

STRUCTURED INVESTMENTS

Opportunities in International Equities

\$2,152,000 Trigger PLUS Based on the Performance of the TOPIX® due November 3, 2028

Trigger Performance Leveraged Upside SecuritiesSM

Principal at Risk Securities

The Trigger PLUS are senior unsecured obligations of Royal Bank of Canada, do not pay interest, do not guarantee any return of principal at maturity and have the terms described in the accompanying prospectus supplement and prospectus, as supplemented or modified by this document. At maturity, if the level of the underlying index has **increased**, investors will receive the stated principal amount of their investment plus a return reflecting the leveraged upside performance of the underlying index. If the level of the underlying index has **decreased**, but by no more than 35%, investors will receive the stated principal. However, if the level of the underlying index has **decreased by more than 35%**, investors will lose 1% of the stated principal amount for every 1% decline in the final index level from the initial index level. The Trigger PLUS are for investors who seek an equity index-based return and who are willing to risk their principal and forgo current income in exchange for the leveraged upside feature, which applies to a limited range of positive performance of the underlying index. **Investors may lose their entire initial investment in the Trigger PLUS.** The Trigger PLUS are senior notes issued as part of Royal Bank of Canada's Global Medium-Term Notes, Series I program. All payments on the Trigger PLUS are subject to the credit risk of Royal Bank of Canada.

SUMMARY TERMS

Issuer:	Royal Bank of Canada
Underlying index:	The TOPIX® (Bloomberg symbol: "TPX Index")
Aggregate principal amount:	\$2,152,000
Stated principal amount:	\$1,000 per Trigger PLUS
Issue price:	\$1,000 per Trigger PLUS
Pricing date:	October 31, 2023
Issue date:	November 3, 2023
Valuation date:	October 31, 2028, subject to adjustment as described below
Maturity date:	November 3, 2028, subject to adjustment as described below
Payment at maturity:	<p>If the final index level is <i>greater than</i> the initial index level, $\\$1,000 + \\$1,000 \times \text{leverage factor} \times \text{underlying index return}$</p> <p>If the final index level is <i>less than or equal to</i> the initial index level but is <i>greater than or equal to</i> the trigger level, $\\$1,000$</p> <p>If the final index level is <i>less than</i> the trigger level, $\\$1,000 + \\$1,000 \times \text{underlying index return}$</p> <p><i>Under these circumstances, the payment at maturity will be less than \$650. You will lose at least 35% and possibly all of the stated principal amount if the final index level is less than the trigger level.</i></p>
Leverage factor:	253%
Underlying index return:	$(\text{final index level} - \text{initial index level}) / \text{initial index level}$
Trigger level:	1,464.92, which is 65% of the initial index level (rounded to two decimal places)
Initial index level:	2,253.72, which was the closing level of the underlying index on the pricing date
Final index level:	The closing level of the underlying index on the valuation date
CUSIP / ISIN:	78016NW45 / US78016NW455
Listing:	The Trigger PLUS will not be listed on any securities exchange.
Agent:	RBC Capital Markets, LLC ("RBCCM").
Commissions and issue price:	Price to public

	Price to public	Agent's commissions	Proceeds to issuer
Per Trigger PLUS	\$1,000.00	\$30.00 ⁽¹⁾ \$5.00 ⁽²⁾	\$965.00
Total	\$2,152,000	\$64,560.00 \$10,760.00	\$2,076,680.00

⁽¹⁾ RBCCM, acting as agent for Royal Bank of Canada, will receive a fee of \$35.00 per \$1,000 stated principal amount and will pay to Morgan Stanley Wealth Management ("MSWM") a fixed sales commission of \$30.00 for each Trigger PLUS that MSWM sells. See "Supplemental Information Regarding Plan of Distribution; Conflicts of Interest."

⁽²⁾ Of the amount per \$1,000 stated principal amount received by RBCCM, acting as agent for Royal Bank of Canada, RBCCM will pay MSWM a structuring fee of \$5.00 for each Trigger PLUS.

The initial estimated value of the Trigger PLUS as of the pricing date was \$957.22 per \$1,000 Trigger PLUS, which is less than the price to the public. The market value of the Trigger PLUS at any time will reflect many factors, cannot be predicted with accuracy, and may be less than this amount.

An investment in the Trigger PLUS involves certain risks. See "Risk Factors" beginning on page 6 of this document, and "Risk Factors" beginning on page S-2 of the accompanying prospectus supplement and page 1 of the prospectus.

You should read this document together with the related prospectus supplement and prospectus, each of which can be accessed via the hyperlinks below, before you decide to invest. Please also see "Additional Terms of the Trigger PLUS" in this document.

[Prospectus dated September 14, 2021](#)
[Prospectus Supplement dated September 14, 2021](#)

None of the Securities and Exchange Commission, any state securities commission or any other regulatory body has approved or disapproved of the Trigger PLUS or passed upon the adequacy or accuracy of this document. Any representation to the contrary is a criminal offense. The Trigger PLUS will not constitute deposits insured by the Canada Deposit Insurance Corporation, the U.S. Federal Deposit Insurance Corporation or any other Canadian or U.S. government agency or instrumentality. The Trigger PLUS are not subject to conversion into our common shares under subsection 39.2(2.3) of the Canada Deposit Insurance Corporation Act.

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Trigger Performance Leveraged Upside SecuritiesSM

Investment Summary

Trigger Performance Leveraged Upside Securities

Principal at Risk Securities

The Trigger PLUS Based on the Performance of the TOPIX® due November 3, 2028 (the “Trigger PLUS”) can be used:

- As an alternative to direct exposure to the underlying index that enhances returns for a certain range of positive performance of the underlying index.
- To potentially enhance returns and outperform the underlying index in a moderately bullish scenario.
- To achieve similar levels of upside exposure to the underlying index as a direct investment, while using fewer dollars by taking advantage of the leverage factor.
- To avoid loss in the event of a decline of the underlying index as of the valuation date, but only if the final index level is greater than or equal to the trigger level.

The Trigger PLUS are exposed on a 1:1 basis to the negative performance of the underlying index if the final index level is less than the trigger level.

Maturity:	Approximately five years
Leverage factor:	253% (applicable only if the final index level is greater than the initial index level)
Trigger level:	65% of the initial index level
Minimum payment at maturity:	None. Investors may lose their entire initial investment in the Trigger PLUS.
Coupon:	None

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Trigger Performance Leveraged Upside SecuritiesSM

Key Investment Rationale

These Trigger PLUS offer leveraged upside exposure to the positive performance of the underlying index. In exchange for enhanced performance of 253% of the appreciation of the underlying index, investors are fully exposed to the risk of loss of all or a significant portion of their investment if the final index level is less than the trigger level. At maturity, if the level of the underlying index has **increased**, investors will receive the stated principal amount of their investment plus a return reflecting the leveraged upside performance of the underlying index. If the level of the underlying index has **decreased**, but by no more than 35%, investors will receive the stated principal amount. However, if the level of the underlying index has **decreased** by more than 35%, investors will lose 1% of the principal amount for every 1% decline in the final index level from the initial index level. **Investors may lose their entire initial investment in the Trigger PLUS.**

Leveraged Upside Performance

The Trigger PLUS offer investors an opportunity to receive a leveraged upside performance return linked to a direct investment in the underlying index within a certain range of positive performance.

Upside Scenario

The level of the underlying index increases and, at maturity, we will pay the stated principal amount of \$1,000 plus 253% of the underlying index return.

Par Scenario

The level of the underlying index does not change or declines but the final index level is greater than or equal to the trigger level. In this case, at maturity, we will pay the stated principal amount of \$1,000 per Trigger PLUS.

Downside Scenario

The final index level is less than the trigger level, and, at maturity, we will pay less than the stated principal amount by an amount that is proportionate to the percentage decrease in the level of the underlying index from the initial index level. Under these circumstances, the payment at maturity will be less than \$650 per security. For example, if the final index level is 50% less than the initial index level, the securities will be redeemed at maturity for a loss of 50% of principal at \$500 per security, or 50% of the stated principal amount. There is no minimum payment at maturity on the securities, and you could lose your entire investment.

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Additional Information

You should read this document together with the prospectus dated September 14, 2021, as supplemented by the prospectus supplement dated September 14, 2021, relating to our Senior Global Medium-Term Notes, Series I, of which the Trigger PLUS are a part. This document, together with these documents, contains the terms of the Trigger PLUS and supersedes all other prior or contemporaneous oral statements as well as any other written materials, including preliminary or indicative pricing terms, correspondence, trade ideas, structures for implementation, sample structures, brochures or other educational materials of ours.

You should rely only on the information provided or incorporated by reference in this document, the prospectus and the prospectus supplement. We have not authorized anyone else to provide you with different information, and we take no responsibility for any other information that others may give you. We and Morgan Stanley Wealth Management are offering to sell the Trigger PLUS and seeking offers to buy the Trigger PLUS only in jurisdictions where it is lawful to do so. The information contained in this document and the accompanying prospectus supplement and prospectus is current only as of their respective dates.

If the information in this document differs from the information contained in the prospectus supplement or the prospectus, you should rely on the information in this document.

You should carefully consider, among other things, the matters set forth in “Risk Factors” in this document and the accompanying prospectus supplement and prospectus, as the Trigger PLUS involve risks not associated with conventional debt securities. We urge you to consult your investment, legal, tax, accounting and other advisers before you invest in the Trigger PLUS.

