



BANK OF CANADA  
BANQUE DU CANADA

# Assessing the Impact of the Bank of Canada's Government Bond Purchases

Staff Discussion Paper 2024-5 (English)

**Chinara Azizova, Jonathan Witmer, Xu Zhang**

June 2024

## Introduction

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In the wake of the 2008–09 global financial crisis, several central banks introduced large-scale asset purchase programs, commonly referred to as quantitative easing (QE). The goal of these QE programs is to address financial market strains and to provide additional monetary stimulus once policy interest rates are at, or close to, their effective lower bounds. QE has therefore become an important tool used by many central banks around the world to affect monetary conditions once traditional interest rate tools are constrained. Although the Bank of Canada did not employ QE in response to the global financial crisis, QE is nonetheless part of the Bank's framework for conducting monetary policy at low interest rates (Bank of Canada 2015).

In March 2020, the Bank implemented a federal government bond purchase program to address the financial and economic strains caused by the COVID-19 pandemic. Known as the Government of Canada Bond Purchase Program (GBPP), it was introduced as the Bank lowered its policy interest rate to its lower bound of 25 basis points (bps).<sup>1, 2</sup> The program began by purchasing a minimum of \$5 billion Government of Canada (GoC) securities in the secondary market each week. These purchases were financed by increasing the size of settlement balances (known as “reserves” in other jurisdictions).<sup>3</sup> The GBPP's stated goal at the time was “...to address strains in the GoC debt market and to enhance the effectiveness of all other actions taken so far...” (Poloz 2020a). The Bank committed to continuing its purchases “...until the economic recovery is well underway.” As financial strains subsided, the purpose of the GBPP transitioned away from addressing financial strains. Instead, it became a tool to provide “...the necessary degree of monetary policy accommodation required to achieve the inflation target” (Bank of Canada 2020).

The pace of the Bank's QE program decreased as economic conditions improved:

- On October 28, 2020, the Bank recalibrated the QE program to shift purchases toward longer-term bonds and reduced the pace to at least \$4 billion a week.
- On April 21, 2021, the Bank adjusted the weekly net purchases of GoC bonds to a target of \$3 billion. This reduction in the amount of incremental stimulus being added each week reflected the progress made in Canada's economic recovery.
- On July 14, 2021, the target pace was adjusted to \$2 billion per week.
- On October 27, 2021, the Bank ended quantitative easing and entered a reinvestment phase. During this phase, the purchase of GoC bonds was solely to replace maturing bonds so that the Bank's holdings remained relatively stable over time.
- On April 13, 2022, the Bank announced that it was ending its reinvestment phase and would begin the process of quantitative tightening (QT).

By the end of the reinvestment phase, the GBPP had purchased approximately \$340 billion of government bonds with a weighted average maturity of about six years. To put the pace and scale of the Bank's asset purchase programs in perspective, [Chart 1](#) compares the Bank's balance sheet as a percentage of gross domestic product (GDP) with that of the Federal Reserve, the European Central Bank and the Bank of England. The chart highlights four notable observations:

- Unlike the other central banks, the Bank of Canada did not engage in QE following the global financial crisis. As a result, its balance sheet was much smaller than the balance sheets of the other central banks when the pandemic began.
- The pace of the Bank's asset purchases following the onset of the pandemic was faster than the pace of balance sheet expansion in other central banks, normalizing by GDP. However, although the pace was faster at the beginning of the pandemic, the total amount of the Bank's balance sheet expansion during the pandemic was smaller than that of the other central banks. In addition, much of the fast pace of the increase was due to lending operations; when we exclude those operations, the pace is similar.
- At its peak, the Bank's balance sheet, as a percentage of GDP, was about half the size of the comparable measure for the other central banks.
- The Bank's balance sheet has declined more than the others' since its peak, largely for two reasons:
  - Several assets the Bank purchased (including GBPP and non-GBPP assets) were short-term in nature and therefore matured soon after QT began.
  - The Bank wound down its lending operations, while those of the other central banks are ongoing.

