

Pricing Supplement to Short Form Base Shelf Prospectus dated March 25, 2022, the Prospectus Supplement thereto dated March 28, 2022, as supplemented November 11, 2022 and March 2, 2023 and the Prospectus Supplement thereto dated March 28, 2022, as supplemented November 11, 2022 and March 2, 2023

No securities regulatory authority has expressed an opinion about these securities and it is an offence to claim otherwise.

This pricing supplement together with the short form base shelf prospectus dated March 25, 2022, the prospectus supplement dated March 28, 2022 and the prospectus supplement dated March 28, 2022, to which it relates, as amended or supplemented, and each document incorporated by reference into such prospectus, constitutes a public offering of these securities only in those jurisdictions where they may be lawfully offered for sale and therein only by persons permitted to sell such securities.

The securities to be issued hereunder have not been, and will not be, registered under the United States Securities Act of 1933, as amended, and, subject to certain exceptions, may not be offered, sold or delivered, directly or indirectly, in the United States of America or for the account or benefit of U.S. persons.

March 23, 2023



**Royal Bank of Canada
Senior Note Program
Equity Linked Securities
Maximum \$20,000,000 (200,000 Debt Securities)
RBC LiONS® Canadian Equity Barrier Booster® Securities (CAD), Series 13
Due April 11, 2029
Non-Principal Protected Securities**

Royal Bank of Canada (the “**Bank**”) is offering up to \$20,000,000 of RBC LiONS® Canadian Equity Barrier Booster® Securities (CAD), Series 13 (which we refer to as the “**Debt Securities**”) designed for investors seeking an investment product with exposure to the common shares of eight Canadian-based financial institutions listed in Appendix A and who are prepared to assume the risks associated with such an investment. Payment at maturity on the Debt Securities will be based on the price performance of the common shares of eight Canadian-based financial institutions listed in Appendix A. In the case of positive price performance where the Percentage Change (defined herein) is greater than or equal to 100.00%, payment at maturity on the Debt Securities will include full participation in the Percentage Change. In the case of price performance where the Percentage Change is greater than or equal to 0.00% and less than 100.00%, payment at maturity on the Debt Securities will include a Booster Amount (defined herein). In the case of a negative price performance, if the Final Portfolio Value (defined herein) is above the Protection Barrier Value (defined herein), then the original investment will be fully protected against losses at or above the Protection Barrier Value. In the case of a negative price performance where the Final Portfolio Value is below the Protection Barrier Value, then some, or substantially all, of the Principal Amount (defined herein) invested could be lost at maturity. See “Suitability for Investment” in this pricing supplement (the “**pricing supplement**”).

The Portfolio (defined herein) is notional only, meaning that the Underlying Securities (defined herein) in the Portfolio will be used solely as a reference to calculate the amount payable on the Debt Securities at maturity. Holders of Debt Securities do not have an ownership interest or other interest (including, without limitation, redemption rights (if any), voting rights or rights to receive dividends or other distributions) in the shares in the Portfolio and will only have a right against the Bank to be paid any amounts due under the Debt Securities. All actions (e.g., purchases, sales and liquidations, etc.) taken in connection with the Portfolio are notional actions only.

The initial estimated value of the Debt Securities as of March 20, 2023 was \$94.33 per Debt Security, which is less than the price to the public and is not an indication of the actual profit to the Bank or its affiliates. The actual value of the Debt Securities at any time will reflect many factors, cannot be predicted with accuracy, and may be less than this amount. We describe our determination of the initial estimated value in more detail below. See “Risk Factors” and “Preparation of Initial Estimated Value”.

The Debt Securities are described in this pricing supplement delivered together with our short form base shelf prospectus dated March 25, 2022 (the “**base shelf prospectus**”), the prospectus supplement establishing our Senior Note Program dated March 28, 2022, as supplemented November 11, 2022 and March 2, 2023 (the “**program supplement**”) and a prospectus supplement which generally describes equity, unit and debt linked securities that we may offer under our Senior Note Program dated March 28, 2022, as supplemented November 11, 2022 and March 2, 2023 (the “**product supplement**”).

The Debt Securities are not fixed income securities and are not designed to be alternatives to fixed income or money market instruments. The Debt Securities are structured products that possess downside risk.

The Debt Securities will not constitute deposits insured under the Canada Deposit Insurance Corporation Act.

An investment in the Debt Securities involves risks. An investment in the Debt Securities is not the same as a direct investment in the securities that comprise the Portfolio and investors have no rights with respect to the securities in the Portfolio. The Debt Securities are considered to be “specified derivatives” under applicable Canadian securities laws. If you purchase Debt Securities, you will be exposed to fluctuations in interest rates and changes in the Portfolio Value (defined herein), among other factors. Price changes may be volatile and an investment in the Debt Securities may be considered to be speculative. Since the Debt Securities are not principal protected and the Principal Amount will be at risk, you could lose substantially all of your investment. See “Risk Factors”.

Price: \$100 Per Debt Security
Minimum Subscription: \$5,000 (50 Debt Securities)

	<u>Price to public</u>	<u>Selling Commissions and Dealer's fee⁽¹⁾</u>	<u>Net proceeds to the Bank</u>
Per Debt Security	\$100.00	\$3.00	\$97.00
Total ⁽²⁾	\$20,000,000	\$600,000	\$19,400,000

⁽¹⁾ A commission of 3.00% of the Principal Amount of Debt Securities issued under this offering will be paid to the Dealers (defined below) for further payment to representatives, including representatives employed by the Dealers, whose clients purchase the Debt Securities. An agency fee will also be paid, from the Bank's own funds, to Wellington-Altus Private Wealth Inc. in an amount up to 0.15% of the Principal Amount of the Debt Securities issued under this offering for acting as independent agent.

⁽²⁾ Reflects the maximum offering size of the Debt Securities. **There is no minimum amount of funds that must be raised under this offering. This means that the issuer could complete this offering after raising only a small proportion of the offering amount set out above.**

The Debt Securities are offered severally by RBC Dominion Securities Inc. ("**RBC DS**") and Wellington-Altus Private Wealth Inc. (collectively, the "**Dealers**") as agents under a dealer agreement dated March 28, 2022, as amended or supplemented from time to time. **RBC DS is our wholly owned subsidiary. Consequently, we are a related and connected issuer of RBC DS within the meaning of applicable securities legislation.** See "Dealers" in this pricing supplement and "Plan of Distribution" in the program supplement.

The Debt Securities will not be listed on any stock exchange. Debt Securities may be resold using the Fundserv network at a price determined at the time of sale by the Calculation Agent (defined herein), which price may be lower than the Principal Amount of such Debt Securities. The Debt Securities will also be subject to specified early trading charges, depending on when the Debt Securities are sold. There is no assurance that a secondary market for the Debt Securities will develop or be sustained. See "Secondary Market for Securities", "Description of the Securities - Calculation Agent" and "Risk Factors" in the program supplement and "Secondary Market" in this pricing supplement.

Bank Trademarks

Lion & Globe symbol and RBC LiONS® are registered trademarks of Royal Bank of Canada. Booster® is a registered trademark of Royal Bank of Canada.

Prospectus for Debt Securities

Debt Securities described in this pricing supplement will be issued under our Senior Note Program and will be unsecured, unsubordinated debt obligations. The Debt Securities are Senior Debt Securities (as defined in the base shelf prospectus referred to below) and are described in four separate documents: (1) the base shelf prospectus, (2) the program supplement, (3) the product supplement, and (4) this pricing supplement, all of which collectively constitute the “prospectus” for the Debt Securities. See “Prospectus for Securities” in the program supplement.

Documents Incorporated by Reference

This pricing supplement is deemed to be incorporated by reference into the base shelf prospectus solely for the purpose of our Senior Note Program and the Debt Securities issued hereunder. Other documents are also incorporated or deemed to be incorporated by reference into the base shelf prospectus and reference should be made to the base shelf prospectus for full particulars.

Marketing Materials

The version of the summary for the Debt Securities that was filed with the securities commissions or similar regulatory authorities in each of the provinces and territories of Canada as “marketing materials” (as defined in National Instrument 41-101 – *General Prospectus Requirements*) on March 23, 2023 is deemed to be incorporated by reference into the base shelf prospectus solely for the purpose of our Senior Note Program and the Debt Securities issued hereunder. Any version of marketing materials filed with the securities commission or similar regulatory authority in each of the provinces and territories of Canada in connection with this offering after the date hereof but prior to the termination of the distribution of the Debt Securities under this pricing supplement (including any amendments to, or an amended version of, the marketing materials) is deemed to be incorporated by reference herein and in the base shelf prospectus solely for the purpose of our Senior Note Program and the Debt Securities issued hereunder. Any such marketing materials are not part of this pricing supplement or the base shelf prospectus to the extent that the contents of the marketing materials have been modified or superseded by a statement contained in an amendment to this pricing supplement.

Caution Regarding Forward-Looking Statements

From time to time, we make written or oral forward-looking statements within the meaning of certain securities laws, including the “safe harbour” provisions of the United States Private Securities Litigation Reform Act of 1995 and any applicable Canadian securities legislation. We may make forward-looking statements in the base shelf prospectus and in the documents incorporated by reference therein, in the program supplement, in the product supplement, in this pricing supplement, in other filings with Canadian regulators or the United States Securities and Exchange Commission, in other reports to shareholders, and in other communications. Forward-looking statements in, or incorporated by reference in, this prospectus include, but are not limited to, statements relating to our financial performance objectives, vision and strategic goals, the Economic, market and regulatory review and outlook section of our management’s discussion and analysis for the three month period ended January 31, 2023 (the “**Q1 2023 Management’s Discussion and Analysis**”) and in the Economic, market and regulatory review and outlook section of our management’s discussion and analysis for the year ended October 31, 2022 (the “**2022 Management’s Discussion and Analysis**”) for Canadian, U.S., U.K., European and global economies, the regulatory environment in which we operate, the impact from rising interest rates, the expected closing of the transaction involving CACEIS and the risk environment including our credit risk, market risk, liquidity and funding risk, and includes our President and Chief Executive Officer’s statements. The forward-looking information contained in, or incorporated by reference in, this prospectus is presented for the purpose of assisting the holders of our securities and financial analysts in understanding our financial position and results of operations as at and for the periods ended on the dates presented, as well as our financial performance objectives, vision and strategic goals, and may not be appropriate for other purposes. Forward-looking statements are typically identified by words such as “believe”, “expect”, “foresee”, “forecast”, “anticipate”, “intend”, “estimate”, “goal”, “commit”, “target”, “objective”, “plan” and “project” and similar expressions of future or conditional verbs such as “will”, “may”, “might”, “should”, “could” or “would”.

