusual situation which is creating immense pressure on municipal budgets next year.

Heather Taylor (Toronto): As it relates to the budget, we are contemplating continued inflation. Craig had mentioned earlier the cost of fuel. Just to contextualize it for the city, when the price of gas goes up a penny, it's a C$750,000 impact. For example, we know there's a worldwide shortage of diesel, and with a potentially 50 to 70 cent rise in the diesel price, translates into C$37.5 to C$50 million more for the city. That's over a one percent tax rate increase just to deal with fuel pressures, never mind growth and inflationary impacts of everything else, so we've tried our best to build in what we anticipate.

> The unprecedented speed of rate hikes is going to be felt and a mild recession is probably inevitable.
>
> *Matthew O'Rae, MFABC*

I think, if there is a recession, we will see additional impacts on city services. In many instances, we offer programs that are subsidized if you meet certain thresholds. And I would suspect that history shows during recessions, more families and individuals meet the thresholds that qualify them for those programs. As a result, there could be an increased demand on city programs, and that obviously puts pressure on keeping a balanced fiscal budget.

Laura Mirabella (York): With respect to our operating budget and particularly COVID support, I realize I'm incredibly lucky to be the treasurer of a region that is actually relatively affluent. While we are adjacent to the City of Toronto, we haven't had as severe COVID related social service pressures. So we do continue to have incremental public health pressures and the issues around transit ridership, for us it's a relatively modest C$160 million that we have in our 2022 budget, and we expect it to be roughly the same next year, of which close to half the province has committed to funding.

Mansoor Khan (RBC): Craig, you mentioned absence of provincial funding. That was obviously a big factor in terms of the support municipalities received during the pandemic. What are your expectations as it relates to provincial support going forward and perhaps on a related topic, your thoughts on the impact of Bill 23? Will turn it over to the other panelists to opine on that after as well.

Craig Dyer (Waterloo): It appears we are seeing the end of COVID-related provincial funding for transit as we head into 2023. More of an issue for Waterloo Region is the expiry of the Social Services Relief Fund at the end of 2022. We have used this fund to help offset higher operating costs associated with a number of new and expanded homelessness programs that we have put in place. This is creating an added impact for us from a property tax levy perspective in 2023. I think we're still optimistic that some COVID funding will continue for public health, perhaps for long-term care and for paramedic services, but these represent a much smaller risk exposure to us going forward.

Bill 23 is of immense concern to me and my colleagues on this call. That bill has now received Royal Assent, and we are waiting to see the regulations. The challenge for municipalities is that we have a limited number of revenue sources to pay for new capital infrastructure. We have development charges, property taxes and water/wastewater rates. If the Province is going to slow down the flow of development charges, then municipalities will have to either slow down infrastructure projects needed to service the housing that the province wants to build, or we are increasing property taxes and user rates over the long term. It's not necessarily immediate, but over the next 5, 10, and 20 years there will be a significant impact. The province has an ambitious housing target over the next 10 years - we need to accommodate more housing than we had planned for, and yet our primary funding source in the form of development charges is being restricted.

This is likely the hardest budget I've ever done.

Craig Dyer, Waterloo

Heather Taylor (Toronto): For the City, as it relates to the provincial support during the pandemic, we're still not made whole for 2022, but there was an announcement yesterday that a one third portion of our COVID shortfall would be granted. We have made a very compelling case to the federal government and the provincial governments around the need to address transit operations. If you think about where there are always announcements, it's around transit growth, which one will argue we absolutely need, as we see populations coming into the city. But in actual fact, operating cost associated with that expansion of transit has to be paid somehow, and the transit fare box doesn't cover the operations.

The city subsidizes the TTC on top of the fare box by a billion dollars a year, so as transit expands, that subsidy will have to expand, and we're turning to other orders of government to say that with this new hybrid reality, we do need continued support.

In many instances, we offer programs that are subsidized if you meet certain thresholds. And I would suspect that history shows during recessions, more families and individuals meet the thresholds that qualify them for those programs.

Heather Taylor, Toronto

Whether someone wants to label that as COVID support or do we look at a regional model to deal with transit? Do we look at a different model with regards to services that benefit more than just the citizens of Toronto? So I will say that I'm guarded about being optimistic around funding, but with the size and the demands on the shelter systems that are created by potential recessionary environments, by the COVID scenario, and by immigration, I just think they have to pay attention to continued support. So I think we all agree to continued support and there's lots of great data that shows why we need it. We just hope that they understand the importance of continuing the support.

And then we get into Bill 23, which I think we will all admit with a bit of a curve ball, with no heads up, it came out of nowhere.

We were all in the midst of our budgets, and as people are familiar with municipal budgeting, we do 10-year capital plans. To have the amount of revenues that we're generating to fund our capital substantially impacted without warning, we're still trying to figure out how that's going to unfold, but the preliminary estimates for the city are C$230 million a year, and C$2.3 billion over 10 years. Where there is concern is that in order to support growth, which is the demands of the province, you in actual fact have to invest up front. If we're limited in those investments, there are unintentional consequences to the legislation which will actually slow things down. Where we come up with the money for that upfront investment, is guided by how much we can finance, how much we can afford given high interest rates? How do we repay that?

I think the province believes it's the approval process that gets the units. You have to also think about the upfront investments required to support the development such as roads, infrastructure, water, and main sewers. I keep saying have they thought about schools, hospitals, doctors, etc., all the provincial services and responsibilities that support residents in Ontario that are going to be needed for that increased population. We have tried our best to educate. I think everybody here participated in compiling information that was shared with a standing committee on the Bill 23 consultations. I don't believe that there is a sound understanding of the impacts of Bill 23 on municipal finance and on the ability to expedite housing. In actual fact, it's counterintuitive.

Without the money, there's no ability to invest in the infrastructure that's needed to support communities, new housing units, or increased density for that matter. There is a substantial concern that's been flagged by the mayor to the premier. There are discussions about what the government do to fill the gap that they just created. Understanding how it truly impacts the 10-year capital plan, I don't think we have enough time. The other piece of legislation that I get to be the beneficiary of is Bill 3. There's two municipalities in Ontario that are impacted by strong mayor powers, which dictate our budgets need to be tabled by February 1st. So we don't have time to actually truly flush out in great detail the impacts of Bill 23 on our capital plan and still be able to deliver a budget by February 1st, so we are putting in high level assumptions. The city had just completed a background study, which informs new DC rates going forward. Thankfully, we have current information that will help expedite the impacts or understanding the impacts, but that's still to be flushed out. This entire conversation time slot could be taken up by our opinions on Bill 23, so I would cap it at that and allow my colleagues to say the rest.