# Could all-to-all trading improve liquidity in the Government of Canada bond market?

Staff Analytical Note 2024-17 (English)

**Jabir Sandhu, Rishi Vala**

July 2024

## Introduction

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Government bond markets are typically considered to be among the most-liquid fixed-income markets. Even so, liquidity conditions in government bond markets can deteriorate sharply when a sudden imbalance occurs between the demand for and supply of liquidity. In fact, in recent extreme episodes of market turmoil like the onset of the COVID-19 crisis in March 2020 and the UK gilt crisis in September 2022, market liquidity deteriorated so much that central banks intervened by buying government bonds to stabilize and restore orderly functioning of these markets.

Some policy-makers, academics and financial market participants believe that one reason market liquidity of government bonds is vulnerable to periods of market turmoil is because the structure of these markets is centred around dealers. In this type of market structure, dealers use their own balance sheets or act as a broker to match offsetting transactions between their different clients. In periods of turmoil, however, client demands for liquidity can surge, and trading can become more one-sided. In other words, many clients trade bonds in the same direction, by, for example, buying government bonds in a flight to safety or selling government bonds in a dash for cash.

Dealers may charge a higher fee to intermediate such trades as compensation for the additional risks that they bear on their own balance sheets when market conditions are volatile.<sup>1</sup> In extreme cases, dealers may stop intermediating completely, either due to constraints on their balance sheets or their inability to hedge risks. This could prevent transactions from occurring among clients who would otherwise be willing to transact with one another.

Adopting an all-to-all market structure is one of several proposals for improving the resilience of government bond markets during periods of turmoil (Duffie 2023). In this structure, market participants would be able to transact directly with each other on an electronic trading platform and therefore avoid any limits in dealers' ability to intermedicate. An all-to-all structure could also attract new market participants through increased transparency of executable and executed prices on all-to-all trading platforms. This increased transparency could improve the bargaining power of market participants and reduce barriers to entry that may exist in a dealer-intermediated structure. Supporters of all-to-all trading argue that a more diverse set of market participants could improve market liquidity. This is because it could increase the likelihood and amount of bond transactions occurring in opposite directions, even during periods of turmoil. These offsetting transactions could reduce pressures on market liquidity.

To examine these considerations of all-to-all trading, we use granular transaction-level data to assess how much client-to-client trading could be possible in the Government of Canada (GoC) bond market. We find, on average, almost half of the GoC bond transactions of dealers' clients could potentially be offset with those of other clients over the trading day. This share is stable over time, including during the COVID-19 crisis in March 2020. This demonstrates that clients were indeed transacting in the opposite direction of other clients' transactions in a period of market turmoil. For GoC bond futures—instruments that are like GoC bonds but trade on an all-to-all platform—we find that almost all clients' transactions can be offset by those of other clients and that this high offsetting share is also stable.

So would all-to-all trading support liquidity in the GoC bond market? The answer remains unclear. On the one hand, our results shed some light on the potential for clients' transactions to offset each other. On the other hand, our methodology overlooks important considerations for the sake of simplicity. For instance, we do not account for differences in the prices when offsetting client transactions or for the influence that client-dealer relationships may have on trading behaviours. These considerations make it challenging to understand whether our estimated extent of client offsetting would take place if GoC bonds were traded entirely on an all-to-all platform. In addition, several other aspects of all-to-all trading merit further investigation.

## All-to-all trading presents a range of risks and considerations

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# How foreign central banks can affect liquidity in the Government of Canada bond market

Staff Analytical Note 2024-26 (English)

**Patrick Aldridge, Jabir Sandhu, Sofia Tchamova**

December 2024

## Introduction

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Imagine it's Friday night and you're out for dinner at a busy restaurant with some friends. After an hour, you've all finished eating but decide to stay at your table for a bit longer to continue catching up.