You may access these documents on the SEC website at www.sec.gov as follows (or if such address has changed, by reviewing our filings for the relevant date on the SEC website):

- Prospectus dated September 14, 2021:
<https://www.sec.gov/Archives/edgar/data/1000275/000121465921009470/rbc911212424b3.htm>
- Prospectus Supplement dated September 14, 2021:
<https://www.sec.gov/Archives/edgar/data/1000275/000121465921009472/rbcsupp911210424b3.htm>

Our Central Index Key, or CIK, on the SEC website is 1000275.

Please see the section “Documents Incorporated by Reference” on page i of the above prospectus for a description of our filings with the SEC that are incorporated by reference therein.

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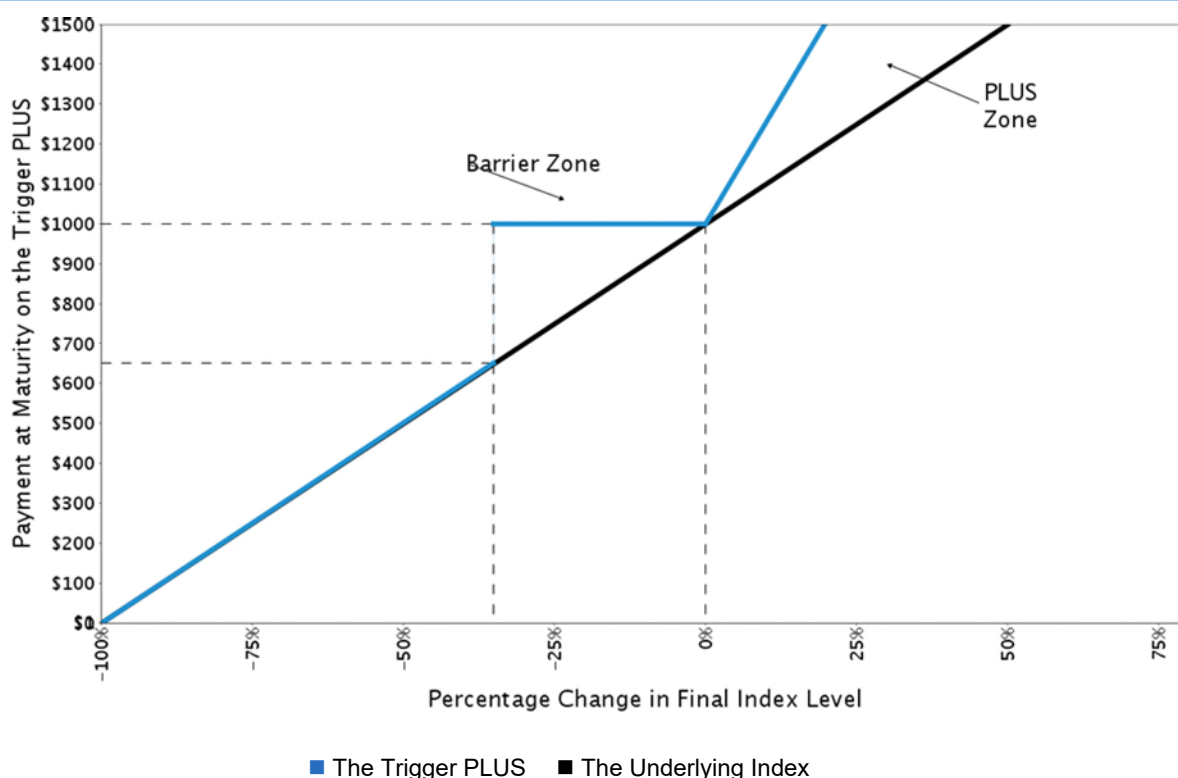
How the Trigger PLUS Work

Payoff Diagram

The payoff diagram below illustrates the payment at maturity on the Trigger PLUS for a range of hypothetical percentage changes in the closing level of the underlying index. The graph is based on the following terms:

Stated principal amount:	\$1,000 per Trigger PLUS
Leverage factor:	253%
Trigger level:	65% of the initial index level
Minimum payment at maturity:	None

Trigger PLUS Payoff Diagram



How it works

- **Upside Scenario.** If the final index level is greater than the initial index level, then investors would receive the \$1,000 stated principal amount plus a return reflecting 253% of the appreciation of the underlying index over the term of the Trigger PLUS.
 - If the underlying index appreciates 10%, the investor would receive a 25.30% return, or \$1,253.00 per Trigger PLUS, or 125.30% of the stated principal amount.
- **Par Scenario.** If the final index level is less than the initial index level, but has not decreased by more than 35%, the investor will receive the principal amount.
- **Downside Scenario.** If the final index level is less than the trigger level, the investor would receive an amount that is less than the \$1,000 stated principal amount, based on a 1% loss of principal for each 1% decline in the underlying index. Under these circumstances, the payment at maturity will be less than \$650 per Trigger PLUS. There is no minimum payment at maturity on the Trigger PLUS.
 - If the level of the underlying index depreciates by 50%, the investor would lose 50% of the investor's principal and receive only \$500 per Trigger PLUS at maturity, or 50% of the stated principal amount.

Risk Factors

An investment in the Trigger PLUS is subject to the risks described below, as well as the risks described under “Risk Factors” in the accompanying prospectus supplement and prospectus. Investors in the Trigger PLUS are also exposed to further risks related to the issuer of the Trigger PLUS, Royal Bank of Canada, which are described in Royal Bank of Canada’s annual report on Form 40-F for its most recently completed fiscal year, filed with the SEC and incorporated by reference herein. See the categories of risks, identified and disclosed in the management’s discussion and analysis of financial condition and results of operations included in the annual report on Form 40-F. This section (and the management’s discussion and analysis section of the annual report on Form 40-F) describes the most significant risks relating to the Trigger PLUS. You should carefully consider whether the Trigger PLUS are appropriate for you in light of your particular circumstances.

Risks Relating to the Terms and Structure of the Trigger PLUS

- **The Trigger PLUS do not pay interest and you may lose all or a portion of the principal amount at maturity.** The terms of the Trigger PLUS differ from those of ordinary debt securities in that the Trigger PLUS do not pay interest, and you may lose some or all of the principal amount at maturity. If the final index level has declined from the initial index level by an amount greater than 35%, the payout at maturity will be an amount in cash that is less than the \$1,000 stated principal amount of each Trigger PLUS by an amount proportionate to the decrease in the level of the underlying index. You may lose the entire principal amount of the Trigger PLUS.
- **The Trigger PLUS are subject to the credit risk of Royal Bank of Canada, and any actual or anticipated changes to its credit ratings or credit spreads may adversely affect the market value of the Trigger PLUS.** You are dependent on Royal Bank of Canada’s ability to pay all amounts due on the Trigger PLUS at maturity and therefore you are subject to the credit risk of Royal Bank of Canada. If Royal Bank of Canada defaults on its obligations under the Trigger PLUS, your investment would be at risk and you could lose some or all of your investment. As a result, the market value of the Trigger PLUS prior to maturity will be affected by changes in the market’s view of Royal Bank of Canada’s creditworthiness. Any actual or anticipated decline in Royal Bank of Canada’s credit ratings or increase in the credit spreads charged by the market for taking Royal Bank of Canada credit risk is likely to adversely affect the market value of the Trigger PLUS.
- **The amount payable on the Trigger PLUS is not linked to the level of the underlying index at any time other than the valuation date.** The final index level will be based on the closing level of the underlying index on the valuation date, subject to adjustment for non-trading days and certain market disruption events. For example, even if the level of the underlying index appreciates prior to the valuation date but then decreases on the valuation date to a level that is less than the initial index level, the payment at maturity will be less, and may be significantly less than it would have been had the payment at maturity been linked to the level of the underlying index prior to that decrease. Although the actual level of the underlying index on the maturity date or at other times during the term of the Trigger PLUS may be higher than the final index level, the payment at maturity will be based solely on the closing level of the underlying index on the valuation date.
- **Investing in the Trigger PLUS is not equivalent to investing in the underlying index.** Investing in the Trigger PLUS is not equivalent to investing in the underlying index or its component stocks. Investors in the Trigger PLUS will not have voting rights or rights to receive dividends or other distributions or any other rights with respect to stocks that constitute the underlying index.
- **Governmental regulatory actions, such as sanctions, could adversely affect your investment in the Trigger PLUS.** Governmental regulatory actions, including, without limitation, sanctions-related actions by the U.S. or a foreign government, could prohibit or otherwise restrict persons from holding the Trigger PLUS or securities included in the underlying index, or engaging in transactions in them, and any such action could adversely affect the level of the underlying index. These regulatory actions could result in restrictions on the Trigger PLUS and could result in the loss of a significant portion of your initial investment in the Trigger PLUS, including if you are forced to divest the Trigger PLUS due to the government mandates, especially if such divestment must be made at a time when the value of the Trigger PLUS has declined.
- **Significant aspects of the tax treatment of the Trigger PLUS are uncertain.** The tax treatment of an investment in the Trigger PLUS is uncertain. We do not plan to request a ruling from the Internal Revenue Service (the “IRS”) or from the Canada Revenue Agency regarding the tax treatment of an investment in the Trigger PLUS, and the IRS, the Canada Revenue Agency or a court may not agree with the tax treatment described in this document.