Laura Mirabella (York): One area the Province has committed to continue to support regions in is their incremental public health costs. The costs of having those mass vaccination clinics and encouraging vaccinations, but my colleagues are correct, they have backed away from additional transit funding. That is unfortunate because they are also asking us to push more people onto transit to reduce our parking minimums. We're really in this transition phase where if ridership doesn't recover, we don't have the operating cost to even fund our current services. Our councils are very reluctant to expand services when we can't achieve the cost recovery ratios that they have mandated for us.

Talking about Bill 23, I was saying earlier the province has made some choices around our fiscal arrangements for how we fund infrastructure, but I want to put a few things in context. Their narrative is around municipal fees and charges impacting housing affordability. Nobody argues that we have a supply problem that more supply would help moderate. At the end of the day, we're really returning to 1980s ideas and supply side economics doesn't always work. More supply isn't going to necessarily increase affordability. It might just increase profits. And I think that's borne out by the fact that while demand continues to exist, as Heather was saying earlier, developers are actually putting a pause on projects because they don't like the margins they're getting with the increased interest rates.

The reality is the demand is out there, if they priced their product accordingly, they could sell it all and build more, and they're choosing not to. Development charges make up about 7% of the cost of a home in York Region. Even if they were completely eliminated for all homes and all of the savings were passed on, I don't think 93% of current prices is really going to expand affordability as much as we need in the GTA. That being said, the province gets to decide that we can't collect as much as we have in the past. It's about 10 to 15% reduction in development charges for York Region, and that will impact our capital plan in some way.

> The capital plan needs to be balanced. Both on the operating side and the capital side
>
> *Laura Mirabella, York*

The capital plan needs to be balanced. Both on the operating side and the capital side, we have to plan for balance. We need to have strong balance sheets. We're not a senior level of government with an unlimited taxing authority, so we need to have these strong balance sheets, which means we need to have reserves. They're talking about auditing our reserve levels. The reserves that municipalities have are to ensure that we've got appropriate liquidity on our balance sheets, they're to ensure that we can keep our current assets in a state of good repair, and that our debt levels don't go above affordable levels. So for a given level of capital expenditure, for our development charges decrease, we're actually having to increase property taxes or draw down our reserves and weaken our balance sheets. And I think when most municipal councils are faced with that, it's going to be a very difficult choice.

The risk is we actually reduce our capital expenditures, which will facilitate less growth related housing. There's likely some unintended consequences here which haven't been fully thought out. 10 to 15% for us is about C$500 million, so about half a billion dollars over the next 10 years on a capital plan of C$9.5 billion. That is significant because it's really the share that is funded from development charges, which is about 40% or so. We would actually have to reduce the capital plan by over a billion dollars, C$1.2 billion, with all things being equal in order to stay in equilibrium with the loss of those development charges. We won't have all the answers for this year's budget process because our budget is essentially fully baked and was even by the time Bill 23 was introduced. We will have to take that away, and flag some of these high level assumptions to our council and we will have to come back later in the year, probably at our mid-year report, when we understand a bit more, to make some recommendations about how we change either the cadence of our capital plan or make recommendations about increased tax levy funding for our capital plan.

Heather Taylor (Toronto): I want to just expand on something that Laura started to touch on, and I should have mentioned. I think there's a misnomer that municipalities and regions have these large reserves that have been collected from developers and we're just sitting on them and they are not being spent. I think what's happened is there's a misunderstanding that when development charges are received, that money is restricted, contractually obligated to be spent and invested to support the development that has already been approved. The feeling is we can exhaust those reserves before we need to actually start collecting, and I think that in itself is a misunderstanding. Those reserves are really deferred revenues. There are the reserves that Laura spoke to that we intentionally put money away for a crisis like COVID, but I don't think municipalities have robust reserves on top of the deferred revenues that we've collected. They all get captured and described the same way.

I think the development community really did portray these deferred revenue balances that we're sitting on as cushions of unspent money. I personally have briefed some of those large organization to try and shed some insight. The other thing I do want to highlight is that in conversations with the province, they also believe that as we expand our tax base and we build these new units, we will be generating substantially more revenue that will actually help the budgets. The tax base will increase, however, so will the demands for city services. If we think now we've got pressures based on the current population, those pressures will only increase with growth and obviously inflation. So there's this misnomer with property tax revenue, in that it is meant for the operating budget, not for the capital budget. I just wanted to highlight there's those two aspects of disagreements between the municipalities and the province as to the purpose of those deferred revenue reserves and the future income that will be generated.

Mansoor Khan (RBC): Thanks a lot for sharing your thoughts and I am sure there is more to come on this next year.

MUNICIPAL BORROWING

Mansoor Khan (RBC): One of the key structural features worth highlighting regarding Canadian municipalities for the audience is that they only borrow for capital projects and not for operating purposes. That has been a strong selling point for municipal issuers when meeting domestic and international investors. Maybe we can chat a little bit regarding the borrowing programs for all the issuers present in our panel today. Starting with you Matt, from MFABC's perspective, your borrowing program went from ~C$2 billion in 2021 to ~C$1.3 billion in 2022. Can you provide a brief overview of your borrowing program, how that has changed in the last year, and what do you expect next year?

Matthew O'Rae (MFABC): 2023 versus 2022, we'll certainly see some higher overall borrowing requirements predominantly due to refinancing. Right now, we've got the 2023 borrowing program pegged between roughly C$1.6 to C$2 billion. It's really going to depend on some of the things that we've talked about with respect to both growth and maintenance capital expenditure requirements along with affordability of funding for new loans. We're going to see a slight increase as mentioned over last year, on the back of refinancing. For new loan growth, we're expecting it to be flat, maybe slightly less. We're waiting to see how capital inflation and debt service affordability work its way through our members during their budget planning processes.

With regard to term, we have ventured out in the 20-year space and we'd certainly love to do more as our underlying loan book and project funding requirements align. Next year, we'll keep an eye on the 20-year, but investors can probably expect two 10-year issuances to fund new loan requirements, although they will likely be slightly later than we typically come to market (June/November), as we balance market timing to meet refinancing requirements. We will continue to try and get issue sizes up to C$500 million benchmark levels to ensure adequate liquidity. We also have a September and December bond coming due. Investors can expect refinancing requirements for each in and around C$400 million for each of those maturities – expect 5-year maturities for those as usual for refinancings. We'll continue to look at what we can reopen versus started a new line wherever manageable.

We have ventured out in the 20-year space and we'd certainly love to do more as our underlying loan book and project funding requirements align.