Remaining at your table for longer presents a trade-off. Of course, you and your friends are allowed to stay at your table after your meal. In fact, you may even order drinks or desserts, generating more revenue for the restaurant. But staying reduces the number of tables available for other customers. This can lead to lengthier wait times or some guests potentially being turned away.

In a sense, financial assets are like tables at a restaurant. When investors hold their assets for long periods—often referred to as buy-and-hold investors—fewer of these assets are available for other investors. This can potentially worsen liquidity in secondary markets.

We examine the trading behaviour of foreign central banks and its potential impact on liquidity in the Government of Canada (GoC) bond market.<sup>1</sup> Our analysis builds on recent projects from staff at the Bank of Canada aimed at better understanding how asset managers can affect liquidity in Canadian fixed-income markets ([Sandhu and Vala 2023](#); [Bédard-Pagé et al. 2021](#)). The Bank monitors liquidity in secondary markets and has different tools to support liquidity in certain circumstances. This is because liquid and well-functioning fixed-income markets are important for the transmission of monetary policy and the stability of the financial system.

We estimate that foreign central banks own at least 12% to 21% of the float of GoC bonds, which is the amount of GoC bonds outstanding minus the Bank's holdings. Foreign central banks also tend to hold their GoC bonds for longer than other market participants do.

This buy-and-hold behaviour can promote market stability because foreign central banks' trading decisions may be less sensitive to market conditions than those of other types of asset managers. In fact, during the peak period of market illiquidity in March 2020, foreign central banks had negligible trading flows, while many other types of asset managers sold GoC bonds, contributing to liquidity strains ([Sandhu and Vala 2023](#)).

In contrast, buy-and-hold behaviour could reduce the availability of GoC bonds in secondary markets, potentially reducing liquidity. We find that foreign central banks lend out only a small share of their bonds in the repo market—another sign of buy-and-hold behaviour. We also find that higher levels of foreign central bank holdings of GoC bonds are related to illiquidity. This is because their holdings have a positive and statistically significant relationship with borrowing volumes from primary dealers in the Bank's Securities Repo Operation (SRO), a program designed to support liquidity in securities-financing markets.

While our results show that foreign central banks' behaviour could promote illiquidity, that is only one part of the picture. Foreign central banks' participation in the GoC bond market offers many benefits beyond promoting stability in periods of turmoil. For example, their steady demand for GoC bonds can reduce the cost of funding for the federal government ([Lane 2019](#); [Pomorski, Rivadeneyra and Wolfe 2014](#)).<sup>2</sup>

## Central banks manage portfolios of foreign exchange reserves

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Central banks—and, to a lesser extent, other authorities like governments—are portfolio managers for foreign exchange reserves. Foreign exchange reserves are assets held in currencies other than a country's domestic currency. These reserves allow central banks to intervene in their currency markets, potentially helping:

- promote a country's exports
- reduce capital outflows
- manage market volatility

Reserves can also provide a source of liquidity that can be leveraged to meet international financial obligations or to provide foreign currency to domestic institutions, among other reasons.

# Introduction

The 2025 edition of FP Bonds – Government, the tenth to be published by Grey House Publishing Canada, lists outstanding publicly and privately held debt securities, together with their features and provisions, issued by the Government of Canada, the provinces and selected federal and provincial agencies. All issues and amounts outstanding are as of Mar. 31, 2025, unless otherwise indicated. A Call Table appears at the end of each section listing the next call date and price for all callable bonds issued by the federal/provincial government or one of its agencies. An additional table lists all outstanding Eurobonds (Euro debt). Economic data on Canada and the provinces are provided as well as notes on Canadian taxation.