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The IRS has issued a notice indicating that it and the U.S. Treasury Department are actively considering whether, among other issues, a holder should be required to accrue interest over the term of an instrument such as the Trigger PLUS even though that holder will not receive any payments with respect to the Trigger PLUS until maturity and whether all or part of the gain a holder may recognize upon sale, exchange or maturity of an instrument such as the Trigger PLUS should be treated as ordinary income. The outcome of this process is uncertain and could apply on a retroactive basis.

Please read carefully the sections entitled “Canadian Federal Income Tax Consequences” and “Supplemental Discussion of U.S. Federal Income Tax Consequences” in this document, the section entitled “Tax Consequences” in the accompanying prospectus and the section entitled “Certain Income Tax Consequences” in the accompanying prospectus supplement. You should consult your tax advisor about your own tax situation.

Risks Relating to the Initial Estimated Value of the Trigger PLUS

- **The initial estimated value of the Trigger PLUS is less than the price to the public.** The initial estimated value that is set forth on the cover page of this pricing supplement does not represent a minimum price at which we, RBCCM or any of our affiliates would be willing to purchase the Trigger PLUS in any secondary market (if any exists) at any time. If you attempt to sell the Trigger PLUS prior to maturity, their market value may be lower than the price you paid for them and the initial estimated value. This is due to, among other things, changes in the level of the underlying index, the borrowing rate we pay to issue securities of this kind, and the inclusion in the price to the public of the agent’s commissions and the estimated costs relating to our hedging of the Trigger PLUS. These factors, together with various credit, market and economic factors over the term of the Trigger PLUS, are expected to reduce the price at which you may be able to sell the Trigger PLUS in any secondary market and will affect the value of the Trigger PLUS in complex and unpredictable ways. Assuming no change in market conditions or any other relevant factors, the price, if any, at which you may be able to sell your Trigger PLUS prior to maturity may be less than your original purchase price, as any such sale price would not be expected to include the agent’s commissions and the hedging costs relating to the Trigger PLUS. In addition to bid-ask spreads, the value of the Trigger PLUS determined for any secondary market price is expected to be based on the secondary rate rather than the internal funding rate used to price the Trigger PLUS and determine the initial estimated value. As a result, the secondary price will be less than if the internal funding rate was used. The Trigger PLUS are not designed to be short-term trading instruments. Accordingly, you should be able and willing to hold your Trigger PLUS to maturity.
- **Our initial estimated value of the Trigger PLUS is an estimate only, calculated as of the pricing date.** The initial estimated value of the Trigger PLUS is based on the value of our obligation to make the payments on the Trigger PLUS, together with the mid-market value of the derivative embedded in the terms of the Trigger PLUS. See “Structuring the Trigger PLUS” below. Our estimate is based on a variety of assumptions, including our credit spreads, expectations as to dividends, interest rates and volatility, and the expected term of the Trigger PLUS. These assumptions are based on certain forecasts about future events, which may prove to be incorrect. Other entities may value the Trigger PLUS or similar securities at a price that is significantly different than we do. The value of the Trigger PLUS at any time after the pricing date 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 Trigger PLUS in any secondary market, if any, should be expected to differ materially from the initial estimated value of your Trigger PLUS.

Risks Relating to the Secondary Market for the Trigger PLUS

- **The market price of the Trigger PLUS will be influenced by many unpredictable factors.** Many factors will influence the value of the Trigger PLUS in the secondary market and the price at which RBCCM may be willing to purchase or sell the Trigger PLUS in the secondary market, including:
 - the trading price and volatility (frequency and magnitude of changes in value) of the securities represented by the underlying index;
 - dividend yields on the securities represented by the underlying index;
 - market interest rates;
 - our creditworthiness, as represented by our credit ratings or as otherwise perceived in the market;
 - time remaining to maturity; and
 - geopolitical conditions and economic, financial, political, regulatory or judicial events that affect the underlying index.

The level of the underlying index may be volatile, and you should not take the historical levels of the underlying index as an indication of future performance. See “Information About the Underlying Index” below. You may receive

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less, and possibly significantly less, than the stated principal amount per Trigger PLUS if you sell your Trigger PLUS prior to maturity.

- **The Trigger PLUS will not be listed on any securities exchange and secondary trading may be limited.** The Trigger PLUS will not be listed on any securities exchange. Therefore, there may be little or no secondary market for the Trigger PLUS. RBCCM may, but is not obligated to, make a market in the Trigger PLUS, and, if it chooses to do so at any time, it may cease doing so. When it does make a market, it will generally do so for transactions of routine secondary market size at prices based on its estimate of the current value of the Trigger PLUS, taking into account its bid/offer spread, our credit spreads, market volatility, the notional size of the proposed sale, the cost of unwinding any related hedging positions, the time remaining to maturity and the likelihood that it will be able to resell the Trigger PLUS. Even if there is a secondary market, it may not provide enough liquidity to allow you to trade or sell the Trigger PLUS easily. Because we do not expect that other broker-dealers will participate significantly in the secondary market for the Trigger PLUS, the price at which you may be able to trade your Trigger PLUS is likely to depend on the price, if any, at which RBCCM is willing to transact. If, at any time, RBCCM were not to make a market in the Trigger PLUS, it is likely that there would be no secondary market for the Trigger PLUS. Accordingly, you should be willing to hold your Trigger PLUS to maturity.

Risks Relating to the Underlying Index

- **An investment in the Trigger PLUS is subject to risks relating to non-U.S. securities markets.** Because foreign companies or foreign equity securities included in the underlying index are publicly traded in Japan and are denominated in yen, an investment in the Trigger PLUS involves particular risks. For example, Japanese markets may be more volatile than the U.S. securities markets, and market developments may affect these markets differently from the U.S. or other securities markets. Direct or indirect government intervention to stabilize the securities markets in Japan, as well as cross-shareholdings in certain companies, may affect trading prices and trading volumes in Japan. Also, the public availability of information concerning the foreign issuers may vary depending on the reporting requirements imposed by their respective regulators. In addition, the foreign issuers may be subject to accounting, auditing and financial reporting standards and requirements that differ from those applicable to U.S. reporting companies.
- **The Trigger PLUS will not be adjusted for changes in exchange rates.** Although the equity securities composing the underlying index are traded in Japanese yen, and the Trigger PLUS is denominated in U.S. dollars, the amount payable on the Trigger PLUS at maturity will not be adjusted for changes in the exchange rates between the U.S. dollar and the Japanese yen. Changes in exchange rates, however, may also reflect changes in the Japanese economy that in turn may affect the level of the underlying index, and therefore the Trigger PLUS. The amount we pay in respect of your Trigger PLUS on the maturity date will be determined solely in accordance with the procedures described in this document.
- **Adjustments to the underlying index could adversely affect the value of the Trigger PLUS.** The sponsor of the underlying index (the “index sponsor”) may add, delete or substitute the stocks constituting the underlying index, or make other methodological changes. Further, the index sponsor may discontinue or suspend calculation or publication of the underlying index at any time. Any of these actions could affect the value of and the return on the Trigger PLUS.
- **We have no affiliation with the index sponsor and will not be responsible for any actions taken by the index sponsor.** The index sponsor is not an affiliate of ours and will not be involved in the offering of the Trigger PLUS in any way. Consequently, we have no control over the actions of the index sponsor, including any actions of the type that would require the calculation agent to adjust the payment to you at maturity. The index sponsor has no obligation of any sort with respect to the Trigger PLUS. Thus, the index sponsor has no obligation to take your interests into consideration for any reason, including in taking any actions that might affect the value of the Trigger PLUS. None of our proceeds from the issuance of the Trigger PLUS will be delivered to the index sponsor.
- **Historical levels of the underlying index should not be taken as an indication of its future levels during the term of the Trigger PLUS.** The trading prices of the equity securities comprising the underlying index will determine the level of the underlying index at any given time. As a result, it is impossible to predict whether the level of the underlying index will rise or fall. Trading prices of the equity securities comprising the underlying index will be influenced by complex and interrelated political, economic, financial and other factors.

Risks Relating to Conflicts of Interest

- **Hedging and trading activity by us and our subsidiaries could potentially adversely affect the value of the Trigger PLUS.** One or more of our subsidiaries and/or third party dealers expect to carry out hedging activities

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related to the Trigger PLUS (and possibly to other instruments linked to the underlying index or the securities it represents), including trading in those securities as well as in other related instruments. Some of our subsidiaries also may conduct trading activities relating to the underlying index on a regular basis as part of their general broker-dealer and other businesses. Any of these hedging or trading activities on or prior to the pricing date could have affected the initial index level and, therefore, could have increased the level at or above which the underlying index must close on the valuation date so that investors do not suffer a loss on their initial investment in the Trigger PLUS. Additionally, such hedging or trading activities during the term of the Trigger PLUS, including on the valuation date, could adversely affect the closing level of the underlying index on the valuation date and, accordingly, the amount of cash an investor will receive at maturity, if any.

- **Our business activities may create conflicts of interest.** We and our affiliates may engage in trading activities related to the underlying index or the securities represented by the underlying index that are not for the account of holders of the Trigger PLUS or on their behalf. These trading activities may present a conflict between the holders' interest in the Trigger PLUS and the interests we and our affiliates will have in proprietary accounts, in facilitating transactions, including options and other derivatives transactions, for our customers and in accounts under our management. These trading activities could be adverse to the interests of the holders of the Trigger PLUS.