By their very nature, forward-looking statements require us to make assumptions and are subject to inherent risks and uncertainties, which give rise to the possibility that our predictions, forecasts, projections, expectations or conclusions will not prove to be accurate, that our assumptions may not be correct, that our financial performance, environmental & social or other objectives, vision and strategic goals will not be achieved and that our actual results may differ materially from such predictions, forecasts, projections, expectations or conclusions. We caution readers not to place undue reliance on these statements as a number of risk factors could cause our actual results to differ materially from the expectations expressed in such forward-looking statements. These factors – many of which are beyond our control and the effects of which can be difficult to predict – include: credit, market, liquidity and funding, insurance, operational, regulatory compliance (which could lead to us being subject to various legal and regulatory proceedings, the potential outcome of which could include regulatory restrictions, penalties and fines), strategic, reputation, competitive, model, legal and regulatory environment, systemic risks and other risks discussed in the risk sections of the 2022 Management’s Discussion and Analysis and the Risk management section of the Q1

2023 Management's Discussion and Analysis incorporated by reference herein; including business and economic conditions in the geographic regions in which we operate, Canadian housing and household indebtedness, information technology and cyber risks, geopolitical uncertainty, environmental and social risk (including climate change), digital disruption and innovation, privacy, data and third-party related risks, regulatory changes, culture and conduct risks, the effects of changes in government fiscal, monetary and other policies, tax risk and transparency, and the emergence of widespread health emergencies or public health crises such as pandemics and epidemics, including the COVID-19 pandemic and its impact on the global economy, financial market conditions and our business operations, and financial results, condition and objectives. Additional factors that could cause actual results to differ materially from the expectations in such forward-looking statements can be found in the risk sections of the 2022 Management's Discussion and Analysis.

We caution that the foregoing list of risk factors is not exhaustive and other factors could also adversely affect our results. When relying on our forward-looking statements to make decisions with respect to us or the Debt Securities, investors and others should carefully consider the foregoing factors and other uncertainties and potential events. Material economic assumptions underlying the forward-looking statements contained in this prospectus are set out in the Economic, market and regulatory review and outlook section and for each business segment under the Strategic priorities and Outlook sections in our 2022 Management's Discussion and Analysis, as updated by the Economic, market and regulatory review and outlook section of the Q1 2023 Management's Discussion and Analysis. Except as required by law, we do not undertake to update any forward-looking statement, whether written or oral, that may be made from time to time by us or on our behalf.

Additional information about these and other factors can be found in the risk sections of the 2022 Management's Discussion and Analysis and in the Risk management section of the Q1 2023 Management's Discussion and Analysis incorporated by reference in this prospectus.

Royal Bank of Canada
Senior Note Program
Equity Linked Securities
Maximum \$20,000,000 (200,000 Debt Securities)
RBC LiONS® Canadian Equity Barrier Booster® Securities (CAD), Series 13
Due April 11, 2029
Non-Principal Protected Securities

Issuer:	Royal Bank of Canada (the “ Bank ”)
Dealers:	RBC Dominion Securities Inc. (“RBC DS”) and Wellington-Altus Private Wealth Inc. Wellington-Altus Private Wealth Inc., a dealer to which we are neither related nor connected, participated in the due diligence activities performed by the Dealers in respect of the offering, but did not participate in the structuring and pricing of the offering or the calculation of the initial estimated value of the Debt Securities. See “Plan of Distribution” in the program supplement.
Issue:	RBC LiONS® Canadian Equity Barrier Booster® Securities (CAD), Series 13 due April 11, 2029.
Fundserv Code:	RBC4543
Issue Price:	The Debt Securities will be issued at a price equal to their Principal Amount (defined below).
Minimum Investment:	50 Debt Securities or \$5,000.
Denomination:	Debt Securities are issuable in denominations of \$100 (the “ Principal Amount ”) and in minimum increments of \$100.
Issue Date:	April 13, 2023 or such other date as may be agreed to by the Bank and the Dealers.
Issue Size:	The maximum issue size will be an aggregate amount of \$20,000,000.
Maturity Date:	April 11, 2029 (approximately a six-year term). See “Description of the Equity, Unit and Debt Linked Securities – Maturity Date and Amount Payable” in the product supplement.
Objective of the Debt Securities:	The Debt Securities have been designed to provide investors with the potential to earn a return based on the price performance of the Portfolio (defined below) where the investors are willing and can afford to risk substantially all of the Principal Amount of their investment because they believe that the Final Portfolio Value (defined below) will be equal to or greater than the Protection Barrier Value (defined below) on the Final Valuation Date (defined below).
Principal at Risk Securities:	All but 1% of the Principal Amount of the Debt Securities is fully exposed. You could lose substantially all of your investment. See “Description of the Equity, Unit and Debt Linked Securities – Principal at Risk Securities” and “Risk Factors” in the product supplement.
Underlying Securities:	The return of the Debt Securities will reflect the price performance (excluding any dividends and other distributions) over the six-year term of a notional portfolio (the “ Portfolio ”) of the common shares (the “ Underlying Securities ”) and each an “ Underlying Security ”), of Manulife Financial Corporation, The Bank of Nova Scotia, Bank of Montreal, Power Corporation of Canada, The

Toronto-Dominion Bank, Canadian Imperial Bank of Commerce, Great-West Lifeco Inc., and Sun Life Financial Inc. (the “**Underlying Security Issuers**” and each an “**Underlying Security Issuer**”). The Underlying Securities will be equally weighted in the Portfolio (the “**Portfolio Weight**”) at the Initial Valuation Date (defined below). Such weightings will not be adjusted or rebalanced during the term of the Debt Securities.

The Debt Securities do not represent an interest in the Underlying Securities, and holders will have no right or entitlement to the Underlying Securities, including, without limitation, redemption rights (if any), voting rights or rights to receive dividends and other distributions paid on any of such Underlying Securities (the annual dividend yield on the Portfolio as of March 20, 2023 was 5.3869%, representing an aggregate dividend yield of approximately 37.000% compounded annually over the six-year term, on the assumption that the dividend yield remains constant). There is no requirement for the Bank to hold any interest in the Underlying Security Issuers.

This pricing supplement has been prepared for the sole purpose of assisting prospective investors in making an investment decision with respect to the Debt Securities. This pricing supplement relates only to the Debt Securities offered hereby and does not relate to the Underlying Securities and/or the Underlying Security Issuers. Additional information relating to the Underlying Securities and/or the Underlying Security Issuers can be obtained from the public disclosure filed by the Underlying Security Issuers on www.sedar.com or other publicly available sources. The Bank and the Dealers have not verified the accuracy or completeness of any information pertaining to the Underlying Security Issuers or determined if there has been any omission by any Underlying Security Issuer to disclose any facts, information or events which may have occurred prior to or subsequent to the date as of which any information has been furnished by any Underlying Security Issuer which may affect the significance or accuracy of such information. Neither the Bank nor any Dealer makes any representation that such publicly available documents or any other publicly available information regarding any Underlying Securities or Underlying Security Issuer are accurate or complete. See Appendix A for information concerning the market price and certain other information regarding the common shares of each of the Underlying Security Issuers on the Toronto Stock Exchange (the “**TSX**”). Prospective investors should independently investigate the Underlying Security Issuers and decide whether an investment in the Debt Securities is appropriate. None of the Underlying Security Issuers have participated in the preparation of this pricing supplement and the Debt Securities are not in any way sponsored, endorsed, sold or promoted by any of the Underlying Security Issuers. See “Description of the Equity, Unit and Debt Linked Securities – Underlying Securities and Underlying Security Issuers” in the product supplement.

The decision to offer the Debt Securities pursuant to this supplement will have been taken independently of any decision by the Bank to purchase the Underlying Securities in the primary or secondary market. Except with respect to any hedging activities the Bank engages with respect to its obligations under the Debt Securities, any decision by the Bank to purchase the Underlying Securities in the primary or in the secondary market will have been taken independently of the Bank’s offering of the Debt Securities pursuant to this supplement. The employees responsible for our Senior Note Program are not privy to any information regarding either primary or secondary market purchases of the Underlying Securities made by the Bank in connection with any primary distribution made by the Underlying Security Issuers.

Portfolio Value:

The “**Portfolio Value**” for the Portfolio on any Exchange Day (defined in the product supplement) is calculated by: (a) multiplying (i) the official closing price

of each Underlying Security, as announced by the TSX, on such Exchange Day by (ii) the corresponding Number of Underlying Securities (defined below) for such Underlying Security; and (b) aggregating the resulting products.

Number of Underlying Securities:

The “**Number of Underlying Securities**” for each Underlying Security is calculated by: (i) multiplying the Portfolio Weight for such Underlying Security by the aggregate Principal Amount of Debt Securities issued under this offering; and (ii) dividing the resulting product by the official closing price of such Underlying Security, as announced by the TSX, on the Initial Valuation Date.

Once determined, the Number of Underlying Securities for each Underlying Security will not be adjusted during the term of the Debt Securities, except in certain special circumstances. See “Extraordinary Events” below.

Payment at Maturity:

Payment at maturity will be based on the price performance (or “**Percentage Change**”) of the Portfolio measured from the Initial Portfolio Value (defined below) to the Final Portfolio Value. The amount payable (the “**Redemption Amount**”) on each \$100 Principal Amount per Debt Security at maturity will be determined as follows:

If the Percentage Change is **greater than or equal to 100.00%**, then the Redemption Amount will be:

$$\text{▪ } \$100 + (\$100 \times \text{Percentage Change})$$

If the Percentage Change is **zero or positive and less than 100.00%**, then the Redemption Amount will be:

$$\text{▪ } \$100 + (\$100 \times \text{Booster Amount})$$

If the Percentage Change is **negative, declining by 20.00% or less** (i.e., the Final Portfolio Value is equal to or above the Protection Barrier Value), then the Redemption Amount will be \$100, as the original investment will be fully protected against losses at or above the Protection Barrier Value.