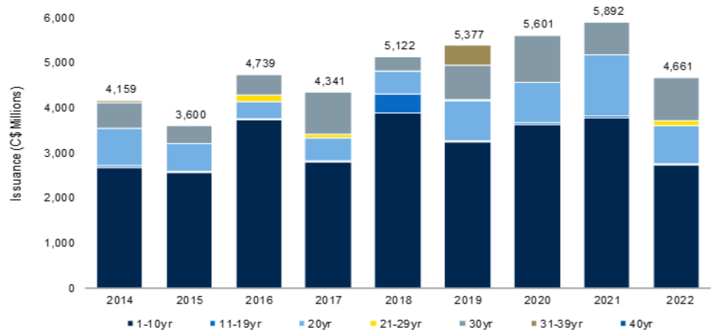
Matthew O'Rae, MFABC

We'll have a small refinancing amount in April that we'll likely do via private placement and with some commercial paper (roughly C$100 million each). That's the issuance composition and size that we're looking to do in 2023. We're continually updating our investor relations slide deck as we get a bit more color from some of our larger members that are currently in their budget planning process.

Mansoor Khan (RBC): Matt, can you also elaborate a bit more on why MFABC only issues 5 and 10-year bonds?

Matthew O'Rae (MFABC): It is basically a clean way for us to create amortizing loans from 5 out to 30 years. Historically, the bulk of the loans have been amortized for 15-years or longer in each loan package being funded – the Member chooses their preferred amortization period. We typically fund each loan package out of the gate with a 10-year debenture and then subsequently refinance with 5-year debentures until maturity of the last 30-year loans. As the 10-year debt matures (5 and 10 year loans have amortized), we only refinance debt at a level that is in line with the loan book continuing (15, 20, 25 and 30 year loans). We are asset-liability matching as the loan packages amortizes down to zero over 30-years. As part of our debt management strategy, we have a desire to reduce our refinancing risk, push the term of our debt out and build a longer dated benchmark curve. From time to time the loan book only has 20-year loans or longer in it and we'll look to issue a 20-year debenture in those cases. Unfortunately, this past year, we probably could have made a 20-year work with the loan package that required financing, but the market wasn't quite conducive in that part of the curve, so we backed away and ended up doing another 10-year debenture.

ANNUAL C$ MUNICIPAL ISSUANCE



Source: RBC Capital Markets

Mansoor Khan (RBC): Turning over to you Heather, City of Toronto borrowed around C$1 billion in 2021 and increased their borrowing to C$1.2 billion in 2022, can you please provide an overview of your borrowing program?

Heather Taylor (Toronto): In the past we've actually gone into the market for a billion dollars a year. We have just completed an issuance this week that took us up to C$1.2 billion. That is the amount that we carry through. We do have authority to go up to C$2 billion in any one year, but given interest rates, we will be managing the ability to stay within our 15% debt service ratio threshold that we've set.

> The reason we pick those terms is we match the asset that is being amortized. [...] So the 10, 20, and 30-year gives us flexibility of managing a portfolio of assets that have different useful life terms.
>
> *Heather Taylor, Toronto*

I will say that a couple years ago we did launch our sustainability financing framework, which involves both the green bond and a social bond. And I think throughout 2022, we all know it was a very volatile time, it has been since COVID surfaced. I do think that the attractiveness of the green bond and the social bond is what allowed us to have successful placements. We are committed to continuing that into 2023 and onwards. The new base for the City of Toronto will start at C$1.2 billion.

Mansoor Khan (RBC): I will come back to you and talk more on ESG as there is a lot to talk about there but before that, just to highlight to the audience here, Toronto continues to target 10, 20, and 30-year terms in the domestic market, any reasons behind that Heather?

Heather Taylor (Toronto): The reason we pick those terms is we match the asset that is being amortized. Some assets don't have 30-year lives, and so we cannot amortize debt over an asset that's already at its end of useful life. So the 10, 20, and 30-year gives us flexibility of managing a portfolio of assets that have different useful life terms.

Mansoor Khan (RBC): Craig, Waterloo has been a consistent issuer in a serial format. Could you provide some context around why Waterloo target serial bonds compared to bullets? Maybe also share how much you borrow annually and your plans for next year?

Craig Dyer (Waterloo): The Region's debt issuance is much smaller than Toronto and MFABC. Traditionally we've been in the market twice a year, typically in the spring and fall. We issue debt to finance our own capital works as well as for the seven lower-tier municipalities within the Region. We assemble all the financing needs and put together a financing program that works for the multiple beneficiaries of the issue. This past year we issued just over C$80 million through two issues. I would expect next year to likely be similar, with our borrowing needs probably somewhere in the range of C$80 to C$100 million. One of the wild cards is the extent to which municipal capital programs will be adjusted due to capital cost escalation and the cost of borrowing as we already discussed.

Our preference for serial issues is really just a matter of quantum. If we are looking for C$40 - C$50 million in financing, we can use the serial structure to take advantage of the lower rates in the earlier years and achieve an overall lower cost of borrowing. That's typically why we've gone that route, with a few notable exceptions. When we financed our Stage 1 LRT project a number of years ago, we used two C$50 million, 30-year bullet issues. So our debt structure will vary depending on the project. Again I think we will be looking to issue C$80 to C$100 million in the 10 to 20 year range in 2023.

Mansoor Khan (RBC): Laura, York was absent from the market this year. Could you please provide some context around the reason for the absence and how you run your borrowing program under normal circumstances?

Laura Mirabella (York): We have had years in the past where we haven't gone to market and for this year, one of the main reasons is that we did a bit of pre-borrowing over the last couple of years. We had the flexibility to be able to take advantage of some of those ultra-low interest rates. We also have the advantage of that 10-year capital plan, so we know exactly what capital projects are happening. We have some longer term contracts, and so we were able to do a bit of pre-borrowing over the last couple of years, which didn't require us to go to the market in 2022. We generally plan to go out twice a year, also in the fall and spring, and we do a combination of 10s, 20s, and 30s, according to the lifespan of the assets that we are financing against.

We generally plan to go out twice a year, also in the fall and spring, and we do a combination of 10s, 20s, and 30s, according to the lifespan of the assets that we are financing against.

Laura Mrabella, York

We do plan to and intend to go out to the market in 2023. At this point, we are looking somewhere south of C$200 million, probably in the C$160 to C$180 million range at this point. That's all subject to change as we start to dig into the analysis around Bill 23 and what may need to change in terms of the cadence of our capital plan, which may have an impact on our financing strategy. At this point, we are expecting to go out to the market, but I just don't know whether that C$160 to C$180 million will hold.