We and our affiliates may presently or from time to time engage in business with one or more of the issuers of the securities represented by the underlying index. This business may include extending loans to, or making equity investments in, such companies or providing advisory services to such companies, including merger and acquisition advisory services. In the course of business, we and our affiliates may acquire non-public information relating to these companies, which we have no obligation to disclose to you, and, in addition, one or more of our affiliates may publish research reports about these companies. Neither we nor the agent have made any independent investigation regarding any matters whatsoever relating to the issuers of the securities represented by the underlying index.

Moreover, we and our affiliates may have published, and in the future expect to publish, research reports with respect to the underlying index or the securities which it represents. This research is modified from time to time without notice and may express opinions or provide recommendations that are inconsistent with purchasing or holding the Trigger PLUS. Any of these activities by us or one or more of our affiliates may affect the level of the underlying index and, therefore, the market value of the Trigger PLUS.

- **The calculation agent, which is a subsidiary of the issuer, will make determinations with respect to the Trigger PLUS, which may create a conflict of interest.** Our wholly owned subsidiary, RBCCM, will serve as the calculation agent. As calculation agent, RBCCM determined the initial index level, and will determine the final index level and the underlying index return, and will calculate the amount of cash, if any, you will receive at maturity. Moreover, certain determinations made by RBCCM, in its capacity as calculation agent, may require it to exercise discretion and make subjective judgments, such as with respect to the occurrence or non-occurrence of market disruption events and the selection of a successor index or the calculation of the final index level in the event of a market disruption event or discontinuance of the underlying index. These potentially subjective determinations may adversely affect the payout to you at maturity, if any. For further information regarding these types of determinations see "Additional Terms of the Trigger PLUS" below.

Additional Terms of the Trigger PLUS

Please read this information in conjunction with the summary terms on the front cover of this document.

Additional Provisions

Postponement of the valuation date:

If the valuation date occurs on a day that is not a trading day or on a day on which the calculation agent has determined that a market disruption event (as defined below) has occurred or is continuing, then the valuation date will be postponed until the next succeeding trading day on which the calculation agent determines that a market disruption event does not occur or is not continuing; provided that in no event will the valuation date be postponed by more than five trading days. If the valuation date is postponed by five trading days, and a market disruption event occurs or is continuing on that fifth trading day, then the calculation agent may determine, in its good faith and reasonable judgment, what the closing level of the underlying index would have been in the absence of the market disruption event. If the valuation date is postponed, then the maturity date will be postponed by an equal number of business days. No interest shall accrue or be payable as a result of such postponement.

Market disruption events:

With respect to the underlying index and any relevant successor index, a “market disruption event” means:

- a suspension, absence or material limitation of trading of equity securities then constituting 20% or more of the level of the underlying index (or the relevant successor index) on the relevant exchanges (as defined below) for such securities for more than two hours of trading during, or during the one hour period preceding the close of, the principal trading session on such relevant exchange; or
- a breakdown or failure in the price and trade reporting systems of any relevant exchange as a result of which the reported trading prices for equity securities then constituting 20% or more of the level of the underlying index (or the relevant successor index) during the one hour preceding the close of the principal trading session on such relevant exchange are materially inaccurate; or
- a suspension, absence or material limitation of trading on the primary exchange or market for trading in futures or options contracts related to the underlying index (or the relevant successor index) for more than two hours of trading during, or during the one hour period preceding the close of, the principal trading session on such exchange or market; or
- a decision to permanently discontinue trading in the relevant futures or options contracts;

in each case as determined by the calculation agent in its sole discretion; and

- a determination by the calculation agent in its sole discretion that the event described above materially interfered with our ability or the ability of any of our affiliates to adjust or unwind all or a material portion of any hedge with respect to the Trigger PLUS.

For purposes of determining whether a market disruption event with respect to the underlying index (or the relevant successor index) exists at any time, if trading in a security included in the underlying index (or the relevant successor index) is materially suspended or materially limited at that time, then the relevant percentage contribution of that security to the level of the underlying index (or the relevant successor index) will be based on a comparison of (a) the portion of the level of the underlying index (or the relevant successor index) attributable to that security relative to (b) the overall level of the underlying index (or the relevant successor index), in each case immediately before that suspension or limitation.

For purposes of determining whether a market disruption event with respect to the underlying index (or the relevant successor index) has occurred:

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- a limitation on the hours or number of days of trading will not constitute a market disruption event if it results from an announced change in the regular business hours of the relevant exchange, or the primary exchange or market for trading in futures or options contracts related to the underlying index (or the relevant successor index);
- limitations pursuant to the rules of any relevant exchange similar to NYSE Rule 80B (or any applicable rule or regulation enacted or promulgated by any other self-regulatory organization or any government agency of scope similar to NYSE Rule 80B as determined by the calculation agent) on trading during significant market fluctuations will constitute a suspension, absence or material limitation of trading;
- a suspension of trading in futures or options contracts on the underlying index (or the relevant successor index) by the primary exchange or market trading in such contracts by reason of:
 - a price change exceeding limits set by such exchange or market,
 - an imbalance of orders relating to such contracts, or
 - a disparity in bid and ask quotes relating to such contracts,

will, in each such case, constitute a suspension, absence or material limitation of trading in futures or options contracts related to the underlying index (or the relevant successor index); and

- a “suspension, absence or material limitation of trading” on any relevant exchange or on the primary exchange or market on which futures or options contracts related to the underlying index (or the relevant successor index) are traded will not include any time when such exchange or market is itself closed for trading under ordinary circumstances.

“Relevant exchange” means the primary exchange or market of trading for any security (or any combination thereof) then included in the underlying index or such successor index, as applicable.

Discontinuation of/adjustments to the underlying index:

If the index sponsor discontinues publication of the underlying index and the index sponsor or another entity publishes a successor or substitute index that the calculation agent determines, in its sole discretion, to be comparable to the discontinued index (such index being referred to herein as a “successor index”), then the closing level of the underlying index on the valuation date will be determined by reference to the level of such successor index at the close of trading on the relevant exchange for the successor index on such day.

Upon any selection by the calculation agent of a successor index, the calculation agent will cause written notice to be promptly furnished to the Trustee, to us and to the holders of the Trigger PLUS.

If the index sponsor discontinues publication of the underlying index prior to, and that discontinuation is continuing on the valuation date, and the calculation agent determines, in its sole discretion, that no successor index is available at that time or the calculation agent has previously selected a successor index and publication of that successor index is discontinued prior to, and that discontinuation is continuing on, the valuation date, then the calculation agent will determine the closing level of the underlying index for that date. The closing level of the underlying index will be computed by the calculation agent in accordance with the formula for and method of calculating the underlying index or successor index, as applicable, last in effect prior to the discontinuation, using the closing price (or, if trading in the relevant securities has been materially suspended or materially limited, the calculation agent’s good faith estimate of the closing price that would have prevailed but for the suspension or limitation) at the close of the principal trading session on that date of each security most recently included in the underlying index or successor index, as applicable. If at any time the method of calculating the underlying index or a successor index, or the level thereof, is changed in a material respect, or if the underlying index or a

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successor index is in any other way modified so that the underlying index or successor index does not, in the opinion of the calculation agent, fairly represent the level of the underlying index or successor index had those changes or modifications not been made, then the calculation agent will, at the close of business in New York City on the date on which the closing level of the underlying index is to be determined, make any calculations and adjustments as, in the good faith judgment of the calculation agent, may be necessary in order to arrive at a level of a stock index comparable to the underlying index or successor index, as the case may be, as if those changes or modifications had not been made, and calculate the closing level of the underlying index with reference to the underlying index or such successor index, as adjusted. Accordingly, if the method of calculating the underlying index or a successor index is modified so that the level of the underlying index or such successor index is a fraction of what it would have been if there had been no such modification (e.g., due to a split in the underlying index), then the calculation agent will adjust its calculation of the underlying index or such successor index in order to arrive at a level of the underlying index or such successor index as if there had been no such modification (e.g., as if such split had not occurred).

Notwithstanding these alternative arrangements, discontinuation the publication of or modification of the underlying index or successor index, as applicable, may adversely affect the value of the Trigger PLUS.

Business day:

A business day means a Monday, Tuesday, Wednesday, Thursday or Friday that is not a day on which banking institutions in The City of New York generally are authorized or obligated by law, regulation or executive order to close.

Trading day:

A trading day means a day, as determined by the calculation agent, on which trading is generally conducted on (i) the relevant exchanges for securities comprising the underlying index or the successor index and (ii) the exchanges on which futures or options contracts related to the underlying index or the successor index are traded, other than a day on which trading on such relevant exchange or exchange on which such futures or options contracts are traded is scheduled to close prior to its regular weekday closing time.

Events of default and acceleration:

If the maturity of the Trigger PLUS is accelerated upon an event of default under the Indenture, the amount payable upon acceleration will be determined by the calculation agent. Such amount will be the payment at maturity, calculated as if the date of declaration of acceleration were the valuation date.