If the Percentage Change is **negative, declining by more than 20.00%** (i.e., the Final Portfolio Value is below the Protection Barrier Value) then the Redemption Amount will be reduced by the amount of any decline and the Redemption Amount will be:

$$\text{▪ } \$100 + (\$100 \times \text{Percentage Change})$$

As a result, the Redemption Amount will not be determinable before the Final Valuation Date (defined below). All dollar amounts will be rounded to the nearest whole cent. The minimum payment at maturity is \$1.00 per Debt Security.

Percentage Change:

The “**Percentage Change**” is the amount, expressed as a percentage rounded to two decimal places, equal to:

$$\frac{(\text{Final Portfolio Value} - \text{Initial Portfolio Value})}{\text{Initial Portfolio Value}}$$

See “Description of the Equity, Unit and Debt Linked Securities – Maturity Date and Amount Payable” in the product supplement.

Protection Barrier Value:

The “**Protection Barrier Value**” is 80.00% of the Initial Portfolio Value.

Booster Amount:

100.00%, applied only if the Percentage Change is greater than or equal to 0% and less than 100.00%.

Initial Portfolio Value:	The “ Initial Portfolio Value ” is the Portfolio Value on April 6, 2023 (the “ Initial Valuation Date ”).
Final Portfolio Value:	The “ Final Portfolio Value ” is the Portfolio Value on April 6, 2029 (the “ Final Valuation Date ”).
Sample Calculations:	See Appendix B to this pricing supplement for sample calculations of the Redemption Amount.
Issuer Credit Rating:	Moody’s: Aa1 Standard & Poor’s: AA- DBRS: AA The Debt Securities themselves have not been and will not be rated. See “Description of the Securities - Ratings” in the program supplement.
Extraordinary Events:	Determination of the Portfolio Value, including the Initial Portfolio Value and the Final Portfolio Value, and the Redemption Amount may be postponed, or the Bank can accelerate determination of the Final Portfolio Value and the Redemption Amount and repay the Debt Securities in full prior to their maturity, in certain circumstances. If an Extraordinary Event occurs then the Calculation Agent may, but is not required to, make such adjustments to any payment or other term of the Debt Securities as it determines to be appropriate, acting in good faith, to account for the economic effect of such event on the Debt Securities and determine the effective date of any such adjustment. See “Description of the Securities – Special Circumstances” in the program supplement and “Description of the Equity, Unit and Debt Linked Securities – Extraordinary Events” in the product supplement.
Summary of Fees and Expenses:	A commission of 3.00% of the Principal Amount of Debt Securities issued under this offering will be paid to the Dealers for further payment to representatives, including representatives employed by the Dealers, whose clients purchase the Debt Securities. An agency fee will also be paid, from the Bank’s own funds, to Wellington-Altus Private Wealth Inc. in an amount up to 0.15% of the Principal Amount of the Debt Securities issued under this offering for acting as independent agent. The selling commissions and the agency fee are indirectly borne by holders of the Debt Securities. There are no fees directly payable by a holder of Debt Securities. See “Description of the Securities – Summary of Fees and Expenses” in the program supplement. An early trading charge may also apply. See “Secondary Market” below.
Eligibility for Investment:	Eligible for RRSPs, RRIFs, RESPs, RDSPs, FHSAs, DPSPs and TFSA’s. See “Eligibility for Investment” in Appendix D, including the summary of the “prohibited investment” rule.
Risk Factors:	You should carefully consider all the information set out in this prospectus for any Debt Securities in which you are considering investing. In particular, you should evaluate the risks described under “Risk Factors” in each of the base shelf prospectus and the product supplement, as well as the risks described below. The return on the Debt Securities is unknown and subject to many variables, including interest rate fluctuations and changes in the Portfolio Value. You should independently determine, with your own advisors, whether an investment in the Debt Securities is suitable for you having regard to your own investment objectives and expectations.

Lack of Diversification

The Underlying Security Issuers are Canadian-based financial institutions listed

in Appendix A and are therefore concentrated in this industry sector. This means that the performance of the Debt Securities will be tied entirely to the success of this industry sector. Canadian-based financial institutions are subject to risks that are specific to their industry sector and which may therefore result in the performance of the Debt Securities being substantially different, and potentially substantially worse, than other industry sectors or the securities/equity markets generally.

The Initial Estimated Value of the Debt Securities Is Less than the Price to the Public and May not Reflect the Secondary Market Price, if any, of the Debt Securities

The initial estimated value set forth on the cover page of this pricing supplement does not represent a minimum price at which the Bank, RBC DS or any of our affiliates would be willing to purchase the Debt Securities in any secondary market (if any exists) at any time. If you attempt to sell the Debt Securities prior to maturity, their market value may be lower than the initial estimated value and the price you paid for them. This is due to, among other things, changes in the Portfolio Value and the inclusion in the price to the public of the selling commissions and the agency fee, as well as an amount retained by the Bank to compensate it for the creation, issuance and maintenance of the Debt Securities (which may or may not also include any costs of its hedging obligations thereunder). These factors, together with various market and economic factors over the term of the Debt Securities, could reduce the price at which you may be able to sell the Debt Securities in any secondary market and will affect the value of the Debt Securities in complex and unpredictable ways. Even if there is no change in market conditions or any other relevant factors, the price, if any, at which you may be able to sell your Debt Securities prior to maturity may be less than your original purchase price. The Debt Securities are not designed to be short-term trading instruments. Accordingly, you should be able and willing to hold your Debt Securities to maturity.

The Initial Estimated Value of the Debt Securities Is an Estimate Only, Calculated as of the Time the Terms of the Debt Securities Were Set

The initial estimated value of the Debt Securities is based on the value of the Bank's obligation to make the payments on the Debt Securities. The return on the Debt Securities can be replicated by purchasing and selling a combination of financial instruments, such as call options and put options. The fair value of the financial instrument components that would replicate the return on the Debt Securities is equal to the fair value of the Debt Securities. The Bank's estimate is based on a variety of assumptions, which may include expectations as to dividends, interest rates, the Bank's internal funding rates and volatility, and the term to maturity of the Debt Securities. The Bank's internal funding rates may differ from the market rates for the Bank's conventional debt securities. These assumptions are based on certain forecasts about future events, which may prove to be incorrect. Other entities may value the Debt Securities or similar securities at a price that is significantly different than the Bank does. The value of the Debt Securities at any time after the date of this pricing supplement will vary based on many factors, including changes in market conditions, and cannot be predicted with accuracy. As a result, the actual value you would receive if you sold the Debt Securities in the secondary market, if any, should be expected to differ materially from the initial estimated value of the Debt Securities.

**Preparation of Initial
Estimated Value:**

The Debt Securities are debt securities of the Bank, the return on which is linked to the price performance of the Underlying Securities. In order to satisfy the Bank's payment obligations under the Debt Securities, the Bank may choose to enter into certain hedging arrangements (which may include call options, put

options or other derivatives) on the Issue Date which may or may not be with RBC DS or one of our other subsidiaries. The terms of these hedging arrangements, if any, take into account a number of factors, including the Bank's creditworthiness, interest rate movements, the volatility of the Underlying Securities, and the term to maturity of the Debt Securities.

The price of the Debt Securities to the public also reflects the selling commissions and the agency fee, as well as an amount retained by the Bank to compensate it for the creation, issuance and maintenance of the Debt Securities (which may or may not also include any costs of its hedging obligations thereunder). The initial estimated value for the Debt Securities shown on the cover page will therefore be less than their public offering price. See "Risk Factors – The Initial Estimated Value of the Debt Securities Is Less than the Price to the Public and May not Reflect the Secondary Market Price, if any, of the Debt Securities" above.

The Bank has adopted written policies and procedures for determining the fair value of Debt Securities issued by it pursuant to the Senior Note Program. These policies and procedures include: (a) methodologies used for valuing each type of financial instrument component that can be used in combination to replicate the return of the Debt Securities; (b) the methods by which the Bank will review and test valuations to assess the quality of the prices obtained as well as the general functioning of the valuation process; and (c) how to deal with conflicts of interest.

Suitability for Investment:

You should consult with your advisors regarding the suitability of an investment in the Debt Securities. The Debt Securities may be suitable for:

- investors seeking an investment product with exposure to the common shares of eight Canadian-based financial institutions
- investors who are willing and can afford to risk substantially all of their investment
- investors looking for the potential to earn an enhanced return over fixed-rate investments and who are prepared to assume the risks associated with an investment linked to the price performance of the Portfolio
- investors with an investment horizon equal to the term to maturity of the Debt Securities who are prepared to hold the Debt Securities until maturity
- investors who do not need or expect to receive regular payments of return over the term of the Debt Securities

Book-entry Only Securities:

The Debt Securities will be Fundserv Securities (defined in the program supplement) and will be issued through the "book-entry-only system". See "Description of the Securities – Global Securities" and "– Legal Ownership" in the program supplement.

Listing:

The Debt Securities will not be listed on any stock exchange. See "Risk Factors" in the product supplement.

Secondary Market:

Debt Securities may be purchased through dealers and other firms that facilitate purchase and related settlement using the Fundserv network. Debt Securities may be resold using the Fundserv network at a sale price equal to the price posted on Fundserv as of the close of business on the Exchange Day on which the order is placed, as determined by and posted to Fundserv by the Calculation Agent, which sale price may be lower than the Principal Amount of such Debt Securities, less an early trading charge as specified below. See "Risk Factors – The Initial Estimated Value of the Debt Securities Is Less than the Price to the Public and May not Reflect the Secondary Market Price, if any, of the Debt Securities" above.

If a Debt Security is sold within the first 270 days from the Issue Date, the proceeds from the sale of the Debt Securities will be reduced by an early trading charge (“**Early Trading Charge**”) equal to a percentage of the Principal Amount determined as set out below.

<u>If Sold Within the Following No. of Days from Issue Date</u>	<u>Early Trading Charge (% of Principal Amount)</u>
1 to 60 days	3.50%
61 to 90 days	3.00%
91 to 120 days	2.25%
121 to 180 days	1.50%
181 to 270 days	0.75%
Thereafter	Nil

Other factors will affect the price at which you may be able to sell the Debt Securities prior to maturity. For example, factors similar to those that may impact the value of zero coupon bonds and options may have an impact on the price of the Debt Securities. Such factors include: (i) the Underlying Security prices; (ii) the time remaining to the Maturity Date; (iii) the volatility of the Underlying Securities; (iv) interest rates; (v) dividends or other income paid on the Underlying Securities and (vi) changes in our credit rating. The table below illustrates the potential impact of each factor generally on the Debt Securities. The effect of any one factor may be offset or magnified by the effect of another factor. It is possible in certain limited circumstances that a particular factor may have a contrary effect with the passage of time.