Craig Dyer (Waterloo): Just on this topic, if I may ask a question of Rachel about long-term interest rates. What is your prognosis on long term rates at this point as we think about potentially going to the market twice in 2023? Do you think rates will be lower by the fall? I'm wondering if you have any perspective on that at this early stage.

We can use the serial structure to take advantage of the lower rates in the earlier years and achieve an overall lower cost of borrowing. That's typically why we've gone that route.

Craig Dyer, Waterloo

Rachel Battaglia (RBC Economics): I'll leave it to my colleagues in Capital Markets to give advice on when you should issue debt. But I can certainly tell you what we're expecting for longer-term interest rates next year. 10- and 30-year yields have already come down quite a bit over the past couple of months—they're nearly a percentage point below their October highs. That's reflective of the expectation that the economy will continue to slow, inflation will continue to moderate, and central banks will eventually move monetary policy to a less restrictive zone. Given those are trends we're anticipating over the next year or so, we think the recent decline in yields is justified.

Shorter-term yields are likely to come down next year as the Bank of Canada hits pause on its tightening cycle and the market begins to focus more on eventual rate cuts. But ultimately we don't think the Bank of Canada will be cutting rates as much or leaving them as low for long periods of time as they have in recent cycles - and that will help keep longer-term yields anchored around current levels. RBC's forecast assumes yields will drift a bit lower next year but not substantially, although there's always the risk of volatility around these forecasts.

ESG AND SUSTAINABLE FINANCE INITIATIVES

Mansoor Khan (RBC): It's almost impossible to have any discussion nowadays without talking about ESG. I had a couple of questions starting off with Heather. Two years ago, the City of Toronto became the first public sector issuer, at least in Canada, who published an ESG performance report. Since then, we've seen the province of British Columbia produce one as well. Kudos to you for setting the standard and encouraging other issuers to do the same. From your perspective, two years down the line, how has this report evolved? And secondly, has it so far achieved the objective that you set out initially when you published the report?

Heather Taylor (Toronto): When you ask about if the report has achieved its objective, someone else has done one now – the province of BC has done one, so I'd say yes right off the bat. For the size of the city, the objective was about bringing together all the great work that the city was doing and was committing to. As you can appreciate with the size of the city, very often work gets done in silos and there's no real integrative thinking or reporting. It was an opportunity to actually bring all those commitments and all the work that was being done into one area for stakeholders to read about, for stakeholders to monitor, and to hold us accountable. So I would say yes – was it successful and was it what I hoped. It was a start.

I think what's really important now as we look towards your question about the evolution is you're aware that I am involved in the Public Sector Accounting ("PSA"), and so I'm close to the standards that are coming out through the international body, the International Sustainability Standards Board ("ISSB"). There are standards that are coming, and it is about being prepared, not only from a financial statement perspective, but from that additional disclosure on what is important to investors. But I think, what I'm going to be excited about in our next report is that with all the concern about greenwashing in the market and with our sustainability framework, what I've done is I have been working with the International Organization for Standardization ("ISO") to get us certified under two standards, the Sustainability Standards and the Smart City Standards, which all fall under the ESG umbrella, but I'm also working with them on an ESG Standards.

> By showing evolution, improvements and additional data reporting each year, it's also forcing the city to get better and mature our data collection, data requirements, as well as set better KPIs.
>
> *Heather Taylor, Toronto*

By showing evolution, improvements and additional data reporting each year, it's also forcing the city to get better and mature our data collection, data requirements, as well as set better KPIs. I think it's been a huge success. It holds us more accountable, which is the piece that I'm quite keen about. I was super excited to see the province of BC do so. My colleagues here will attest to the fact that I have talked to them about ESG reporting. I've always said that hopefully I've done it in a way that makes it truly easy to copy and easy to replicate so that more of us are doing it and, and more stakeholders are interested in seeing us do it.

Mansoor Khan (RBC): Are there any specific ESG targets for the City of Toronto that you would particularly like to highlight for the audience?

Heather Taylor (Toronto): During 2022, we actually came up with our climate plan and we have clearly established goals and targets that we want to set, and we've accelerated our net zero target from 2050 to 2040. So the plan itself, the climate change plan, in actual fact outlined what we wanted to do under the "E" of ESG. I think it'll be really important to watch as we see the Ukrainian crisis unfold, as we look at immigration, to really understand what the "S" is going to be. We can talk about it at a very high level from our past experiences, but I think it is truly understanding what's coming at us from the "S" perspective, and then from the "G" is getting ready for the disclosure.

We've already got Task Force on Climate-Related Financial Disclosures ("TCFD") that we are already doing in our financial statements. It is about the governance, it is about the oversight and the accountability. I think most people when they hear of ESG, they really focus on the "E" and they kind of forget about the "S" and "G". TCFD could easily be in my colleagues' financial statements, even if they don't want to do an ESG report. So I think there's multiple opportunities for organizations to start looking at and tackling.

Mansoor Khan (RBC): The inevitable question for Laura and Craig is when are we seeing ESG reports from Region of York and Waterloo?

Laura Mirabella (York): I'm thrilled to get the question. I want to start by thanking Heather because her leadership in this area helped prime the pump. I'll start by saying something you've probably already heard from my Director of Treasury at Hankins – everything that municipalities do has an environmental sustainability component. We are in the business of making sure that our communities have the infrastructure that they need and that it stays in a state of good repair despite all of our climate change risks. So a lot of what we do is already around that, but as Heather said, it's about how do we communicate that? How do we communicate it to our councils? How do we make it concrete for them that they're making those decisions? So you will see for the first time this year in our budget book, we are revamping our planning and budgeting chapter, and we are talking about the creation of a formalized ESG framework for York Region.

One of the things that happened in the spring was our Planning Department and Environmental Services Department came together and brought council a formalized climate change action plan. The framework that the Finance Department is putting together is going to be about how we start to communicate and measure performance in all of those areas. That'll be under development over the course of this year. We're hoping to have our first ESG performance reporting in 2024, but it really will be an iterative process. We're starting to talk about it in the planning and budgeting chapter (of the Budget Book), which will be the starting point. Then, developing a framework in line with some of those international frameworks that already exist, looking at best practices around the world, and then subsequently getting to some reporting in 2024.

> For the first time this year in our budget book, we are revamping our planning and budgeting chapter, and we are talking about the creation of a formalized ESG framework for York Region.
>
> *Laura Mirabella, York*

All that said, that doesn't mean that we're going to be rushing to issue an ESG-branded bond anytime soon. That's because our council is pretty conscious that we don't want to be out there being accused of the greenwashing. Without having the framework in place, without having really clearly defined ways in which we measure our performance against some of those targets, taking on the increased reporting requirements of an ESG-branded bond, I think is not our wisest choice. Stay tuned possibly in 2024, in terms of our engagement with the market in that way. The starting point will be getting the foundation built, and we're working on that over the next year.