Minimum ticketing size:

\$1,000 / 1 Trigger PLUS

Additional amounts:

We will pay any amounts to be paid by us on the Trigger PLUS without deduction or withholding for, or on account of, any and all present or future income, stamp and other taxes, levies, imposts, duties, charges, fees, deductions or withholdings ("taxes") now or hereafter imposed, levied, collected, withheld or assessed by or on behalf of Canada or any Canadian political subdivision or authority that has the power to tax, unless the deduction or withholding is required by law or by the interpretation or administration thereof by the relevant governmental authority. At any time a Canadian taxing jurisdiction requires us to deduct or withhold for or on account of taxes from any payment made under or in respect of the Trigger PLUS, we will pay such additional amounts ("Additional Amounts") as may be necessary so that the net amounts received by each holder (including Additional Amounts), after such deduction or withholding, shall not be less than the amount the holder would have received had no such deduction or withholding been required.

However, no Additional Amounts will be payable with respect to a payment made to a holder of a Trigger PLUS or of a right to receive payments in respect thereto (a "Payment Recipient"), which we refer to as an "Excluded Holder," in respect of a beneficial owner or Payment Recipient:

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- (i) with whom we do not deal at arm's length (within the meaning of the Income Tax Act (Canada)) at the time of making such payment;
- (ii) who is subject to such taxes by reason of its holder being connected presently or formerly with Canada or any province or territory thereof otherwise than by reason of the holder's activity in connection with purchasing the Trigger PLUS, the holding of the Trigger PLUS or the receipt of payments thereunder;
- (iii) who is, or who does not deal at arm's length with a person who is, a "specified shareholder" (within the meaning of subsection 18(5) of the Income Tax Act (Canada)) of Royal Bank of Canada (generally a person will be a "specified shareholder" for this purpose if that person, either alone or together with persons with whom the person does not deal at arm's length, owns 25% or more of (a) our voting shares, or (b) the fair market value of all of our issued and outstanding shares); or who is a "specified entity" as defined in proposals to amend the Income Tax Act (Canada) released on April 29, 2022 with respect to "hybrid mismatch arrangements" with respect to Royal Bank of Canada or substantially analogous provisions of any finally enacted amendment to the Income Tax Act (Canada);
- (iv) who presents such security for payment (where presentation is required, such as if a security is issued in definitive form) more than 30 days after the relevant date; for this purpose, the "relevant date" in relation to any payments on any security means:
 - a. the due date for payment thereof (whether at maturity or upon an earlier acceleration), or
 - b. if the full amount of the monies payable on such date has not been received by the Trustee on or prior to such due date, the date on which the full amount of such monies has been received and notice to that effect is given to holders of the Trigger PLUS in accordance with the Indenture;
- (v) who could lawfully avoid (but has not so avoided) such withholding or deduction by complying or requiring that any agent comply with, any statutory requirements necessary to establish qualification for an exemption from withholding or deduction or by making, or requiring that any agent make, a declaration of non-residence or other similar claim for exemption to any relevant tax authority; or
- (vi) who is subject to deduction or withholding on account of any tax, assessment, or other governmental charge that is imposed or withheld by reason of the application of Section 1471 through 1474 of the United States Internal Revenue Code of 1986, as amended (the "Code") (or any successor provisions), any regulation, pronouncement, or agreement thereunder, official interpretations thereof, or any law implementing an intergovernmental approach thereto, whether currently in effect or as published and amended from time to time.

For the purposes of clause (iv) above, if a security is presented for payment more than 30 days after the relevant date, we shall only be required to pay such Additional Amounts as shall have accrued as of such 30th day, and no further Additional Amounts shall accrue or become payable after such date.

For the avoidance of doubt, we will not have any obligation to pay any holders Additional Amounts on any tax which is payable otherwise than by deduction or withholding from payments made under or in respect of the Trigger PLUS.

We will also make such withholding or deduction and remit the full amount deducted or withheld to the relevant authority in accordance with applicable law. We will furnish to the

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Trustee, within 30 days after the date the payment of any Canadian taxes is due pursuant to applicable law, certified copies of tax receipts evidencing that such payment has been made or other evidence of such payment satisfactory to the Trustee. We will indemnify and hold harmless each holder of the Trigger PLUS (other than an Excluded Holder) and upon written request reimburse each such holder for the amount of (x) any Canadian taxes so levied or imposed and paid by such holder as a result of payments made under or with respect to the Trigger PLUS, and (y) any Canadian taxes levied or imposed and paid by such holder with respect to any reimbursement under (x) above, but excluding any such taxes on such holder's net income or capital.

For additional information, see the section "Tax Consequences—Canadian Taxation" in the accompanying prospectus.

Employee Retirement Income Security Act:

If you are an insurance company or the fiduciary of a pension plan or an employee benefit plan (including a governmental plan, an IRA or a Keogh Plan) proposing to invest in the Trigger PLUS, please review the section of the accompanying prospectus "Benefit Plan Investor Considerations." If you are an insurance company or the fiduciary of a pension plan or an employee benefit plan, and propose to invest in the Trigger PLUS, you should consult your legal counsel.

Form of the Trigger PLUS:

Book-entry

Trustee:

The Bank of New York Mellon

Calculation agent:

RBCCM. The calculation agent will make all determinations regarding the Trigger PLUS. Absent manifest error, all determinations of the calculation agent will be final and binding on you and us, without any liability on the part of the calculation agent. You will not be entitled to any compensation from us for any loss suffered as a result of any of the above determinations or confirmations by the calculation agent.

Terms incorporated in the master note:

All of the terms in "Summary Terms" (except the item captioned "Commissions and issue price") and the terms above the item captioned "Employee Retirement Income Security Act" and the item "Calculation agent" in "Additional Terms of the Trigger PLUS" of this document.

Information About the Underlying Index

All disclosures contained in this document regarding the underlying index, including, without limitation, its make-up, method of calculation, and changes in its components, have been derived from publicly available sources. The information reflects the policies of, and is subject to change by the index sponsor. The index sponsor, which owns the copyright and all other rights to the underlying index, has no obligation to continue to publish, and may discontinue publication of, the underlying index. The consequences of the index sponsor discontinuing publication of the underlying index are discussed above in the section entitled “Additional Terms of the Trigger PLUS—Discontinuation of/adjustments to the underlying index.” Neither we nor RBCCM accepts any responsibility for the calculation, maintenance or publication of the underlying index or any successor index.

The TOPIX® (“TPX”)

The TOPIX®, also known as the Tokyo Stock Price Index:

- is an equity index, and therefore cannot be invested in directly;
- does not file reports with the SEC because it is not an issuer;
- was first launched on July 1, 1969 with a base level of 100 as of January 4, 1968; and
- is sponsored, calculated published and disseminated by JPX Market Innovation & Research, Inc., which we refer to as JPXI.

The TOPIX® is a free-float adjusted market capitalization weighted index comprised of domestic common stocks listed on the Tokyo Stock Exchange (TSE) covering an extensive portion of the Japanese stock market. On April 4, 2022, JPXI began revisions to the TOPIX® in conjunction with the restructuring of the TSE into three new market segments: the Prime Market, Standard Market or Growth Market. Revisions to the TOPIX® will be carried out in stages from October 2022 to January 2025. Prior to April 4, 2022, the TOPIX® was comprised of all domestic common stocks listed on the First Section of the TSE. At that time, domestic stocks admitted to the TSE were assigned either to the TSE First Section, TSE Second Section, TSE Mothers, or JASDAQ (Standard and Growth). Additional information about the TOPIX® (including the top ten constituent stocks and weights and sector weights) is available on the following website:

jpx.co.jp/english/markets/indices/topix/. We are not incorporating by reference the website or any material it includes in this document.

Composition and Maintenance

As of April 4, 2022, the TOPIX® was comprised of all domestic common stocks listed on the TSE First Section as of April 1, 2022 (the business day before the TSE market restructuring), excluding certain types of securities such as subscription warrant securities and preferred equity contribution securities. During the period from April 4, 2022 to January 31, 2025, constituent revisions will be carried out in stages as described further below.

Calculation

The TOPIX® is a free-float adjusted market capitalization weighted index, which reflects movements in the market capitalization as measured from a base index value of 100 set on the base date of January 4, 1968. The discussion below describes the “price return” calculation of the TOPIX®.

JPXI calculates the TOPIX® by multiplying the base index value of 100 by the quotient of the current free-float-adjusted market value divided by the base market value. The resulting value is not expressed in Japanese yen but presented as a number of points, rounded to the nearest one hundredth. The formula for calculating the TOPIX® value can be expressed as follows:

$$\text{Index value} = \text{Base Index Value of 100} \times \frac{\text{Current free float adjusted market value}}{\text{Base market value}}$$

The current free-float-adjusted market value is the sum of the products of the price times the number of free-float-adjusted shares for each constituent stock.

The number of free-float-adjusted shares for this calculation is the total number of listed shares multiplied by free-float weight ratio multiplied by the cap-adjustment ratio. The total number of listed shares used for this purpose is usually the same as the number of actual listed shares. However, in some cases these numbers will differ due to corporate actions. For example, in the case of a stock split, the number of listed shares will increase on the additional listing date after the stock

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split becomes effective. On the other hand, the number of listed shares for index calculation purposes will increase on the ex-rights date, leading these two numbers to be different.