Factors affecting the price of the Debt Securities

<u>Change of Factor</u>	<u>Debt Securities</u>
Increase in Portfolio Value	↑
Decrease in time to maturity	↑
Increase in volatility	↓
Increase in Canadian interest rates	↓
Increase in dividend/income yield	↓
Increase in Bank’s credit rating	↑

Information regarding the Portfolio Value and the daily closing price for the Debt Securities may be accessed at www.rbcnotes.com. There is no assurance that a secondary market for the Debt Securities will develop or be sustained. See “Secondary Market for Securities” in the program supplement.

Fiscal Agent: RBC DS. See “Description of the Securities – Fiscal Agency, Calculation Agency and Fundserv Depository Agreement” in the program supplement.

Calculation Agent: RBC DS. See “Description of the Securities – Calculation Agent” in the program supplement and “Risk Factors” in the product supplement.

Tax: An initial purchaser of Debt Securities who acquires Debt Securities from the Bank on the Issue Date and who, at all relevant times, for purposes of the *Income Tax Act* (Canada), is an individual (other than a trust), is a resident of Canada, deals at arm’s length with and is not affiliated with the Bank, and acquires and holds the Debt Securities as capital property (a “**Resident Holder**”) will be required to include in computing income for the taxation year in which the Maturity Date (or earlier repayment in full) occurs the amount, if any, by which

the amount payable at maturity (or earlier repayment in full) exceeds the Principal Amount of the Debt Securities, except to the extent that such amount has been previously included in the income of the Resident Holder. Furthermore, a Resident Holder will be required to include in income, on a transfer of a Debt Security occurring before it matures, any excess of the price for which it was so transferred by the Resident Holder over its outstanding principal amount at the time of the transfer. If the Resident Holder receives an amount that is less than the adjusted cost base of the Debt Securities, the Resident Holder will realize a capital loss equal to the shortfall. See “Certain Canadian Tax Considerations” in Appendix D. **Potential purchasers of Debt Securities should consult with their own tax advisors having regard to their particular circumstances.**

APPENDIX A

Certain Information Concerning the Common Shares of each of the Underlying Security Issuers on the Toronto Stock Exchange

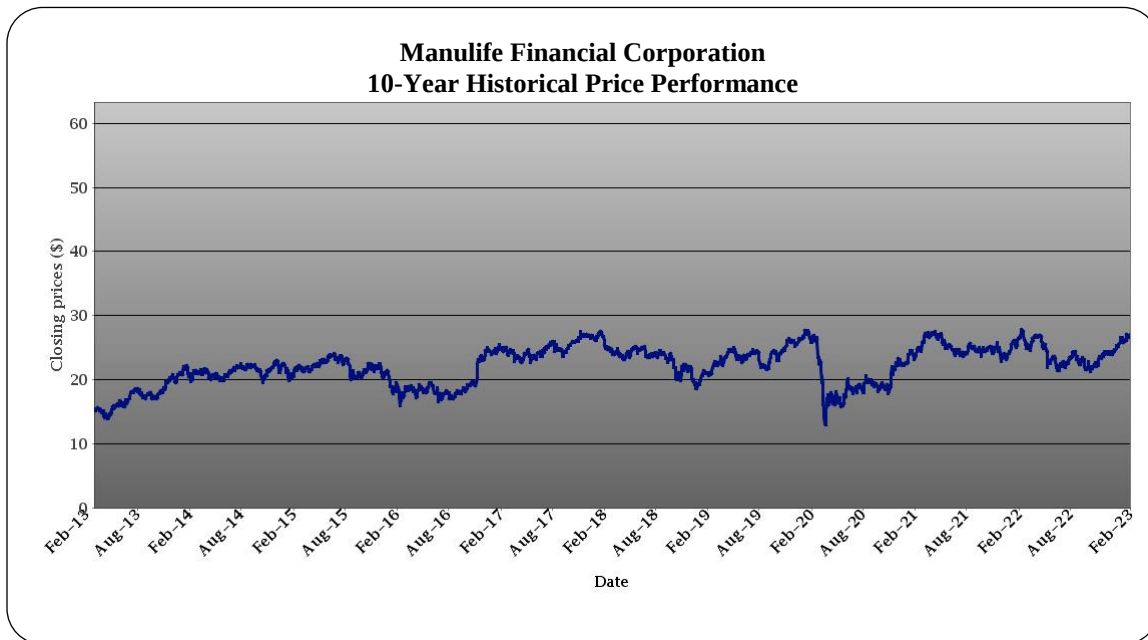
Company Name	Symbol	Portfolio Weight	Closing Prices (as of March 20, 2023)
Manulife Financial Corporation	MFC	12.50%	24.42
The Bank of Nova Scotia	BNS	12.50%	65.76
Bank of Montreal	BMO	12.50%	117.16
Power Corporation of Canada	POW	12.50%	34.43
The Toronto-Dominion Bank	TD	12.50%	77.75
Canadian Imperial Bank of Commerce	CM	12.50%	56.78
Great-West Lifeco Inc.	GWO	12.50%	34.55
Sun Life Financial Inc.	SLF	12.50%	61.56

Manulife Financial Corporation

Manulife Financial Corporation provides financial protection products and investment management services to individuals, families, businesses, and groups. Manulife Financial Corporation conducts operations in Canada, the United States, and Asia, as well as reinsurance operations on a global basis. Manulife Financial Corporation offers products such as annuities, pension products, life insurance, health insurance, and mutual funds. Manulife Financial Corporation's common shares are listed on the TSX under the symbol "MFC". The annual dividend yield of the common shares of Manulife Financial Corporation as of March 20, 2023 was 5.55%.

Historical Price Performance

The following chart sets forth the historical price performance of the common shares of Manulife Financial Corporation for the period from February 28, 2013 to February 28, 2023. Historical price performance does not take into account distributions or dividends paid on the Underlying Securities.



Historical price performance of the common shares of Manulife Financial Corporation will not necessarily predict future price performance of the common shares of Manulife Financial Corporation or the Debt Securities. The source of the data displayed in this chart is Bloomberg L.P. and its accuracy cannot be guaranteed.

Historical annual percentage change of the common shares of Manulife Financial Corporation										
Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Percentage change (%)	55.14	5.82	-6.49	15.28	9.66	-26.13	36.09	-14.07	6.45	0.17

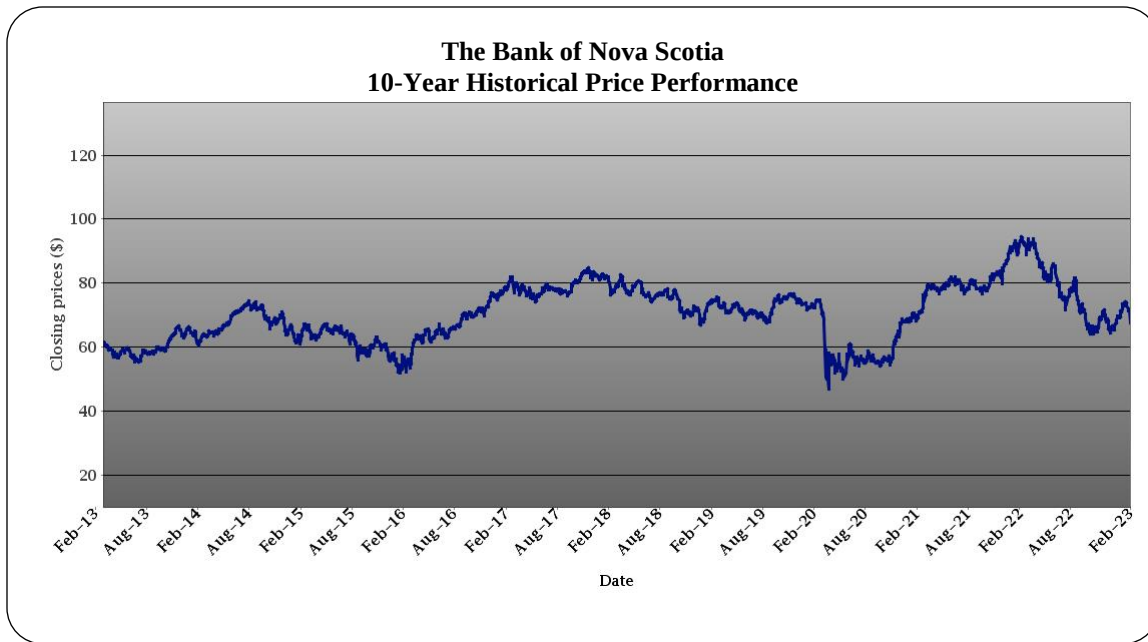
Source: Bloomberg L.P.: Measures annualized period as of December 31 of the previous year.

The Bank of Nova Scotia

The Bank of Nova Scotia provides retail, commercial, international, corporate, investment and private banking services and products. The company's common shares are listed on the TSX under the symbol "BNS". The annual dividend yield of the common shares of The Bank of Nova Scotia as of March 20, 2023 was 6.22%.

Historical Price Performance

The following chart sets forth the historical price performance of the common shares of The Bank of Nova Scotia for the period from February 28, 2013 to February 28, 2023. Historical price performance does not take into account distributions or dividends paid on the Underlying Securities.



Historical price performance of the common shares of The Bank of Nova Scotia will not necessarily predict future price performance of the common shares of The Bank of Nova Scotia or the Debt Securities. The source of the data displayed in this chart is Bloomberg L.P. and its accuracy cannot be guaranteed.