Craig Dyer (Waterloo): I would say we right at the infancy stage and just starting to think about it. We have adopted climate change targets like many municipalities have, declared a climate emergency, and have put together a climate action group within our organization to lead the exercise of achieving those targets over the next 10, 20, and 30 years. That being said, we haven't as of yet spent a significant amount of time looking at an ESG framework. It's something that we will consider in 2023 or 2024, depending on a variety of issues and priorities. When I think about the debt we have issued in the last few years, it has been largely focused on water, wastewater, public transit and new buildings and facilities. Going forward, we will be financing affordable housing projects as we start to implement our housing master plan. So definitely more to come on this front.

We haven't as of yet spent a significant amount of time looking at an ESG framework. It's something that we will consider in 2023 or 2024.

Craig Dyer, Waterloo

Mansoor Khan (RBC): Turning over to you Matt, MFABC discloses their use of proceeds for all its bond issues. Could you provide some context around what MFABC is currently doing on the ESG front? I believe you have been looking at a few options on the disclosure side as well.

Matthew O'Rae (MFABC): As an infrastructure bank, we do not follow PSAB but IFRS accounting so we're continuously monitoring IFRS standards and the prototypes that they have out there for ESG disclosures and financial reporting purposes. We're watching this closely as it evolves since it is ever-changing. We want to make sure that those future disclosures for financial statement purposes are in sync with our sustainable framework and our future impact reporting that we do.

With respect to our framework, we lay out every single dollar that we borrow in advance for investors so that they can see how we're tying it to the UN SDGs and green and social principles at the project level. This project level disclosure is a new addition that we've added over the last few years.   With specific bylaws in place, municipalities are only allowed to spend that money on the project purpose identified. So in our offering circular, we lay that out and then investors can look at it, see exactly how we've mapped it, what projects are being funded and whether it meets their internal requirements if applicable. From here we are developing standard KPIs across the various project categories with local governments in the province. All our members will eventually be required to collect and report those to MFA so that we can aggregate that data and pass it along to investors to continue enhancing our disclosures.

Mansoor Khan (RBC): A big challenge for MFABC has been to obtain standardized KPIs from the borrowing municipalities. How is MFABC tackling this challenge?

Matthew O'Rae (MFABC): I think we're getting there. Our large members, and for certain categories of borrowing like water and sewer projects, for example, the KPI's are already being monitored and collected as they create their business cases and build their projects as many have large teams devoted to sustainability. I think there's a lot of work we can leverage there. We're in the process of hiring a Director of ESG who should be joining us in the new year, and that will allow us to really push forward with even the smallest of local governments who are very resource constrained. The real challenge for some of the smaller local governments is that key figures are not only the head of finance, they're running procurement, and they may also be the engineering department and hence are spread very thin. We're going to identify the KPI data we need and then help them collect that data in an efficient fashion, perhaps creating access to some funding and consulting capacity for KPIs. We're targeting 2024 or 2025 to have some of this in place.

Mansoor Khan (RBC): MFABC also manages money for the municipalities. Can you provide some information on how MFABC manages that process and any key observations there?

Matthew O'Rae (MFABC): Not only are we providing centralized borrowing services, we're also providing centralized pooled investment fund options to help protect and invest reserves at the lowest cost in diversified and well-managed products. We've got a series of pooled investment funds (managed by PH&N) and a series of pooled high interest savings accounts (managed by CIBC, National Bank and Scotia bank) that our members can utilize and match their investment horizon accordingly with the timing of when the reserves are needed.

We lay out every single dollar that we borrow in advance for investors so that they can see how we're tying it to the UN SDGs and green and social principles at the project level.

Matthew O'Rae, MFABC

All of our pooled funds (away from the HISAS) are managed using responsible investment practices and incorporating ESG into the investment process, and some of our members have asked us to focus on low carbon and fossil-fuel-free options to meet their citizen's and council's sustainable investment beliefs. We have created several of these low carbon or fossil fuel free options with our external asset manager over the last couple of years.

Members have also asked to create longer-term investment options for money earmarked for longer dated infrastructure asset to be built in the future. This year we launched a new investment fund, the Diversified Multi-Asset Class (DMAC) fund to meet those longer-term investment needs. It is a low carbon footprint fund that is diversified geographically and by asset class – holding global bonds, global equities and alternatives – and that targets inflation plus 3.5% over 10 years or longer. We are now working on a fossil fuel free version of that same fund to meet the needs of some local governments in BC that have a strict FFF policy requirements for all their investments.

Mansoor Khan (RBC): Heather, City of Toronto has had the most remarkable record as it relates to issuing green and social bonds every year since they set up the program. Toronto was once again able to issue both Green and Social bonds this year. What were your main takeaways from these labelled bond issues this year?

Heather Taylor (Toronto): I am really proud of the fact that we have both green and social under a sustainability framework. I want just to take the opportunity to point out that when we did our social bond, our first social bond was done in the spring of 2020, so right in the throes of COVID. It was really interesting to see the market reaction because at a time where the markets were quite volatile, there was substantial demand. That's what we've seen throughout COVID and we've done annual bonds since then. We did a placement this week, and we did it in a day and the majority of investors were ESG investors. There is a demand, as investors want to place their money in bonds that have outcomes other than just an interest rate of return.

I'm not sure if we can classify what we're seeing as a greenium, but I will say that in the volatile market that we've experienced and having the success of being more than two times oversold with room to grow, that was because of it being a labeled bond. I can say with confidence that would not have happened with a conventional bond. The city's committed to doing this on an annual basis. It's 45% of our total issuance right now. I'd like to see that go up, but we do have a framework that we have to follow. Not all of our assets are going to be able to fall under that framework. We still have roads to build, which may not necessarily fall under that framework. We're very particular, and we fund our projects after the projects are completed, so we have the ability to have projects qualify for that third party attestation. The commitment is there to try and increase the percentage of our total annual borrowing, but it'll take time to get it to become a more substantial piece. I am pleased that within the three years of us doing it, we've reached 45%.

Mansoor Khan (RBC): That certainly is a remarkable record. We were very fortunate to Lead the Green Bond transaction for the City which had books in excess of C$650 million allowing us to upsize the transaction from C$200 to C$300 million. ESG investors accounted for over 90% of the book highlighting the strong demand for these labelled bonds. So congrats on a very successful outing once again!