The formats for the three tables are as follows:

## Main Body

- Cpn (%) – coupon rate (see Legend)
- Maturity date
- Frequency – frequency of interest payments (see Legend)
- Series
- CUSIP – CUSIP number
- Type – type of debt issued (see Legend)
- Year – year(s) of issue
- Amount (000) – total amount issued in original currency (see Legend)
- Outstanding Amount (000) - amount outstanding at Mar. 31, 2025, unless otherwise indicated
- Ref. Notes – numbered references which appear after the Call Table

## Call Table

- Coupon Rate (%) – coupon rate (see Legend)
- Maturity date
- Next Call Date – date of next redemption
- Next Call Price – price at next redemption period
- Call Flag – flag indicating frequency of redemption
  - A (annual) – callable by the issuer on the day indicated and annually thereafter
  - C (continuous) – callable by issuer on or after Next Call Date
  - D (discrete) – callable by issuer on the day indicated
  - P (payment dates) – callable on day indicated plus subsequent interest payment dates

## Eurobonds Table

- Cpn (%) – coupon rate (see Legend)
- Maturity date
- Frequency – frequency of interest payments (see Legend)
- Series
- Year – year(s) of issue
- Amount (000) – total amount issued in original currency (see Legend)
- Outstanding Amount (000) - amount outstanding at Mar. 31, 2025, unless otherwise indicated

Bond Ratings by Dominion Bond Rating Service are included on each issuer's title page.

Newly added front matter for this edition includes a look at the Bank of Canada's use of quantitative easing (QE) during the COVID-19 pandemic, a theoretical look at adopting an all-to-all market structure to improve the resilience of government bond

# Canadian Taxation

The following information, compiled from legislation, regulations, Department of Finance announcements and other published sources, is designed to give an outline of the various tax levies in Canada that, as of May 31, 2002 affect investments in debt obligations of or guaranteed by the Canadian Federal or Provincial Governments. Because the statutory provisions relating to the taxation of interest income and capital gains in Canada contain many special rules, all of which cannot be covered in this outline, the publisher and the author make no representation as to the accuracy or completeness of any of the following comments. Taxpayers are urged to consult their own tax advisors for advice relating to their own circumstances.

## Government of Canada

### Income Tax

#### (a) Residents of Canada

Under the federal Income Tax Act, in computing income for tax purposes, residents of Canada (individuals and corporations) must include all amounts received or receivable in respect of interest depending on the method regularly used by the taxpayer in calculating profit. Notwithstanding this general rule, taxpayers are required to include accrued interest annually on debt obligations to the extent not otherwise included in income.

Issuers of registered bonds or debentures are required to provide each year to the holders of their debt obligations a form (T-5 Supplementary) reporting the total payments of interest for that year or total interest accrued to the applicable anniversary date, as the case may be.

When a debt obligation is transferred, the transferor is required to include in income the interest accrued to the date of transfer and the transferee is allowed a corresponding deduction to the extent that such interest was otherwise included in the transferee's income.

One-half of capital gains from the sale of property, including securities, must be included in income of Canadian residents. One-half of realized capital losses may be deducted from the taxable portion of capital gains. There is provision for applying allowable capital losses against taxable capital gains of previous and subsequent taxation years. As a general rule, the gain realized by an investor on the maturity of a publicly traded interest bearing debt obligation purchased at a discount is a capital gain.

Investment dealers and financial institutions are required to recognize accrued gains and losses annually on their portfolio investments .

Discounts on interest bearing debt obligations issued by tax exempt entities, governments or other public bodies or non-residents not carrying on business in Canada will be income in the hands of the first Canadian resident non-exempt holder of such obligations if the effective yield exceeds the rate of interest by more than one-third in the case of obligations issued after June 18, 1971 and if the rate of interest is less than 5% in the case of obligations issued after December 20, 1960 and before June 19, 1971.