Historical annual percentage change of the common shares of The Bank of Nova Scotia										
Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Percentage change (%)	15.61	-0.18	-15.59	33.57	8.51	-16.11	7.79	-6.20	30.16	-25.92

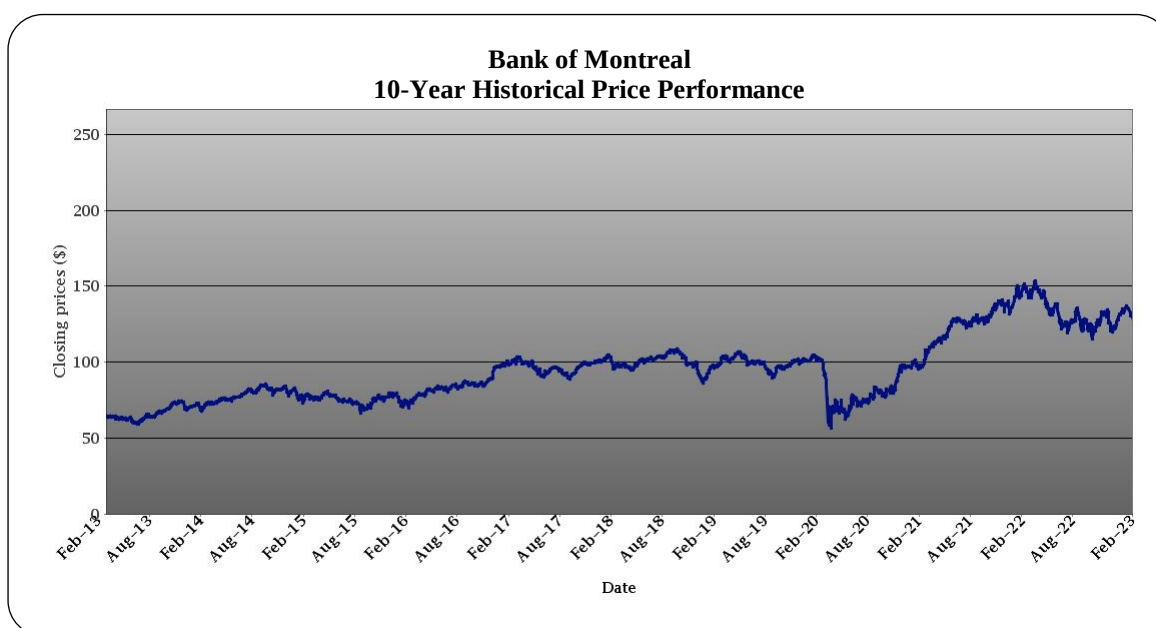
Source: Bloomberg L.P.: Measures annualized period as of December 31 of the previous year.

Bank of Montreal

Bank of Montreal, doing business as BMO Financial Group, is a Canadian chartered bank which operates throughout the world. Bank of Montreal offers commercial, corporate, governmental, international, personal banking, and trust services. Bank of Montreal also offers full brokerage, underwriting, investment, and advisory services. The company's common shares are listed on the TSX under the symbol "BMO". The annual dividend yield of the common shares of Bank of Montreal as of March 20, 2023 was 4.73%.

Historical Price Performance

The following chart sets forth the historical price of the common shares of Bank of Montreal for the period from February 28, 2013 to February 28, 2023. Historical price performance does not take into account distributions or dividends paid on the Underlying Securities.



Historical price performance of the common shares of Bank of Montreal will not necessarily predict future price performance of the common shares of Bank of Montreal or the Debt Securities. The source of the data displayed in this chart is Bloomberg L.P. and its accuracy cannot be guaranteed.

Historical annual percentage change of the common shares of Bank of Montreal										
Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Percentage change (%)	16.35	16.06	-4.99	23.68	4.16	-11.33	12.84	-3.84	40.72	-9.93

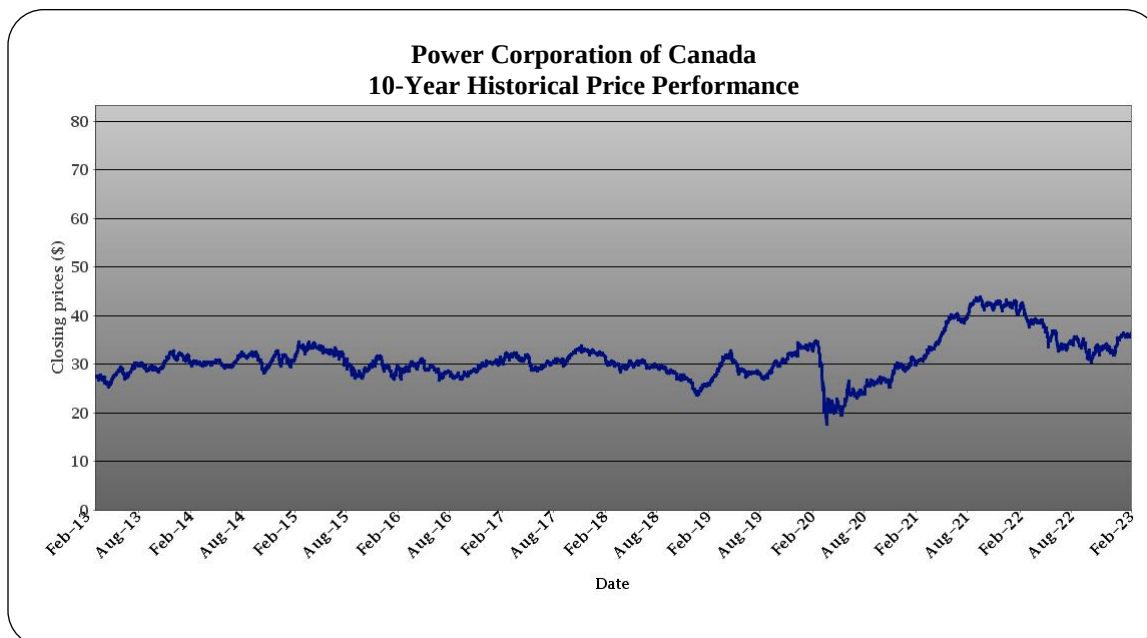
Source: Bloomberg L.P.: Measures annualized period as of December 31 of the previous year.

Power Corporation of Canada

Power Corporation of Canada operates as a diversified management and holding company. Power Corporation of Canada invests in financial services, communications, utility, industrial, and energy sectors. Power Corporation of Canada serves customers worldwide. The company's common shares are listed on the TSX under the symbol "POW". The annual dividend yield of the common shares of Power Corporation of Canada as of March 20, 2023 was 5.75%.

Historical Price Performance

The following chart sets forth the historical price performance of the common shares of Power Corporation of Canada for the period from February 28, 2013 to February 28, 2023. Historical price performance does not take into account distributions or dividends paid on the Underlying Securities.



Historical price performance of the common shares of Power Corporation of Canada will not necessarily predict future price performance of the common shares of Power Corporation of Canada or the Debt Securities. The source of the data displayed in this chart is Bloomberg L.P. and its accuracy cannot be guaranteed.

Historical annual percentage change of the common shares of Power Corporation of Canada										
Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Percentage change (%)	25.89	-0.59	-8.88	3.84	7.72	-24.22	36.36	-12.62	43.00	-23.80

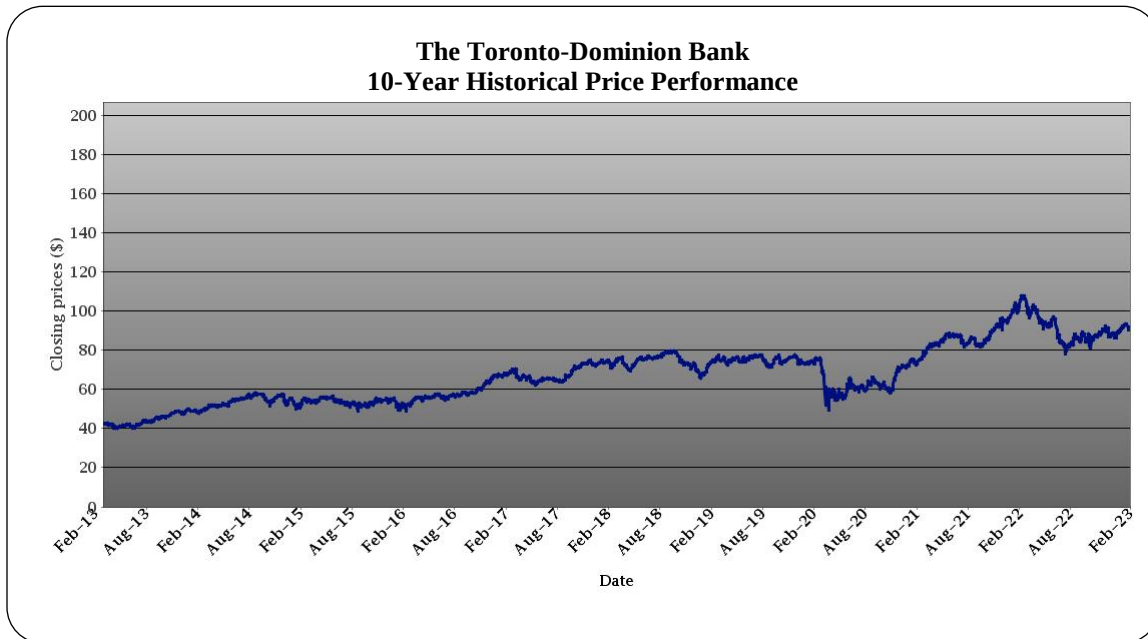
Source: Bloomberg L.P.: Measures annualized period as of December 31 of the previous year.

The Toronto-Dominion Bank

The Toronto-Dominion Bank conducts a general banking business through banking branches and offices located throughout Canada and overseas. The Toronto-Dominion Bank and other subsidiaries offer a broad range of banking, advisory services, and discount brokerage to individuals, businesses, financial institutions, governments, and multinational corporations. The company's common shares are listed on the TSX under the symbol "TD". The annual dividend yield of the common shares of The Toronto-Dominion Bank as of March 20, 2023 was 4.67%.

Historical Price Performance

The following chart sets forth the historical price performance of the common shares of Toronto-Dominion Bank for the period from February 28, 2013 to February 28, 2023. Historical price performance does not take into account distributions or dividends paid on the Underlying Securities.



Historical price performance of the common shares of The Toronto-Dominion Bank will not necessarily predict future price performance of the common shares of The Toronto-Dominion Bank or the Debt Securities. The source of the data displayed in this chart is Bloomberg L.P. and its accuracy cannot be guaranteed.