I would like to thank all our panelists today for taking out the time from their busy schedules to talk about the most pressing topics related to the Canadian municipal sector. We are delighted to have hosted another round of interesting discussions this year and hope to see you all again next year. Thanks once again!

SELECT CANADIAN PUBLIC SECTOR BORROWING PROGRAMS – 2022

The need and appetite for borrowing varies greatly between each Province and organization. To help understand the various key Canadian public sector borrowing programs and their characteristics, below is a comparison breakdown.

	ONTARIO	QUEBEC	ALBERTA	MANITOBA	SASKATCHEWAN	BRITISH COLUMBIA	NFLD & LABRADOR
PREMIER/CEO	Hon. Doug Ford	Hon. François Legault	Hon. Danielle Smith	Hon. Heather Stefanson	Hon. Scott Moe	Hon. Katrine Conroy	Hon. Andrew Furey
FINANCE MINISTER/CFO	Hon. Peter Bethlenfalvy	Hon. Éric Girard	Hon. Travis Toews	Hon. Cameron Friesen	Hon. Donna Harpauer	Hon. Selina Robinson	Hon. Siobhan Coady
CAPITAL/HEADQUARTERS	Toronto	Quebec City	Edmonton	Winnipeg	Regina	Victoria	St. John's
POPULATION ('000S) (1)	15,263	8,751	4,601	1,420	1,205	5,368	529
LARGEST SECTOR CONTRIBUTIONS TO GDP	Real Estate, Manufacturing, Finance	Manufacturing, Real Estate, Health	Oil & Gas, Mining, Real Estate	Real Estate, Manufacturing, Health	Oil & Gas, Mining, Real Estate	Real Estate, Construction, Tech	Oil & Gas, Mining
2022 REAL GDP GROWTH (2)	3.2%	3.5%	5.1%	3.7%	6.4%	3.0%	1.1%
SHARE OF CANADA GDP (%) (3)	38.0%	19.3%	16.3%	3.1%	3.9%	13.3%	1.6%
BORROWING YEAR	Apr-Mar	Apr-Mar	Apr-Mar	Apr-Mar	Apr-Mar	Apr-Mar	Apr-Mar
RATINGS (DBRS/MOODY'S/S&P)	AA(L) / Aa3 / A+	AA(L) / Aa2 / AA-	AA(L) / Aa3 / A+	A(H) / Aa2 / A+	AA(L) / Aa1 / AA	AA(H) / Aaa / AA+	A(L) / A1 / A
% CAD ISSUANCE (4)	86%	93%	100%	88%	32%	97%	100%
RECENT INTERNATIONAL ISSUANCE (4)	USD, GBP	GBP, AUD	n/a	EUR	USD	EUR	n/a
2021/22 BORROWING (C$BN) (4)	41.1	23.8	4.9	4.5	3.5	9.8	1.9
2022/23 BORROWING REQUIREMENT (C$BN) (4)	32.2	25.9	1.3	3.9	1.9	7.1	1.8
REMAINING FUNDING FOR 2022/23 (C$BN) (4)	6.9	9.2	-	1.7	-	1.0	0.4
YOY INCREASE (C$BN)	(8.9)	2.1	(3.6)	(0.6)	(1.6)	(2.7)	(0.1)
ESTIMATED 2023/24 BORROWING (C$BN) (5)	38.4	27.6	0.5	n/a	n/a	16.4	n/a
DOMESTIC TARGET TERMS	5 / 7 / 10 / 30	5 / 7 / 10 / 30	5 / 7 / 10 / 30	5 / 10 / 30	5 / 10 / 30	5 / 7 / 10 / 30	7 / 10 / 30
PUBLIC DEBT O/S (C$BN) (6)	398.2	236.6	94.1	52.2	27.9	74.8	18.1
ACTIVE ULTRA-LONG ISSUERS (7)	n/a	n/a	C$725M	C$750M	$310M	n/a	n/a
MIN. CARVE-OUT SIZE (8)	$600M (5yr) / $500M (10yr) / $400M (30yr)	n/a	$200M	$150M	$100M	n/a	$100M
ACTIVE ESG ISSUANCE PROGRAM	Green Bond Issuer	Green Bond Issuer	n/a	n/a	n/a	n/a	n/a

(1) As of Q4 2022: https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1710000901 (2) RBC Economics: https://royal-bank-of-canada-2124.docs.contently.com/v/hot-provincial-momentum-to-lose-steam1 (3) As of Nov 2022: https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3610040202&pickMembers%5B0%5D=3.1&pickMembers%5B1%5D=2.2&cubeTimeFrame.startYear=2021&referencePeriods=20210101%2C20210101 (4) Source: RBC Capital Markets. Provincials & PSP based on Government Fiscal Year (April 1-March 31); CPP, Canada, CMHC and EDC based on Calendar year (5) Source: Provinces, RBC Capital Markets, figures based on most recent borrowing program (6) Source: Bloomberg (7) Issued within the last three GFY, term >35 years (8) Large order protocol, order placed to one investor * RBC Economics † Based on Jan – Dec Calendar Year