The Income Tax Regulations deem interest to accrue on non-interest bearing debt

# Canada

**Prime Minister: Mark Carney, Liberal Party of Canada**

**Capital City: Ottawa**

**Area: 9,984,670 sq. kilometres**

**Visit these Web sites:**

Government of Canada: [www.canada.gc.ca](http://www.canada.gc.ca)

Export Development Canada: [www.edc.ca](http://www.edc.ca)

## DBRS Bond Rating at February 28, 2025 ... AAA

	<b>2024</b>	<b>2023</b>
GDP, by inc. & expend. (at market).....	\$2,282,475,000,000	\$2,375,770,000,000
Employed (Dec.).....	20,917,400	20,324,900
Unemployed (Dec.).....	1,505,500	1,243,800
Average weekly earnings (Dec.).....	\$1,291.17	\$1,211.79
December consumer price index (2002=100).....	161.2	158.3
Building permits.....	\$143,796,370,000	\$132,200,383,000
Merchandise exports.....	\$779,014,300,000	\$768,272,100,000
Merchandise imports.....	\$786,164,000,000	\$770,401,700,000
Retail sales.....	\$803,366,671,000	\$794,404,142,000
Farm cash receipts.....	\$97,309,923	\$98,576,880
Population (est. July 1).....	41,288,599	40,097,761
Index of gross domestic product at market prices (2017=100).....	126.7	122.9
Raw materials price index (excl. crude energy products) (annual avg., 2020=100).....	140.1	135.8
Crude energy products price index (annual avg., 2020=100).....	140.2	145.8
Industrial product price index, manufacturing (annual avg., 2020=100).....	126.7	125.7

FP Bonds — Government 2025									
DIRECT DEBT									
March 31, 2025									
Cpn %	Maturity	Freq	Series	CUSIP	Type	Issued		Outstanding	Ref.
						Year	Amount (000)	Amount (000)	Note
<b>GOVERNMENT OF CANADA</b>									
1.500	2025.04.01	S		135087N34	BD	2022	\$12,000,000	\$11,875,000	
2.875	2025.04.28	S		135087N75	BD	2022	US\$3,500,000	US\$3,500,000	
3.750	2025.05.01	S		135087Q31	BD	2023	\$15,250,000	\$15,250,000	
9.000	2025.06.01	S	A76	135087VH4	BD	'94-'96	\$8,900,000	\$2,133,858	
2.250	2025.06.01	S	D507	135087D50	BD	'14-'15	\$13,100,000	\$12,900,000	
3.500	2025.08.01	S		135087Q64	BD	2023	\$19,000,000	\$11,597,000	
0.500	2025.09.01	S	K940	135087K94	BD	2020	\$47,500,000	\$47,422,000	
3.000	2025.10.01	S		135087P24	BD	2022	\$10,000,000	\$10,000,000	
4.500	2025.11.01	S		135087Q80	BD	2023	\$19,750,000	\$19,175,000	
4.500	2026.02.01	S		135087R22	BD	'23-'24	\$23,000,000	\$22,250,000	