Free-float weight is the percentage of listed shares deemed to be available for trading in the market, and is calculated by JPXI for each constituent stock. Free-float weight is calculated by subtracting the quotient of non-free-float shares divided by listed shares from one. Free-float weight is reviewed once a year in order to reflect the latest share ownership distribution. JPXI estimates non-free-float shares using published materials such as securities reports. JPXI generally considers the following to be non-free float shares: shares held by the top ten major shareholders (with certain exceptions), treasury stocks, shares with limited voting rights as specified in Article 308(1) of the Companies Act, shares held by board members and other directors, shares held by other listed companies for investment purposes other than pure investment, and other shares deemed by JPXI to be unavailable for trading in the market. Securities deemed to be held by individuals indicated in the section of the state of corporate governance, etc. in the securities report will not be included in the estimation of non-free-float shares. The timing of the yearly free-float-weight review varies according to when listed companies announce earnings. In addition to the yearly review, extraordinary reviews may be conducted for events JPXI expects will significantly affect the free-float weight. These events include third-party allotment, conversion of preferred shares or exercise of subscription warrants, demerger, merger/stock swap, take-over bid, and other events JPXI deems will significantly affect free-float weight.

The upper weighting limit for any one constituent of the TOPIX® is 10%. If an issue's weight calculated by free-float adjusted market capitalization as of the last business day of every August is over the upper limit, a cap-adjustment ratio for adjustment of weight will be applied to said issue on the last business day of October. Even if the weight again exceeds the upper limit due to stock price movements or other reasons, the cap-adjustment ratio will not be changed until the last business day of the next October.

In the event of any increase or decrease in the current free-float-adjusted market value due to causes other than fluctuations in the stock market, such as public offerings, adjustments are made by JPXI to the base market value in order to maintain the continuity of the TOPIX®.

The adjusted base market value will equal the old base market value multiplied by the free-float-adjusted market value on the business day before the adjustment date plus or minus, as applicable, the adjustment amount divided by the free-float-adjusted market value on the business day before the adjustment date.

The adjustment amount for the foregoing calculation is the product of the change (the absolute value of the increase or decrease) in the number of shares used for index calculations times the price of the shares used for the adjustment.

Weighting Adjustments by Tradable Share Market Capitalization Criteria (only applicable from April 4, 2022 through January 31, 2025)

Designation of “phased weighting reduction constituents”

Of the constituents as of April 1, 2022, those that fall under both the following (a) and (b) will be designated as “phased weighting reduction constituents”:

First decision: The constituent's tradable share market capitalization is less than JPY 10 billion as of the “Notice on Whether the Listed Company is Meeting the Continued Listing Criteria for New Market Segments”, which has a base date of June 30, 2021, and

Second decision: The constituent's tradeable share market capitalization is less than JPY 10 billion at the end of the reporting period following the reporting period used in decision (a).

Any constituent applying for listing on the First Section through an initial listing (excluding technical listings) or section transfer after the “first set of revisions pertaining to cash equity market restructuring” were implemented on November 1, 2020 will not be subject to designation as a phased weighting reduction constituent based on tradable share market capitalization.

Adjustment to the weighting of phased weighting reduction constituents

The weighting of phased weighting reduction constituents will be reduced in 10 stages on the last business day of every quarter starting on the last business day of October 2022 (October 31, 2022), and these constituents will be removed from the index on the last business day of January 2025.

Said adjustments to the weighting of phased weighting reduction constituents will be calculated by multiplying the free-float weight by the transition factor (which will decrease from 1.0 to 0 in increments of 0.1).

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In order to check whether there have been changes to the tradeable share market capitalization of each phased weighting reduction constituent, a re-evaluation will be conducted, using tradable share market capitalization as of the end of the reporting period following the reporting period used for the second decision in (i)(b). If the tradable share market capitalization of a constituent has reached JPY 10 billion or more but the annual traded value ratio of said constituent has not reached 0.2 at this point, the transition factor will no longer decrease as of the fifth stage (it will stay at 0.6, the same as the fourth stage). If the tradable share market capitalization and the annual traded value ratio of a constituent have reached JPY 10 billion or more and 0.2 or more respectively at this point, the transition factor shall be increased to 1 in increments of 0.1 from the fifth stage and said constituent will be removed from the list of phased weighting reduction constituents. The traded value ratio used for the re-evaluation in (ii) is calculated using the sum of monthly traded value ratios from September 2022 to August 2023. The monthly traded value ratio shall be calculated as follows: (Median of daily traded value in trading sessions at TSE multiplied by the number of business days in the month) divided by the free-float adjusted market capitalization as of the last business day of the month before the transition factor was applied.

Transition Schedule

Transition Stage	Index Revision Date	Transition Factor
1st	Last business day of October 2022	x0.9
2nd	Last business day of January 2023	x0.8
3rd	Last business day of April 2023	x0.7
4th	Last business day of July 2023	x0.6
Re-evaluation		
5th	Last business day of October 2023	x0.5
6th	Last business day of January 2024	x0.4
7th	Last business day of April 2024	x0.3
8th	Last business day of July 2024	x0.2
9th	Last business day of October 2024	x0.1
10th (removed from TOPIX®)	Last business day of January 2025	x0

Non-Periodic Removal

Constituents which are delisted (excluding cases where the stock lists on another TSE market immediately), designated as securities to be delisted, or designated as securities on alert shall be removed.

If a constituent was designated as a security on alert as of the day of transition to the new market structure (April 4, 2022), said constituent was removed from the TOPIX® on the last business day of April 2022.

Non-Periodic Inclusion

Stocks which carry out initial listings (excluding technical listings) on or transfer to the Prime Market will be included in the TOPIX® on the last business day of the month following the month containing the listing date or transfer date.

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In the event a constituent of the TOPIX® is delisted due to a stock transfer, stock swap, merger for creating a new company or demerger, and the newly created, surviving or succeeding company is listed without delay, JPXI will add the new company to the index.

In the event a constituent of the TOPIX® is delisted due to a stock swap or absorption-type merger, in which the surviving company or the parent company holding all shares of the constituent company is not a constituent of the TOPIX®, then JPXI will add the surviving company or the parent company to the index.

For issues that are removed from the index due to designation as securities on alert, but have had said designation cancelled as of the last business day of August 2023, if the company meets the same criteria as for the re-evaluation in “Adjustment to the weighting of phased weighting reduction constituents” above (i.e., tradeable share market capitalization of JPY 10 billion or more and annual traded value ratio of 0.2 or more), said company shall be added to the TOPIX® on the last business day of October 2023.

Dates of Constituent Inclusion and Removal

	Event	Adjustment Date	Stock Price Used for Adjustment
Inclusion	A company is to be newly listed on the Prime Market	Last business day of the month after such listing	Stock price at the end of trading on the business day before adjustment date
Inclusion	New listing of a newly formed company resulting from a corporate consolidation, stock transfer, stock swap, merger for creating a new company or demerger that results in a TOPIX® constituent being delisted and the new company being included in TOPIX®.	New listing date. If the initial listing date falls on a holiday, it will be the following business day	Base price
Inclusion	Delisting of a TOPIX® constituent due to a stock swap or an absorption-type merger with a surviving stock that is not a TOPIX® constituent, and the surviving stock is included in TOPIX®	Delisting date	Stock price at the end of trading on the business day before adjustment date
Inclusion	A company is to be transferred to the Prime Market	Last business day of the month after such change	Stock price at the end of trading on the business day before adjustment date
Removal	New listing of a newly formed company resulting from a corporate consolidation, stock transfer, stock swap, merger for creating a new company or demerger that results in a TOPIX® constituent being delisted and the new company being included in TOPIX®.	Listing date of the newly formed company (normally two business days following delisting date)	Stock price at the end of trading on the business day before the delisting date. The stock price at the end of trading on the business day before the delisting date is used to calculate TOPIX® for the period from the delisting date to the removal date.
Removal	A constituent is to be delisted due to a reason other than as described in the preceding scenario	Delisting date	Stock price at the end of trading on the business day before adjustment date

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Removal	A constituent's securities are designated to be delisted or designated as a security on alert	Four business days after designation. If the designation date falls on a holiday, it will be the next business day.	Stock price at the end of trading on the business day before adjustment date
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Change in the Number of Shares

Changes in the number of shares and the price of the shares for adjustments to the base market value will be made as described in the table below.

Event	Adjustment Date	Stock Price Used for Adjustment
Change of free-float weight	Date of change	Stock price at the end of trading on the business day before adjustment date
Public offering	Additional listing date (day after payment date). If listing date falls on a holiday, it will be the next business day	Stock price at the end of trading on the business day before adjustment date
Allocation of new shares to a third party	Five business days after additional listing date (two business days after payment date)	Stock price at the end of trading on the business day before adjustment date
Capital increase through allotment to shareholders	Ex-rights date	Payment price per share
Exercise of subscription warrants	Last business day of the month following exercise	Stock price at the end of trading on the business day before adjustment date
Conversion of preferred shares	Last business day of the month following conversion	Stock price at the end of trading on the business day before adjustment date
Cancellation of treasury stock	Last business day of the month following cancellation	Stock price at the end of trading on the business day before adjustment date
Merger or stock swaps between a non-surviving constituent and another constituent	Delisting date of the non-surviving constituent	Stock price at the end of trading on the business day before adjustment date
Merger or stock swaps other than that described above	Listing change date (effective date)	Stock price at the end of trading on the business day before adjustment date
Rights offering (limited to case where the allotted subscription warrant securities are listed; the case where the allotted subscription warrant securities are not listed is treated as "Exercise of subscription warrants")	Ex-rights date	Payment price per share

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Offering for sale of shares held by the Japanese government (Nippon Telegraph, Telephone and Japan Tobacco and Japan Post Holdings only)	Date determined by JPXI (generally the delivery date)	Stock price at the end of trading on the business day before adjustment date
Demerger (absorption-type)	Listing change date (the effective date)	Stock price at the end of trading on the business day before adjustment date
Other adjustments	Last business day of the month in which the information appears in "Sho-ho" (TSE Notice) or the last business day of the following month	Stock price at the end of trading on the business day before adjustment date

No adjustments will be made to the base market value in the case of a stock split, reverse stock split, or gratis allotment of shares (limited to cases where treasury stock is allotted).