Select Canadian Public Sector Borrowing Programs – 2022 Continued

	NOVA SCOTIA	NEW BRUNSWICK	PEI	CANADA	CMHC	PSP	CPP	EDC
PREMIER/CEO	Hon. Tim Houston	Hon. Blaine Higgs	Hon. Dennis King	Hon. Justin Trudeau	Romy Bowers	Deborah K. Orida	John Graham	Mairead Lavery
FINANCE MINISTER/CFO	Hon. Allan MacMaster	Hon. Ernie Steeves	Hon. D. Mark V. McLane	Hon. Chrystia Freeland	Michel Tremblay	J-F. Bureau	Kristina Fanjoy	Ken Kember
CAPITAL/HEADQUARTERS	Halifax	Fredricton	Charlottetown	Ottawa	Ottawa	Montreal	Toronto	Ottawa
POPULATION ('000S) [1]	1,031	821	173	39,292	n/a	n/a	n/a	n/a
LARGEST SECTOR CONTRIBUTIONS TO GDP	Real Estate, Public Admin, Health	Real Estate, Public Admin, Manufacturing	Real Estate, Public Admin	Real Estate, Manufacturing, Oil & Gas, Mining	n/a	n/a	n/a	n/a
2022 REAL GDP GROWTH [2]	1.9%	1.8%	2.3%	3.3%	n/a	n/a	n/a	n/a
SHARE OF CANADA GDP (%) [3]	2.0%	1.6%	0.3%	n/a	n/a	n/a	n/a	n/a
BORROWING YEAR	Apr-Mar	Apr-Mar	Apr-Mar	Apr-Mar	Jan-Dec	Apr-Mar	Jan-Dec	Jan-Dec
RATINGS (DBRS/MOODY'S/S&P)	A(H) / Aa2 / AA-	A(H) / Aa2 / A+	A / Aa2 / A	AAA / Aaa / AAA	AAA / Aaa / AAA	AAA / Aaa / AAA	AAA / Aaa / AAA	AAA / Aaa / AAA
% CAD ISSUANCE [4]	100%	100%	100%	100%	100%	33%	29%	0%
RECENT INTERNATIONAL ISSUANCE [4]	n/a	n/a	n/a	n/a	n/a	AUD, USD	USD, AUD, EUR, GBP	USD, EUR, GBP, TRY, CNY etc.
2021/22 BORROWING (C$BN) [4]	1.1	1.2	0.2	254.9*	40.0†	5.8	14.5†	8.1†
2022/23 BORROWING REQUIREMENT (C$BN) [4]	1.7	1.3	0.3	190.7*	40.0†	5.0	15.0†	13.3†
REMAINING FUNDING FOR 2022/23 (C$BN) [4]	0.7	-	0.3	46.0*	-	2.8	-	-
YOY INCREASE (C$BN)	0.6	0.1	0.1	(64.2)	-	(0.8)	0.5	5.2
ESTIMATED 2023/24 BORROWING (C$BN) [5]	2.1	n/a	n/a	181.0*	40.0†	5.0-7.0	15.0†	10-12
DOMESTIC TARGET TERMS	5 / 10 / 30	5 / 10 / 30	10 / 30	-	5 / 10	3 / 5 / 7 / 10	3 / 5 / 7 / 10 / 15 / 30	2 / 3 / 5
PUBLIC DEBT O/S (C$BN) [6]	14.3	20.9	2.4	986.1	254.5	17.1	53.6	38.8
ACTIVE ULTRA-LONG ISSUERS [7]	n/a	n/a	n/a	n/a	n/a	n/a	~C$1.53B	n/a
MIN. CARVE-OUT SIZE [8]	n/a	$100M	n/a	n/a	n/a	n/a	n/a	n/a
ACTIVE ESG ISSUANCE PROGRAM	n/a	n/a	n/a	Green Bond Issuer	n/a	Green Bond Issuer	Green Bond Issuer	Green Bond Issuer

SELECT CANADIAN MUNICIPAL ISSUERS

	MONTREAL	MFABC	TORONTO	TRANSLINK
RATINGS	A(H) / Aa2 / AA	Aaa / AAA	Aa1 / AA	Aa2 / AA
TYPICAL ANNUAL BORROWING REQ. (C$MM)	6,50-1,300	1,200-2,000	950-1200	200-650
2022 DEBENTURE FUNDING	C$650 million	C$1.2 billion	C$1.325 billion	C$300 million
TYPICAL # ANNUAL ISSUES	4-5	3-4	4-5	1-2
TYPICAL MATURITIES	10-year 20-year	5-year 10-year	10-year 20-year 30-year	5-year 10-year 30-year
PUBLIC DEBT OUTSTANDING (C$MM)	10,994	9,667	9,666	3,280
CREDIT STRENGTHS	• Exceptional internal liquidity support and strong access to external liquidity for refinancing needs despite high funding owing to capital spending on its infrastructure deficiency • Strong budgetary performance with a proven track record of strong operating surpluses • Modest debt load and a relatively stable interest burden support theexisting maturity profile	• Strong liquidity with current debt reserve fund in excess of $100 million • MFABC has the ability to levy a taxon all taxable land without provincial level government approval • Municipal long term debt of MFABC constitutes joint liabilities of the participating municipalities • Only 25% of sustainable revenues eligible toservice debt costs	• Strong liquidity position with large reserves that allowfor flexibility in accessing capital markets • Broad and diversifiedeconomy which serves as a major global financial centre • Relatively conservative policy of limiting annual debt service charges to 15% of property taxlevy and to 20% of own source revenue • 6th largest government in Canada and 4th largest city in NorthAmerica	• Strategic importance as the main regional transportation provider in BritishColumbia • Access to diversified revenue sources including tax revenues and transitincome • Strong governance and institutional characteristics
REVENUE SOURCE (2021)	Taxes (63%), Services (22%), Transfers (7%), Quota shares from reconstituted municipalities (8%) (1)	Client Interest Payments (58%), Investment Income (36%), Financial Service Fees and Premium Amortizations (6%) (2)	Taxes (Prop., Land Transfer) (37%), Fed/Provincial Transfers (27%), Transit (5%), User Fees (5%) (3)	Taxes (54%), Transit (21%), Fed/Provincial Transfers (12%), Investment Income (3%) (4)
OPERATING BUDGET	C$6.76 billion (1)	~C$399 million (2)	C$14.99 billion (3)	~C$2.2 billion (4)
CAPITAL EXPENDITURES	C$22 billion 10-year capital program (1)	n/a	C$46.6 billion 10-year capital budget and plan (3)	C$587.4 million (4)
EST. POPULATION*	1.76 million	n/a	2.8 million	n/a
OTHER CREDIT CONSIDERATIONS	Largest metropolitan area in Quebec and second largest in Canada	Created by provincial legislation to borrow on behalf of 28 Regional Districts in British Columbia	In 2009, Ontario passed the City of Toronto Act, 2006 (COTA) expanding the City's ability to levy taxes and increase revenues	The only issuing non-corporate transportation authority in Canada

(1) Montreal Budget 2023 (2) MFABC Financial Statement 2022 (page 12 (3) Toronto Operating Budget Report 2022 (page 64, 11) (5) City of Vancouver Draft Budget 2023 (page A-1, B-30, B-74) (6) Waterloo 2022 Final Budget (Page 5) ; 2023 Proposed Operating Budget (Page 5); 2023 Proposed Capital Budget and 2024-2032 Capital Forecast (Page 10) (7) York 2021 Community Report (Page 51); 2022 Budget (Page 6) *Statistics Canada Census Profile 2021 (7) York 2021 Community Report (Page 51); 2022 Budget (Page 6)
*Statistics Canada Census Profile 2021