0.250	2026.03.01	S	L518	135087L51	BD	'20-'21	\$34,000,000	\$33,800,000	
3.000	2026.04.01	S		135087P81	BD	2023	\$10,000,000	\$10,000,000	
4.000	2026.05.01	S		135087R55	BD	2024	\$26,000,000	\$25,200,000	
0.750	2026.05.19	S		427028AB1	BD	2021	US\$3,500,000	US\$3,500,000	
1.500	2026.06.01	S	E679	135087E67	BD	'15-'16	\$13,500,000	\$13,472,000	
4.000	2026.08.01	S		135087R97	BD	2024	\$22,000,000	\$21,050,000	
1.000	2026.09.01	S	L930	135087L93	BD	2021	\$23,000,000	\$22,533,000	
3.250	2026.11.01	S		135087S39	BD	2024	\$21,000,000	\$21,500,000	
4.250	2026.12.01	S	VS05	135087VS0	BD	'95-'98	\$5,250,000	\$5,250,000	1
3.000	2027.02.01	S		135087S54	BD	'24-'25	\$27,500,000	\$27,500,000	
1.250	2027.03.01	S		135087M84	BD	'21-'22	\$17,000,000	\$17,000,000	
2.750	2027.05.01	S		135087S88	BD	2025	\$16,500,000	\$28,500,000	
1.000	2027.06.01	S	F825	135087F82	BD	'16-'17	\$15,000,000	\$14,740,000	
8.000	2027.06.01	S	VW17	135087VW1	BD	'96-'97	\$9,600,000	\$3,620,841	
3.245	2027.08.24	S		135087P73	BD	2022	\$500,000	\$500,000	2
2.750	2027.09.01	S		135087N83	BD	2022	\$16,000,000	\$16,000,000	
3.500	2028.03.01	S		135087P57	BD	'22-'23	\$15,000,000	\$15,000,000	
3.750	2028.04.26	S		135087Q56	BD	2023	US\$4,000,000	US\$4,000,000	
2.000	2028.06.01	S	H235	135087H23	BD	'17-'18	\$13,500,000	\$13,500,000	
3.250	2028.09.01	S		135087Q49	BD	2023	\$20,000,000	\$20,000,000	
4.000	2029.03.01	S		135087Q98	BD	'23-'24	\$27,000,000	\$27,000,000	
4.625	2029.04.30	S		43358BAA1	BD	2024	US\$3,000,000	US\$3,000,000	
2.250	2029.06.01	S	J397	135087J39	BD	'18-'19	\$12,300,000	\$12,300,000	
5.750	2029.06.01	S	WL43	135087WL4	BD	'98-'01	\$13,900,000	\$10,598,959	
3.500	2029.09.01	S		135087R89	BD	2024	\$30,000,000	\$30,000,000	
2.250	2029.12.01	S		135087N67	BD	2022	\$5,000,000	\$5,000,000	3
2.750	2030.03.01	S		135087S47	BD	'24-'25	\$33,000,000	\$33,000,000	
4.000	2030.03.18	S		43358BAB9	BD	2025	US\$3,500,000	US\$3,500,000	
1.250	2030.06.01	S	K379	135087K37	BD	'19-'20	\$44,200,000	\$44,200,000	
0.500	2030.12.01	S	L443	135087L44	BD	'20-'21	\$40,000,000	\$40,000,000	
1.500	2031.06.01	S	M276	135087M27	BD	2021	\$42,000,000	\$42,000,000	
1.500	2031.12.01	S		135087N26	BD	'21-'22	\$32,000,000	\$32,000,000	
4.000	2031.12.01	S	WV25	135087WV2	BD	'99-'03	\$5,800,000	\$5,800,000	1
3.000	2032.03.01	S		135087S96	BD	2025	\$2,000,000	\$2,000,000	3