Historical annual percentage change of the common shares of The Toronto-Dominion Bank										
Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Percentage change (%)	19.53	10.90	-2.29	22.09	11.22	-7.86	7.32	-1.25	34.84	-9.60

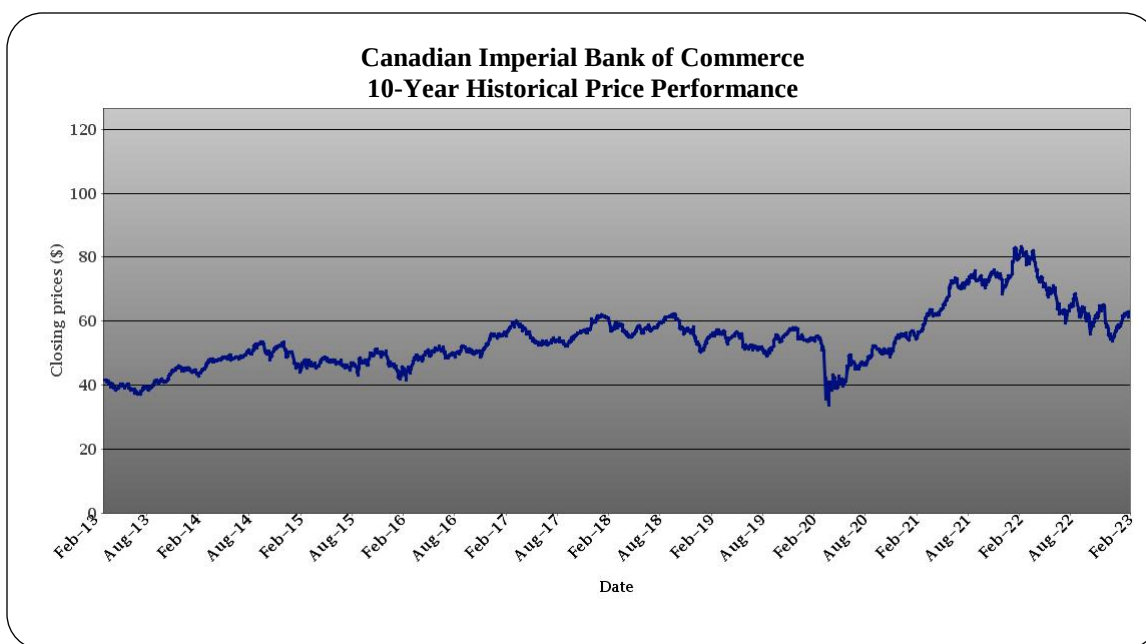
Source: Bloomberg L.P.: Measures annualized period as of December 31 of the previous year.

Canadian Imperial Bank of Commerce

Canadian Imperial Bank of Commerce provides banking and financial services to consumers, individuals, and corporate clients in Canada and around the world. The company's common shares are listed on the TSX under the symbol "CM". The annual dividend yield of the common shares of Canadian Imperial Bank of Commerce as of March 20, 2023 was 5.84%.

Historical Price Performance

The following chart sets forth the historical price performance of the common shares of Canadian Imperial Bank of Commerce for the period from February 28, 2013 to February 28, 2023. Historical price performance does not take into account distributions or dividends paid on the Underlying Securities.



Historical price performance of the common shares of Canadian Imperial Bank of Commerce will not necessarily predict future price performance of the common shares of Canadian Imperial Bank of Commerce or the Debt Securities. The source of the data displayed in this chart is Bloomberg L.P. and its accuracy cannot be guaranteed.

Historical annual percentage change of the common shares of Canadian Imperial Bank of Commerce										
Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Percentage change (%)	13.44	10.05	-8.66	20.14	11.85	-17.02	6.27	0.61	35.62	-25.71

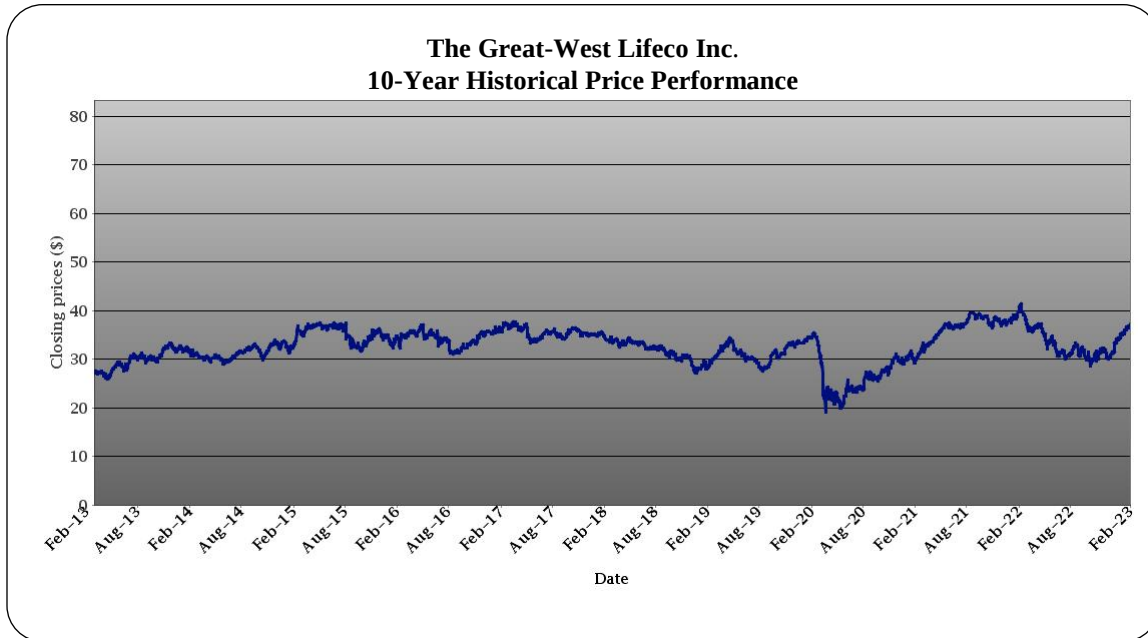
Source: Bloomberg L.P.: Measures annualized period as of December 31 of the previous year.

Great-West Lifeco Inc.

Great-West Lifeco Inc. is a financial services holding company with interests in the life insurance, health insurance, investment and retirement savings, and reinsurance businesses. Great-West Lifeco Inc. serves the financial security needs of people in Canada and the United States. The company's common shares are listed on the TSX under the symbol "GWO". The annual dividend yield of the common shares of Great-West Lifeco Inc. as of March 20, 2023 was 5.76%.

Historical Price Performance

The following chart sets forth the historical price performance of the common shares of Great-West Lifeco Inc. for the period from February 28, 2013 to February 28, 2023. Historical price performance does not take into account distributions or dividends paid on the Underlying Securities.



Historical price performance of the common shares of Great-West Lifeco Inc. will not necessarily predict future price performance of the common shares of Great-West Lifeco Inc. or the Debt Securities. The source of the data displayed in this chart is Bloomberg L.P. and its accuracy cannot be guaranteed.

Historical annual percentage change of the common shares of Great-West Lifeco Inc.										
Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Percentage change (%)	34.50	2.56	2.80	1.85	-0.20	-19.72	18.03	-8.75	25.07	-17.54

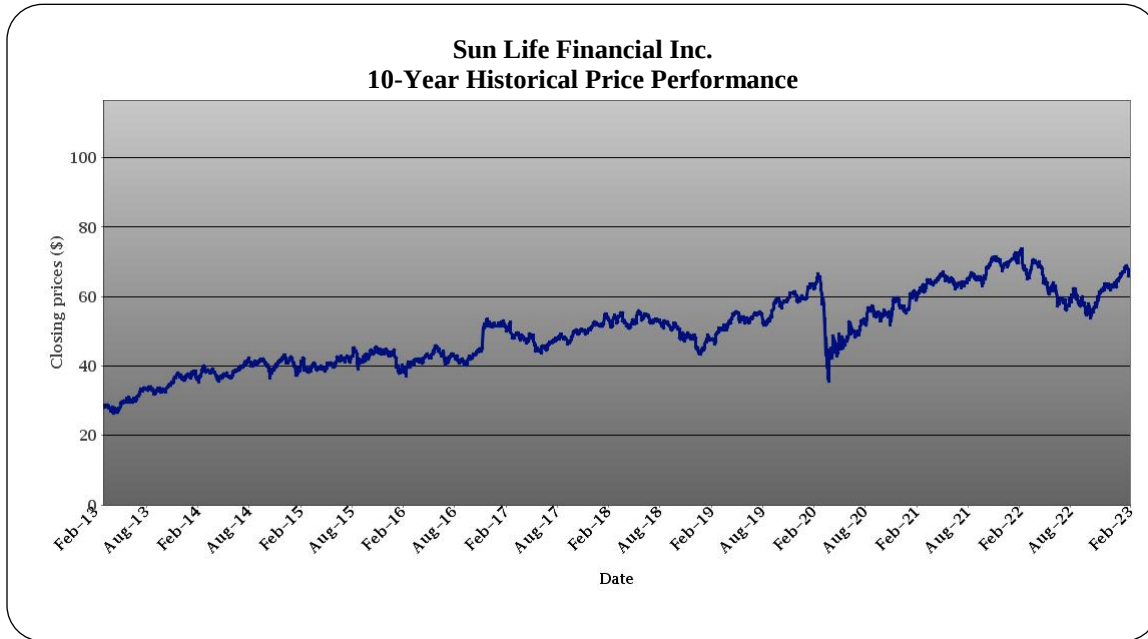
Source: Bloomberg L.P.: Measures annualized period as of December 31 of the previous year.

Sun Life Financial Inc.

Sun Life Financial Inc. is an international financial services organization providing a diverse range of wealth accumulation and protection products and services. Sun Life Financial Inc. provides insurance, mutual funds, annuities, pensions, investment management, trust services, and banking services. Sun Life Financial Inc. serves individuals and corporate customers worldwide. The company's common shares are listed on the TSX under the symbol "SLF". The annual dividend yield of the common shares of Sun Life Financial Inc. as of March 20, 2023 was 4.58%.

Historical Price Performance

The following chart sets forth the historical price performance of the common shares of Sun Life Financial Inc. for the period from February 28, 2013 to February 28, 2023. Historical price performance does not take into account distributions or dividends paid on the Underlying Securities.