Retroactive adjustments will not be made to revise the figures of the index that have already been calculated and disseminated even if issuing companies file amendments on previously released information.

Market Disruption

If trading in a certain constituent is halted, JPXI regards the constituent's share price for purposes of calculating the TOPIX® to be unchanged. Where an event that is not specified in the rules of the TOPIX® occurs, or if JPXI decides that it is impossible to use its existing methods to calculate the TOPIX®, JPXI may use an alternate method of index calculation as it deems valid.

License Agreement

We expect to enter into a license agreement with JPXI, in exchange for a fee, whereby we will be permitted to use the TOPIX® in connection with the offer and sale of the Trigger PLUS. We are not affiliated with JPXI; the only relationship between JPXI and us is the licensing of the use of the TOPIX® and trademarks relating to the TOPIX®.

The Trigger PLUS is not sponsored, endorsed or promoted by JPXI. No inference should be drawn from the information contained in this document that JPXI makes any representation or warranty, implied or express, to us, any holder of the Trigger PLUS or any member of the public regarding the advisability of investing in securities generally or in the Trigger PLUS in particular or the ability of the TOPIX® to track general stock market performance.

JPXI determines, composes and calculates the TOPIX® without regard to the Trigger PLUS. JPXI has no obligation to take into account your interest, or that of anyone else having an interest, in the Trigger PLUS in determining, composing or calculating TOPIX®. JPXI is not responsible for and has not participated in the determination of the terms, prices or amount of the Trigger PLUS and will not be responsible for or participate in any determination or calculation regarding the principal amount of the Trigger PLUS payable at the stated maturity date. JPXI has no obligation or liability in connection with the administration, marketing or trading of the Trigger PLUS.

Neither we nor any of our affiliates accepts any responsibility for the calculation, maintenance or publication of the TOPIX® or any successor index. JPXI disclaims all responsibility for any errors or omissions in the calculation and dissemination of the TOPIX® or the manner in which the TOPIX® is applied in determining any initial index level or final index level or any amount payable upon maturity of the Trigger PLUS.

TOPIX® Index Value and TOPIX® Marks are subject to the proprietary rights owned by JPXI and JPXI owns all rights and know-how relating to the TOPIX® such as calculation, publication and use of TOPIX® Index Value and relating to TOPIX® Marks. JPXI shall reserve the rights to change the methods of calculation or publication, to cease the calculation or publication of TOPIX® Index Value or to change TOPIX® Marks or cease the use thereof. JPXI makes no warranty or representation whatsoever, either as to the results stemmed from the use of TOPIX® Index Value and TOPIX® Marks or as to the figure at which TOPIX® Index Value stands on any particular day. JPXI gives no assurance regarding accuracy or completeness of TOPIX® Index Value and data contained therein. Further, JPXI shall not be liable for the miscalculation, incorrect publication, delayed or interrupted publication of TOPIX® Index Value. No securities are in any way sponsored, endorsed or promoted by JPXI. JPXI shall not bear any obligation to give an explanation of the Trigger PLUS or an advice on investments to any purchaser of the Trigger PLUS or to the public. JPXI neither selects specific stocks or groups thereof nor takes into account any needs of the issuing company or any purchaser of the Trigger PLUS, for calculation of TOPIX®

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Index Value. Including but not limited to the foregoing, JPXI shall not be responsible for any damage resulting from the issue and sale of the Trigger PLUS.

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Historical Information

The table below sets forth the published high and low closing levels of the underlying index for each quarter in the period from January 1, 2018 through October 31, 2023. The graph below sets forth the daily closing levels of the underlying index for that period.

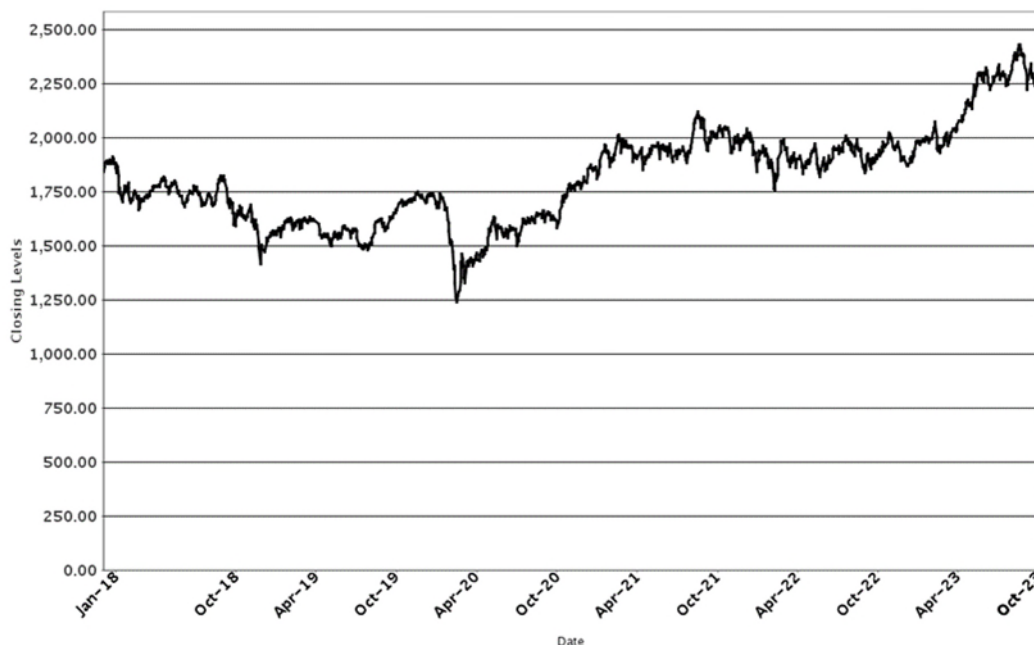
We obtained the information below from Bloomberg Financial Markets, without independent verification.

You should not take the historical levels of the underlying index as an indication of future performance, and no assurance can be given as to the level of the underlying index on the valuation date.

The TOPIX®

Information as of market close on October 31, 2023:

Bloomberg Symbol:	TPX	52 Weeks Ago:	1,929.43
Current Index Level:	2,253.72	52 Week High (on 9/19/2023):	2,430.30
		52 Week Low (on 1/4/2023):	1,868.15



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The TOPIX®	High	Low
2018		
First Quarter	1,911.07	1,664.94
Second Quarter	1,815.25	1,703.80
Third Quarter	1,822.44	1,676.20
Fourth Quarter	1,824.03	1,415.55
2019		
First Quarter	1,627.59	1,471.16
Second Quarter	1,630.68	1,498.96
Third Quarter	1,623.27	1,478.03
Fourth Quarter	1,747.20	1,568.87
2020		
First Quarter	1,744.16	1,236.34
Second Quarter	1,630.72	1,325.13
Third Quarter	1,661.93	1,496.06
Fourth Quarter	1,819.18	1,579.33
2021		
First Quarter	2,012.21	1,791.22
Second Quarter	1,983.54	1,849.04
Third Quarter	2,118.87	1,880.68
Fourth Quarter	2,055.56	1,926.37
2022		
First Quarter	2,039.27	1,758.89
Second Quarter	1,969.98	1,818.94
Third Quarter	2,006.99	1,835.94
Fourth Quarter	2,018.80	1,847.58
2023		
First Quarter	2,071.09	1,868.15
Second Quarter	2,300.36	1,961.28
Third Quarter	2,430.30	2,221.48
Fourth Quarter (through October 31, 2023)	2,342.49	2,218.89

Canadian Federal Income Tax Consequences

An investor should read carefully the description of material Canadian federal income tax considerations relevant to a Non-resident Holder owning debt securities under "Tax Consequences—Canadian Taxation" in the accompanying prospectus. The Canadian tax disclosure in the prospectus also assumes that a Non-resident Holder (i) does not dispose of the Trigger PLUS to an entity that is a "specified entity" (as defined in proposed amendments released by the Department of Finance (Canada) on April 29, 2022) (the "Hybrid Mismatch Proposals") with respect to such holder or in respect of which the holder is a "specified entity"; (ii) does not dispose of the Trigger PLUS under, or in connection with a "structured arrangement" (as defined in the Hybrid Mismatch Proposals); and (iii) is not an entity in respect of which Royal Bank of Canada is a "specified entity".

Supplemental Discussion of U.S. Federal Income Tax Consequences

The following, together with the discussion of U.S. federal income taxation in the accompanying prospectus and prospectus supplement, is a general description of the material U.S. tax considerations relating to the Trigger PLUS. It does not purport to be a complete analysis of all tax considerations relating to the Trigger PLUS. Prospective purchasers of the Trigger PLUS should consult their tax advisors as to the consequences under the tax laws of the country of which they are resident for tax purposes and the tax laws of Canada and the U.S. of acquiring, holding and disposing of the Trigger PLUS and receiving payments under the Trigger PLUS. This summary is based upon the law as in effect on the date of this document and is subject to any change in law that may take effect after such date.