# Alberta

**Premier: Danielle Smith (United Conservative Party)**

**Capital City: Edmonton**

**Area: 661,848 sq. kilometres**

**Visit these Web sites:**

Province of Alberta: [www.alberta.ca](http://www.alberta.ca)

Alberta Capital Finance Authority: [www.acfa.gov.ab.ca](http://www.acfa.gov.ab.ca)

## DBRS Bond Rating at September 13, 2024 ... AA

	<b>2024</b>	<b>2023</b>
Employed.....	2,572,700	2,502,600
Unemployment rate (%).....	6.7	6.3
Average weekly earnings (Dec.).....	\$1,340.03	\$1,291.41
Building permits.....	\$18,844,906,000	\$15,772,620,000
Retail sales.....	\$103,824,845,000	\$102,122,841,000
Population (est. July 1).....	4,888,723	4,695,290
December consumer price index (2002=100).....	169.7	165.6
Sales tax (GST).....	5%	5%

**DIRECT DEBT**  
March 31, 2025

Cpn %	Maturity	Freq	Series	CUSIP	Type	Issued		Outstanding	Ref.
						Year	Amount (000)	Amount (000)	Note
<b>PROVINCE OF ALBERTA</b>									
0.500	2025.04.16	A			NT	2020	€1,100,000	€1,100,000	
0.625	2025.04.18	A			NT	2018	€1,500,000	€1,500,000	
1.000	2025.05.20	S		013051EK9	BD	2020	US\$2,250,000	US\$2,250,000	
2.350	2025.06.01	S	DJ	013051DQ7	DB	'15-'20	\$3,700,000	\$3,700,000	
0.625	2026.01.16	A			NT	2019	€1,250,000	€1,250,000	
4.300	2026.06.01	S		01306ZCP4	NT	2011	\$30,000	\$30,000	
2.200	2026.06.01	S		013051DT1	NT	'16-'20	\$3,700,000	\$3,700,000	
2.050	2026.08.17	S	PAGM06	01306GAC7	NT	2016	US\$1,000,000	US\$1,000,000	
3.100	2026.12.14	S			NT	'16-'18	A\$505,000	A\$505,000	
2.550	2027.06.01	S		013051DW4	NT	'17-'20	\$5,700,000	\$5,700,000	
3.300	2028.03.15	S		013051EA1	BD	2018	US\$1,250,000	US\$1,250,000	
3.600	2028.04.11	S			NT	'17-'19	A\$460,000	A\$460,000	
0.250	2028.04.20	A			NT	2020	SFr260,000	SFr260,000	
2.900	2028.12.01	S		013051EB9	DB	'18-'19	\$3,300,000	\$3,300,000	
0.375	2029.02.07	A			MN	2019	SFr325,000	SFr325,000	
1.403	2029.02.20	A			NT	2019	SKr2,500,000	SKr2,500,000	
4.100	2029.06.01	S		013051EU7	NT	2024	\$1,000,000	\$1,000,000	
4.500	2029.06.26	S		013051EV5	BD	2024	US\$1,500,000	US\$1,500,000	
2.900	2029.09.20	S		01306ZCV1	NT	'12-'20	\$2,062,700	\$2,062,700	
2.050	2030.06.01	S		013051EG8	DB	'19-'20	\$8,100,000	\$8,100,000	
1.300	2030.07.22	S		013051EM5	DB	2020	US\$2,000,000	US\$2,000,000	
2.400	2030.10.02	S			MN	2020	A\$170,000	A\$170,000	
3.500	2031.06.01	S		01306ZDF5	NT	2014	\$1,230,000	\$1,230,000	
1.650	2031.06.01	S		013051EP8	BD	2021	\$3,500,000	\$3,500,000	
4.150	2033.06.01	S		013051ER4	BD	'22-'24	\$2,750,000	\$2,750,000	
3.900	2033.12.01	S		01306ZDC2	NT	'13-'21	\$1,815,000	\$1,815,000	
4.500	2034.01.24	S		013051ET0	BD	2024	US\$1,250,000	US\$1,250,000	
5.200	2034.05.15	S			NT	2024	A\$1,100,000	A\$1,100,000	
3.125	2034.10.16	A			NT	2024	€1,500,000	€1,500,000	
3.950	2035.06.01	S		013051EW3	NT	'24-'25	\$1,400,000	\$1,400,000	
2.010	2036.02.19	S			MN	2021	A\$200,000	A\$200,000	
4.500	2040.12.01	S		013051DB0	BD	2010	\$600,000	\$600,000	
1.782	2040.12.03	A			NT	'15-'16	€202,000	€202,000	
3.225	2041.09.16	S			NT	2021	NZ\$128,000	NZ\$128,000	
3.450	2043.12.01	S		013051DK0	NT	'13-'15	\$2,500,000	\$2,500,000	
1.150	2043.12.01	A			NT	'16-'17	€435,000	€435,000	
0.925	2045.05.08	A			NT	2020	€70,000	€70,000	
2.473	2046.02.16	S			MN	2021	A\$100,000	A\$100,000	
3.300	2046.12.01	S		013051DS3	BD	'15-'17	\$5,200,000	\$5,200,000	
3.050	2048.12.01	S		013051DY0	NT	'17-'18	\$6,900,000	\$6,900,000	
1.413	2050.03.31	A			MN	2020	€30,000	€30,000	
1.500	2050.04.07	A			MN	2020	€90,000	€90,000	
3.100	2050.06.01	S		013051ED5	NT	'18-'21	\$8,920,000	\$8,920,000	
2.070	2050.12.09	S		013051EN3	NT	2020	US\$39,650	US\$39,650	