Select Canadian Municipal Issuers Continued

	VANCOUVER	WATERLOO	YORK
RATINGS	Aaa / AAA	Aaa	Aaa / AAA
TYPICAL ANNUAL BORROWING REQ. (C$MM)	85-120	80-90	300-400
2022 DEBENTURE FUNDING	C$120 million	C$82 million	n/a
TYPICAL # ANNUAL ISSUES	1-2	2	1-2
TYPICAL MATURITIES	10-year	10-year 20-year	10-year
PUBLIC DEBT OUTSTANDING (C$MM)	1,105	789	3,431
CREDIT STRENGTHS	• Exceptional liquidity coupled with high debt affordability • Strong and diverse economy underpinslong-term strength • Stable revenue sources and operational flexibility cushion operating pressures • Strong governance and fiscal management, and supportive institutional framework	• Strong local economu with diverse revenue sources • Steady revenue, COVID related government support and prudent fiscal planning offsets inflation concerns • Excellent management with institutional framework	• Exceptional liquidity& wealth paired with growing cash and reserves • Diversified economy supporting stable tax revenue • Matured institutional governance • Strategic cost control and steady revenue source alongside government funding lift off fiscal pressures
REVENUE SOURCE (2021)	Property Taxes (58%), Utility Fees (20%), Licence & Development Fees (5%), Parking (4%), Grants (4%), Fees (4%) (5)	Taxes (34.7%), Government Transfers (27.5%), User Fees (13.6%) (6)	Taxes (41%), Governmnent Transfers (23%), User Fees & Services (17%), Development Fees (12%) (7)
OPERATING BUDGET	C$1.9 billion (5)	~92.5 million (6)	C$2.7 billion (7)
CAPITAL EXPENDITURES	C$730 million (5)	C$112.7 million (6)	C$9.5 billion 10-year capital plan, C$918 million for 2023 (7)
EST. POPULATION*	2.6 million	0.1 million	1.2 million
OTHER CREDIT CONSIDERATIONS	Strong local economy with access to a growing and broad tax base which has consistently translated into strong operating results	Waterloo has a high likelyhood of receiving extraodinary support from the Province of Ontario in event of possible capital disruption	York has a high likelihood of receiving extraodinary support from the Province of Ontario in event of possible capital disruption

(1) Montreal Budget 2023 (2) MFABC Financial Statement 2022 (page 12 (3) Toronto Operating Budget Report 2022 (page 64, 11) (5) City of Vancouver Draft Budget 2023 (page A-1, B-30, B-74) (6) Waterloo 2022 Final Budget (Page 5) ; 2023 Proposed Operating Budget (Page 5); 2023 Proposed Capital Budget and 2024-2032 Capital Forecast (Page 10) (7) York 2021 Community Report (Page 51); 2022 Budget (Page 6) *Statistics Canada Census Profile 2021 (7) York 2021 Community Report (Page 51); 2022 Budget (Page 6)
*Statistics Canada Census Profile 2021

SELECT RBC-LED TRANSACTIONS IN 2022

Select Transactions for Canadian Government Issuers & Asset Managers

Canada
C$500,000,000
3.245% Ukraine Sovereignty Bond due 2027
AAA/Aaa/AAA
Joint Bookrunner
November 2022

Ontario
C$1,250,000,000
3.60% Senior Notes due 2028
AA(L)/Aa3/A+
Lead
November 2022

Canada Housing Trust
C$4,750,000,000
Dual Tranche CORRA FRN due 2028 & 3.55% Senior Notes due 2032
AAA/Aaa/AAA
Lead
November 2022

Municipal Finance Authority of BC
C$360,000,000
3.30% Senior Notes due 2032
AAA/Aaa/AAA
Joint Bookrunner
September 2022

CPP Investments
A$1,000,000,000
4.45% Senior Notes due 2027
AAA//Aaa/AAA
Joint Bookrunner
August 2022

Saskatchewan Real Growth. Real Opportunity.
US$1,000,000,000
3.25% Senior Notes due 2027
AA(L)/Aa1/AA
Joint Bookrunner
June 2021

British Columbia
C$500,000,000
4.25% Senior Notes due 2053
AA(H)/Aaa/AA+
Lead
May 2022

EDC
US$2,750,000,000
3.00% Senior Notes due 2027
AAA/Aaa/AAA
Joint Bookrunner
May 2022

Ontario
US$2,250,000,000
3.10% Senior Notes due 2027
AA(L)/Aa3/A+
Joint Bookrunner
May 2022

Québec
GBP$750,000,000
2.25% Senior Notes due 2026
AA(L)/Aa2/AA-
Joint Bookrunner
April 2022

Canada
US$3,500,000,000
2.875% Senior Notes due 2025
AAA/Aaa/AAA
Joint Bookrunner
April 2022

Ontario Teachers' Pension Plan
£1,500,000,000
3.00% Senior Notes due 2027
AAA/Aa1/AA+
Joint Bookrunner
April 2022

SELECT RBC-LED TRANSACTIONS IN 2022

Green Bonds and Sustainable Finance

TORONTO
C$300,000,000
4.40% Green Bond
due 2042
AA/Aa1/AA
Joint Bookrunner
November 2022

CDPQ
C$1,250,000,000
3.80% Inaugural CAD Green Bond
due 2027
AAA/Aaa/AAA
Joint Bookrunner
November 2022

ONTARIO TEACHERS' PENSION PLAN
C$1,000,000,000
4.450% Inaugural Green Bond
due 2032
AAA/Aa1/AA+
Joint Bookrunner
November 2022

Ontario
C$1,000,000,000
1.55% Green Bond
Due 2029
AA(L)/Aa3/A+
Joint Bookrunner
October 2022

CPP Investments
C$1,000,000,000
3.0% Green Bond
Due 2028
AAA//Aaa/AAA
Joint Bookrunner
August 2022

Québec
C$1,000,000,000
3.65% Green Bond
Due 2032
AA(L)/Aa2/AA-
Joint Bookrunner
May 2022

Canada
C$5,000,000,000
2.25% Inaugural Green Bond
due 2029
AAA/Aaa/AAA-
Joint Bookrunner
March 2022

PSP
C$1,000,000,000
2.600% Inaugural Green Bond
due 2032
AAA/Aaa/AAA
Joint Bookrunner
February 2022

Maple Offerings

KBN
C$500,000,000
3.80% Green Bond
due 2027
- /Aaa/AAA
Joint Bookrunner
November 2022

ADB
C$700 million
3.80% Gender Bond
due 2025
-/Aaa/AAA/AAA
Joint Bookrunner
August 2022

KFW
C$500,000,000
1.75% Senior Notes
due 2025
AAA/Aaa/AAA
Joint Bookrunner
February 2022

BNG BANK
C$300,000,000
1.8% Sustainable Bond
due 2025
- /Aaa/AAA
Joint Bookrunner
February 2022

THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP
C$1,500,000,000
1.0% Sustainable Bond
due 2027
AAA/Aaa/AAA
Joint Bookrunner
January 2022

rbccm.com