Historical price performance of the common shares of Sun Life Financial Inc. will not necessarily predict future price performance of the common shares of Sun Life Financial Inc. or the Debt Securities. The source of the data displayed in this chart is Bloomberg L.P. and its accuracy cannot be guaranteed.

Historical annual percentage change of the common shares of Sun Life Financial Inc.										
Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Percentage change (%)	42.28	11.73	2.93	19.47	0.64	-12.70	30.74	-4.41	24.40	-10.74

Source: Bloomberg L.P.; Measures annualized period as of December 31 of the previous year.

APPENDIX B

Sample Calculations of Redemption Amount

The examples set out below are included for illustration purposes only. The Portfolio Values used to illustrate the calculation of the Redemption Amount are not estimates or forecasts of the Initial Portfolio Value and Final Portfolio Value on which the calculation of the Percentage Change, and in turn the Redemption Amount, will depend. All examples assume that a holder of the Debt Securities has purchased Debt Securities with an aggregate Principal Amount of \$100 and that no Extraordinary Event has occurred.

Hypothetical Calculation of the Initial Portfolio Value

It is assumed that the aggregate Principal Amount of Debt Securities issued under this offering is \$20,000,000.00 and the (hypothetical) closing prices of the Underlying Securities comprising the Portfolio on the Initial Valuation Date are as illustrated in the table below. Certain dollar values for the purposes of the table below have been rounded to two decimal places.

Company Name	Symbol	Closing Price (\$)	Underlying Security Value in Portfolio (\$)	Portfolio Weight	Number of Underlying Securities
Manulife Financial Corporation	MFC	24.42	2,500,000.00	12.50%	102,375.10238
The Bank of Nova Scotia	BNS	65.76	2,500,000.00	12.50%	38,017.03163
Bank of Montreal	BMO	117.16	2,500,000.00	12.50%	21,338.34073
Power Corporation of Canada	POW	34.43	2,500,000.00	12.50%	72,611.09498
The Toronto-Dominion Bank	TD	77.75	2,500,000.00	12.50%	32,154.34084
Canadian Imperial Bank of Commerce	CM	56.78	2,500,000.00	12.50%	44,029.58788
Great-West Lifeco Inc.	GWO	34.55	2,500,000.00	12.50%	72,358.90014
Sun Life Financial Inc.	SLF	61.56	2,500,000.00	12.50%	40,610.78622

Based on those assumptions, the Initial Portfolio Value would be the sum of the Underlying Security values, which is \$20,000,000.00.

Hypothetical Calculation of the Final Portfolio Value

For illustration purposes, it is assumed that no Extraordinary Event has occurred and that the (hypothetical) closing prices of the Underlying Securities comprising the Portfolio on the Final Valuation Date are as illustrated in the table below. Certain dollar values for the purposes of the table below have been rounded to two decimal places.

Company Name	Symbol	Closing Price (\$)	Number of Underlying Securities	Underlying Security Value in Portfolio (\$)
Manulife Financial Corporation	MFC	29.91	102,375.10238	3,062,039.31
The Bank of Nova Scotia	BNS	80.56	38,017.03163	3,062,652.07
Bank of Montreal	BMO	143.52	21,338.34073	3,062,478.66
Power Corporation of Canada	POW	42.18	72,611.09498	3,062,735.99
The Toronto-Dominion Bank	TD	95.24	32,154.34084	3,062,379.42

Canadian Imperial Bank of Commerce	CM	69.56	44,029.58788	3,062,698.13
Great-West Lifeco Inc.	GWO	42.32	72,358.90014	3,062,228.65
Sun Life Financial Inc.	SLF	75.41	40,610.78622	3,062,459.39

Based on those assumptions, the Final Portfolio Value would be the sum of the Underlying Security values, which is \$24,499,671.62 (note that this is the sum of the values from the “Underlying Security Value in Portfolio (\$)” column).

All dollar amounts in the examples below are rounded to the nearest whole cent.

Example #1 — Calculation of the Redemption Amount where the Percentage Change is negative, declining by more than 20.00% (i.e., the Portfolio Value is below the Protection Barrier Value).

Assuming that the Initial Portfolio Value is \$20,000,000.00 and the Final Portfolio Value is \$6,000,000.00, the Redemption Amount on each \$100 Principal Amount per Debt Security would be calculated as follows:

Initial Portfolio Value = \$20,000,000.00

Final Portfolio Value = \$6,000,000.00

Percentage Change = $(\$6,000,000.00 - \$20,000,000.00) / \$20,000,000.00 = -0.7000$ or -70.00%

Since the Percentage Change is negative, declining by more than 20.00%, and the Final Portfolio Value is below the Protection Barrier Value, the Redemption Amount is calculated as follows:

Redemption Amount = $\$100 + (\$100 \times -70.00\%) = \$30.00$

In this example, the Redemption Amount results in a loss on the Principal Amount equivalent to an annually compounded loss rate of 18.18%.

Example #2 — Calculation of the Redemption Amount where the Percentage Change is negative, declining by 20.00% or less (i.e., the Portfolio Value is equal to or above the Protection Barrier Value).

Assuming that the Initial Portfolio Value is \$20,000,000.00 and the Final Portfolio Value is \$17,000,000.00, the Redemption Amount on each \$100 Principal Amount per Debt Security would be calculated as follows:

Initial Portfolio Value = \$20,000,000.00

Final Portfolio Value = \$17,000,000.00

Percentage Change = $(\$17,000,000.00 - \$20,000,000.00) / \$20,000,000.00 = -0.1500$ or -15.00%

Since the Percentage Change is negative, declining by 20.00% or less, the Redemption Amount is \$100.

In this example, the Redemption Amount provides a return on the Principal Amount equivalent to an annually compounded rate of return of 0.00%.

Example #3 — Calculation of the Redemption Amount where the Percentage Change is zero or positive and less than 100.00%.

Assuming that the Initial Portfolio Value is \$20,000,000.00 and the Final Portfolio Value is \$26,000,000.00, the Redemption Amount on each \$100 Principal Amount per Debt Security would be calculated as follows:

Initial Portfolio Value = \$20,000,000.00

Final Portfolio Value = \$26,000,000.00

Percentage Change = $(\$26,000,000.00 - \$20,000,000.00) / \$20,000,000.00 = 0.3000$ or 30.00%

Since the Percentage Change is zero or positive and less than 100.00%, the Redemption Amount is calculated as follows:

$$\text{Redemption Amount} = \$100 + (\$100 \times 100.00\%) = \$200.00$$

In this example, the Redemption Amount provides a return on the Principal Amount equivalent to an annually compounded rate of return of 12.25%.

Example #4 — Calculation of the Redemption Amount where the Percentage Change is greater than or equal to 100.00%.

Assuming that the Initial Portfolio Value is \$20,000,000.00 and the Final Portfolio Value is \$46,000,000.00, the Redemption Amount on each \$100 Principal Amount per Debt Security would be calculated as follows:

$$\text{Initial Portfolio Value} = \$20,000,000.00$$

$$\text{Final Portfolio Value} = \$46,000,000.00$$

$$\text{Percentage Change} = (\$46,000,000.00 - \$20,000,000.00) / \$20,000,000.00 = 1.3000 \text{ or } 130.00\%$$

Since the Percentage Change is greater than or equal to 100.00%, the Redemption Amount is calculated as follows:

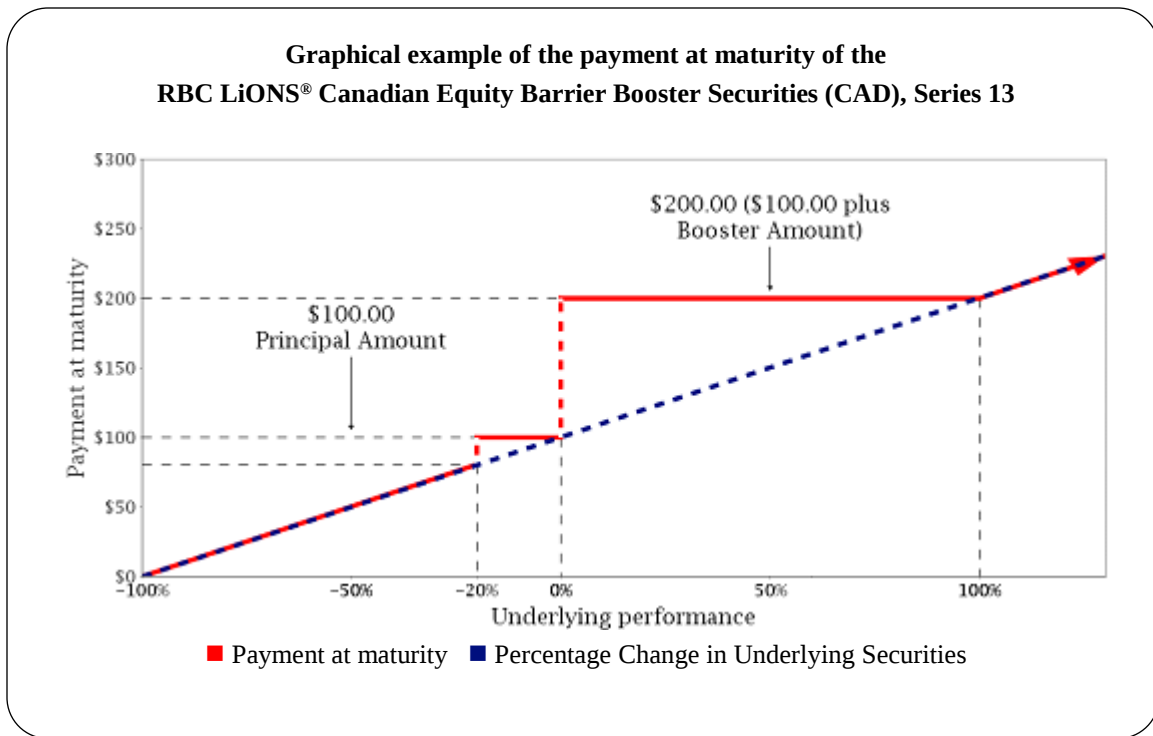
$$\text{Redemption Amount} = \$100 + (\$100 \times 130.00\%) = \$230.00$$

In this example, the Redemption Amount provides a return on the Principal Amount equivalent to an annually compounded rate of return of 14.89%.