## EURO BONDS

March 31, 2025

Cpn %	Maturity	Freq	Series	Issued		Outstanding
				Year	Amount (000)	Amount (000)
<b>CPPIB CAPITAL INC.</b>						
F.R.	2025.04.04	Q	47	2022	US\$1,500,000	US\$1,500,000
6.000	2025.06.07	A	58	2023	£1,000,000	£1,000,000
4.375	2026.03.02	A	56	2023	£750,000	£750,000
F.R.	2026.03.11	Q	40	2021	US\$750,000	US\$750,000
F.R.	2026.06.15	Q	37	2021	£750,000	£750,000
F.R.	2026.07.27	Q	66	2024	US\$500,000	US\$500,000
0.250	2027.04.06	A	19	2020	€1,000,000	€1,000,000
4.500	2027.07.22	A	63	2024	£600,000	£600,000
2.750	2027.11.02	S	4	2017	US\$1,000,000	US\$1,000,000
4.250	2028.07.20	S	59	2023	US\$1,500,000	US\$1,500,000
0.875	2029.02.06	A	12	2019	€1,000,000	€1,000,000
3.125	2029.06.11	A	65	2024	€1,000,000	€1,000,000
2.000	2029.11.01	S	15	2019	US\$1,000,000	US\$1,000,000
1.125	2029.12.14	A	23	2020	£750,000	£750,000
0.050	2031.02.24	A	31	2021	€1,000,000	€1,000,000
2.875	2032.01.30	A	69	2025	€1,250,000	€1,250,000
1.500	2033.03.04	A	6	2018	€1,000,000	€1,000,000
0.750	2037.02.02	A	46	2022	€1,000,000	€1,000,000
0.250	2041.01.18	A	28	2021	€1,000,000	€1,000,000
2.414	2041.02.25	S		2021	A\$150,000	A\$150,000
2.790	2041.03.12	S	33	2021	A\$120,000	A\$120,000
0.750	2049.07.15	A	13	2019	€1,000,000	€1,000,000
2.580	2051.02.23	S	30	2021	A\$160,000	A\$160,000
1.625	2071.10.22	A	43	2021	£900,000	£900,000
<b>PROVINCE OF ALBERTA</b>						
0.500	2025.04.16	A		2020	€1,100,000	€1,100,000
0.625	2025.04.18	A		2018	€1,500,000	€1,500,000
0.625	2026.01.16	A		2019	€1,250,000	€1,250,000
2.050	2026.08.17	S	PAGM06	2016	US\$1,000,000	US\$1,000,000
0.250	2028.04.20	A		2020	SFr260,000	SFr260,000
0.375	2029.02.07	A		2019	SFr325,000	SFr325,000
1.403	2029.02.20	A		2019	SKr2,500,000	SKr2,500,000
3.125	2034.10.16	A		2024	€1,500,000	€1,500,000
1.782	2040.12.03	A		'15-'16	€202,000	€202,000
3.225	2041.09.16	S		2021	NZ\$128,000	NZ\$128,000
1.150	2043.12.01	A		'16-'17	€435,000	€435,000
0.925	2045.05.08	A		2020	€70,000	€70,000
1.413	2050.03.31	A		2020	€30,000	€30,000
1.500	2050.04.07	A		2020	€90,000	€90,000
<b>PROVINCE OF BRITISH COLUMBIA</b>						
0.875	2025.10.08	A	BCEURO-2	2015	€500,000	€500,000
4.500	2029.06.18	A	BCGBP-02	2024	£500,000	£500,000
2.500	2030.04.18	A	BCSER-7	2010	SFr100,000	SFr100,000