APPENDIX C

Graphical Description of the Redemption Amount

The graph set out below is included for illustration purposes only. The values of the Portfolio used to illustrate the calculation of the Redemption Amount are not estimates or forecasts of the Initial Portfolio Value and Final Portfolio Value on which the calculation of the Percentage Change, and in turn the Redemption Amount, will depend. This graph shows a limited range of hypothetical returns on the Portfolio and is intended to be representative of that range only. Returns on the Portfolio not shown on the graph are still possible to achieve and the corresponding returns on the Debt Securities should be calculated using the formulas set out in this pricing supplement. This graph demonstrates what the return on the Debt Securities will be for a specific price performance of the Portfolio. There can be no assurance that any specific return will be achieved. All examples assume that a holder of the Debt Securities has purchased Debt Securities with an aggregate Principal Amount of \$100 and that no Extraordinary Event has occurred. The minimum Redemption Amount is \$1.00 per Debt Security.



APPENDIX D

Certain Canadian Tax Considerations

In the opinion of the Bank's counsel, Davies Ward Phillips & Vineberg LLP, the following summary fairly describes the principal Canadian federal income tax considerations under the *Income Tax Act* (Canada) (the "**Tax Act**") generally applicable to an initial purchaser of Debt Securities under this pricing supplement who, at all relevant times, for purposes of the Tax Act, deals at arm's length with and is not affiliated with the Bank (a "**Holder**").

This summary is based upon the current provisions of the Tax Act and the regulations thereunder (the "**Regulations**"), all specific proposals to amend the Tax Act or such Regulations publicly announced by the federal Minister of Finance prior to the date hereof (the "**Proposals**") and counsel's understanding of the current administrative and assessing policies and practices of the Canada Revenue Agency ("**CRA**"). Except for the Proposals, this summary does not take into account or anticipate any changes (including retroactive changes) in the law or the administrative and assessing policies or practices of the CRA, whether by judicial, regulatory, governmental or legislative action, nor does it take into account tax laws of any province or territory of Canada, or of any jurisdiction outside Canada. Provisions of provincial income tax legislation vary from province to province in Canada and may differ from federal income tax legislation. No assurance can be given that the Proposals will be implemented in their current form, or at all. This summary assumes that the Holder will neither undertake nor arrange a transaction in respect of the Debt Securities primarily for the purpose of obtaining a tax benefit, has not entered into a "derivative forward agreement" (as defined in the Tax Act) in respect of the Debt Securities and that the Debt Securities are not issued at a discount.

This summary is of a general nature only and is not intended to constitute, nor should it be relied upon or construed as, tax advice to any particular Holder, nor is it exhaustive of all possible Canadian federal income tax considerations. Holders should consult their own tax advisors as to the potential consequences to them of the acquisition, ownership and disposition of Debt Securities having regard to their particular circumstances.

Holders Resident in Canada

The following discussion applies to a Holder who, at all relevant times, for the purposes of the Tax Act, is an individual (other than a trust) who is resident (or deemed to be resident) in Canada and who acquires and holds the Debt Securities as capital property (a "**Resident Holder**"). Certain Resident Holders who might not otherwise be considered to hold their Debt Securities as capital property may, in certain circumstances, have their Debt Securities, and all other "Canadian securities" (as defined in the Tax Act) owned by such Resident Holders in the taxation year and all subsequent taxation years, treated as capital property as a result of having made the irrevocable election permitted by subsection 39(4) of the Tax Act.

Holding of Debt Securities

In certain circumstances, provisions of the Tax Act require a holder of a "prescribed debt obligation" (as defined for the purposes of the Tax Act) to include in income for each taxation year the amount of any interest, bonus or premium receivable on the obligation over its term based on the maximum amount of interest, bonus or premium receivable on the obligation. While the Debt Securities will generally be considered to be prescribed debt obligations to a Resident Holder, counsel understands that the CRA's current administrative practice is not to require any such accrual of interest on a prescribed debt obligation until such time as the return thereon becomes determinable. Counsel has been advised that the Bank anticipates that throughout each taxation year ending before the Maturity Date (or the date of earlier repayment in full) the return on the Debt Securities generally will not be determinable. Where this is the case, on the basis of such understanding of the CRA's administrative practice, there should be no deemed accrual of interest on the Debt Securities for taxation years (being calendar years) of a Resident Holder

ending prior to their Maturity Date (or, if applicable, the date of their earlier repayment in full), except as described below under “Disposition of Debt Securities” where a Debt Security is transferred before such date.

Payment at Maturity or Earlier Repayment in Full

A Resident Holder who holds the Debt Securities until maturity (or earlier repayment in full by the Bank) will be required to include in computing the Resident Holder’s income for the taxation year in which the Maturity Date (or earlier repayment in full) occurs the amount, if any, by which the amount payable at maturity (or earlier repayment in full) exceeds the Principal Amount of the Debt Securities. Alternatively, the Resident Holder will realize a capital loss to the extent that the amount received at such time is less than the Resident Holder’s adjusted cost base of such Debt Securities. The income tax considerations associated with the realization of a capital loss are described below.

Disposition of Debt Securities

Where a Resident Holder disposes of a Debt Security (other than to the Bank on the Maturity Date or earlier repayment in full), the Tax Act requires the amount of interest accrued on the Debt Security that is unpaid at that time to be included in computing the income of the Resident Holder for the taxation year in which the disposition occurs (except to the extent such amount has otherwise been included in computing the income of the Resident Holder for that year or a preceding year), and excludes such amount from the proceeds of disposition. On an assignment or other transfer of a Debt Security by a Resident Holder (other than to the Bank on the Maturity Date or earlier repayment in full), a formula amount will be deemed to have accrued on the Debt Security up to the time of the transfer, so that such amount will be required to be included in the income of the Resident Holder for the taxation year of the Resident Holder in which the transfer occurs. Such formula amount equals the excess, if any, of the price for which it is so transferred over its outstanding principal amount at the time of the transfer.

The Resident Holder should realize a capital loss to the extent that the proceeds of disposition, net of amounts included in income as interest (including any formula amount as described above) and any reasonable costs of disposition, are less than the Resident Holder’s adjusted cost base of the Debt Securities. As described above, any gain realized from the disposition of Debt Securities will be included in income and will not give rise to a capital gain. Resident Holders who dispose of Debt Securities prior to the Maturity Date thereof (or earlier repayment in full) should consult their own tax advisors with respect to their particular circumstances.

Treatment of Capital Losses

One-half of any capital loss realized by a Resident Holder will constitute an allowable capital loss that is deductible against taxable capital gains of the Resident Holder, subject to and in accordance with the provisions of the Tax Act.

Holders Not Resident in Canada

The following discussion applies to a Holder who, at all relevant times, for the purposes of the Tax Act and any applicable income tax treaty or convention, is neither resident nor deemed to be resident in Canada, deals at arm’s length with any Canadian resident (or deemed Canadian resident) to whom the Holder disposes of the Debt Securities, is not a “specified shareholder” of the Bank or a person who does not deal at arm’s length with a specified shareholder of the Bank for purposes of the “thin capitalization” rule contained in subsection 18(4) of the Tax Act, does not use or hold and is not deemed to use or hold the Debt Securities in the course of carrying on a business in Canada and is not an insurer carrying on an insurance business in Canada and elsewhere (a “**Non-Resident Holder**”).

Interest paid or credited or deemed to be paid or credited on the Debt Securities (including any amount paid at maturity in excess of the Principal Amount and interest deemed to be paid in certain cases involving the assignment or other transfer of a Debt Security to a resident or deemed resident of Canada, likely including any excess of the price for which it is transferred to such a resident or deemed resident over its outstanding principal amount at the time of the transfer) to a Non-Resident Holder will not be subject to Canadian non-resident withholding tax unless any portion of such interest is contingent or dependent on the use of or production from property in Canada or is computed by reference to revenue, profit, cash flow, commodity price or any other similar criterion or by reference to dividends paid or payable to shareholders of any class of shares of the capital stock of a corporation (“**Participating Debt Interest**”). Having regard to the terms of the Debt Securities and, in particular, that the constituent securities of the Portfolio include common shares of various Canadian corporations whose business may be considered to be similar to that of the Bank, interest paid or credited or deemed to be paid or credited on the Debt Securities may be considered to be Participating Debt Interest, although there is uncertainty on this question. Accordingly, the Bank expects that Canadian non-resident withholding tax will be withheld and remitted at the rate of 25% of the gross amount of such interest paid to a Non-Resident Holder (although the rate of this withholding tax may ultimately be reduced pursuant to the terms of an applicable income tax treaty or convention between Canada and the country of residence of the Non-Resident Holder). **Non-Resident Holders should consult with their own tax advisors before acquiring Debt Securities.**

There should be no other taxes on income (including taxable capital gains) payable by a Non-Resident Holder in respect of a Debt Security.

Eligibility for Investment

The Debt Securities, if issued on the date of this pricing supplement, would be qualified investments (for purposes of the Tax Act) for trusts governed by registered retirement savings plans (“**RRSPs**”), registered retirement income funds (“**RRIFs**”), tax-free savings accounts (“**TFSA**s”), registered disability savings plans (“**RDSPs**”), first home savings accounts, when available (“**FHSA**s”), registered education savings plans (“**RESPs**”) and deferred profit sharing plans (“**DPSPs**”), each within the meaning of the Tax Act (other than a DPSP to which payments are made by the Bank or a corporation or partnership with which the Bank does not deal at arm’s length within the meaning of the Tax Act).

Notwithstanding the foregoing, if Debt Securities are “prohibited investments” (as that term is defined in the Tax Act) for an RRSP, RRIF, TFSA, RDSP, FHSA or RESP, the annuitant of the RRSP or RRIF, the holder of the TFSA, RDSP or FHSA, or the subscriber of the RESP, as the case may be (each a “**Plan Holder**”), will be subject to a penalty tax as set out in the Tax Act. Debt Securities will be “prohibited investments” for an RRSP, RRIF, TFSA, RDSP, FHSA or RESP of a Plan Holder who has a “significant interest” (as defined in the Tax Act for purposes of the prohibited investment rules) in the Bank or who does not deal at arm’s length, within the meaning of the Tax Act, with the Bank. Investors should consult their own tax advisors in this regard.

The tax legislation applicable to FHSAs does not come into force until April 1, 2023.