Supplemental U.S. Tax Considerations

The following section supplements the discussion of U.S. federal income taxation in the accompanying prospectus and prospectus supplement. It applies only to those initial holders who are not excluded from the discussion of U.S. federal income taxation in the accompanying prospectus. It does not apply to holders subject to special rules including holders subject to Section 451(b) of the Code.

NO STATUTORY, JUDICIAL OR ADMINISTRATIVE AUTHORITY DIRECTLY DISCUSSES HOW THE TRIGGER PLUS SHOULD BE TREATED FOR U.S. FEDERAL INCOME TAX PURPOSES. AS A RESULT, THE U.S. FEDERAL INCOME TAX CONSEQUENCES OF AN INVESTMENT IN THE TRIGGER PLUS ARE UNCERTAIN. BECAUSE OF THE UNCERTAINTY, YOU SHOULD CONSULT YOUR TAX ADVISOR IN DETERMINING THE U.S. FEDERAL INCOME TAX AND OTHER TAX CONSEQUENCES OF YOUR INVESTMENT IN THE TRIGGER PLUS, INCLUDING THE APPLICATION OF STATE, LOCAL OR OTHER TAX LAWS AND THE POSSIBLE EFFECTS OF CHANGES IN FEDERAL OR OTHER TAX LAWS.

We will not attempt to ascertain whether any of the entities whose stock is included in the underlying index would be treated as a "passive foreign investment company" within the meaning of Section 1297 of the Code, or a "U.S. real property holding corporation" within the meaning of Section 897 of the Code. If any of the entities whose stock is included in the underlying index were so treated, certain adverse U.S. federal income tax consequences could possibly apply to U.S. and non-U.S. holders, respectively. You should refer to any available information filed with the SEC and other authorities by the entities whose stock is included in the underlying index and consult your tax advisor regarding the possible consequences to you in this regard.

In the opinion of our special U.S. tax counsel, Ashurst LLP, it would generally be reasonable to treat the Trigger PLUS as a pre-paid cash-settled derivative contract in respect of the underlying index for U.S. federal income tax purposes, and the terms of the Trigger PLUS require a holder (in the absence of a change in law or an administrative or judicial ruling to the contrary) to treat the Trigger PLUS for all tax purposes in accordance with such characterization. If the Trigger PLUS are so treated, a U.S. holder should generally recognize capital gain or loss upon the sale, exchange or maturity of the Trigger PLUS in an amount equal to the difference between the amount a holder receives at such time and the holder's tax basis in the Trigger PLUS. In general, a U.S. holder's tax basis in the Trigger PLUS will be equal to the price the holder paid for the Trigger PLUS. Capital gain recognized by an individual U.S. holder is generally taxed at preferential rates where the property is held for more than one year and is generally taxed at ordinary income rates where the property is held for one year or less. The deductibility of capital losses is subject to limitations.

Alternative Treatments. Alternative tax treatments of the Trigger PLUS are also possible and the IRS might assert that a treatment other than that described above is more appropriate. For example, it is possible to treat the Trigger PLUS, and the IRS might assert that the Trigger PLUS should be treated, as a single debt instrument. Pursuant to such characterization, since the Trigger PLUS have a term that exceeds one year, such a debt instrument would be subject to the special tax rules governing contingent payment debt instruments. If the Trigger PLUS are so treated, a holder would generally be required to accrue interest income over the term of the Trigger PLUS based upon the yield at which we would issue a non-contingent

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fixed-rate debt instrument with terms and conditions similar to the Trigger PLUS. In addition, any gain a holder might recognize upon the sale, exchange or maturity of the Trigger PLUS would generally be ordinary income and any loss recognized by a holder at such time would generally be ordinary loss to the extent of interest that same holder included in income in the current or previous taxable years in respect of the Trigger PLUS, and thereafter, would be capital loss.

Because of the absence of authority regarding the appropriate tax characterization of the Trigger PLUS, it is also possible that the IRS could seek to characterize the Trigger PLUS in a manner that results in tax consequences that are different from those described above. For example, the IRS could possibly assert that any gain or loss that a holder may recognize upon the sale, exchange or maturity of the Trigger PLUS should be treated as ordinary gain or loss.

The IRS has released a notice that may affect the taxation of holders of the Trigger PLUS. According to the notice, the IRS and the U.S. Treasury Department are actively considering whether the holder of an instrument such as the Trigger PLUS should be required to accrue ordinary income on a current basis. It is not possible to determine what guidance will ultimately be issued, if any. It is possible, however, that under such guidance, holders of the Trigger PLUS will ultimately be required to accrue income currently and this could be applied on a retroactive basis. The IRS and the U.S. Treasury Department are also considering other relevant issues, including whether additional gain or loss from such instruments should be treated as ordinary or capital and whether the constructive ownership rules of Section 1260 of the Code which very generally can operate to recharacterize certain long-term capital gains as ordinary income and impose an interest charge, might be applied to such instruments. Further, future legislation, including legislation based on bills previously introduced in Congress, may tax all derivative instruments on a mark-to-market basis, requiring holders of such derivative instruments to take into account annually gains and losses on such instruments as ordinary income. The adoption of such legislation or similar proposals may significantly impact the tax consequences from an investment in the Trigger PLUS, including the timing and character of income and gain on the Trigger PLUS. Holders are urged to consult their tax advisors concerning the significance, and the potential impact, of the above considerations. We intend to treat the Trigger PLUS for U.S. federal income tax purposes in accordance with the treatment described in this document unless and until such time as the U.S. Treasury Department and IRS determine that some other treatment is more appropriate.

Backup Withholding and Information Reporting. Payments made with respect to the Trigger PLUS and proceeds from the sale or exchange of the Trigger PLUS may be subject to a backup withholding tax unless, in general, the holder complies with certain procedures or is an exempt recipient. Any amounts so withheld generally will be refunded by the IRS or allowed as a credit against the holder's U.S. federal income tax liability, provided the holder makes a timely filing of an appropriate tax return or refund claim to the IRS.

Reports will be made to the IRS and to holders that are not exempted from the reporting requirements.

Non-U.S. Holders. The following discussion applies to non-U.S. holders of the Trigger PLUS. A non-U.S. holder is a beneficial owner of a Trigger PLUS that, for U.S. federal income tax purposes, is a non-resident alien individual, a foreign corporation, or a foreign estate or trust.

Except as described below, a non-U.S. holder will generally not be subject to U.S. federal income or withholding tax for amounts paid in respect of the Trigger PLUS, provided that (i) the holder complies with any applicable certification requirements, (ii) the payment is not effectively connected with the conduct by the holder of a U.S. trade or business, and (iii) if the holder is a non-resident alien individual, such holder is not present in the U.S. for 183 days or more during the taxable year of the sale, exchange or maturity of the Trigger PLUS. In the case of (ii) above, the holder generally would be subject to U.S. federal income tax with respect to any income or gain in the same manner as if the holder were a U.S. holder and, in the case of a holder that is a corporation, the holder may also be subject to a branch profits tax equal to 30% (or such lower rate provided by an applicable U.S. income tax treaty) of a portion of its earnings and profits for the taxable year that are effectively connected with its conduct of a U.S. trade or business, subject to certain adjustments. Payments made to a non-U.S. holder may be subject to information reporting and to backup withholding unless the holder complies with applicable certification and identification requirements as to its foreign status.

Under Section 871(m) of the Code, a "dividend equivalent" payment is treated as a dividend from sources within the United States. Such payments generally would be subject to a 30% U.S. withholding tax if paid to a non-U.S. holder. Under U.S. Treasury Department regulations, payments (including deemed payments) with respect to equity-linked instruments ("ELIs") that are "specified ELIs" may be treated as dividend equivalents if such specified ELIs reference, directly or indirectly, an interest in an "underlying security," which is generally any interest in an entity taxable as a corporation for U.S. federal income tax purposes if a payment with respect to such interest could give rise to a U.S. source dividend. However, the IRS has issued guidance that states that the U.S. Treasury Department and the IRS intend to amend the effective dates of the U.S. Treasury Department regulations to provide that withholding on dividend equivalent payments will not apply to specified ELIs that are not delta-one instruments and that are issued before January 1, 2025. Based on our determination that the Trigger PLUS are not delta-one instruments, non-U.S. holders should not be subject to withholding on dividend

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equivalent payments, if any, under the Trigger PLUS. However, it is possible that the Trigger PLUS could be treated as deemed reissued for U.S. federal income tax purposes upon the occurrence of certain events affecting the underlying index or the Trigger PLUS (for example, upon the underlying index rebalancing), and following such occurrence the Trigger PLUS could be treated as subject to withholding on dividend equivalent payments. Non-U.S. holders that enter, or have entered, into other transactions in respect of the underlying index or the Trigger PLUS should consult their tax advisors as to the application of the dividend equivalent withholding tax in the context of the Trigger PLUS and their other transactions. If any payments are treated as dividend equivalents subject to withholding, we (or the applicable withholding agent) would be entitled to withhold taxes without being required to pay any additional amounts with respect to amounts so withheld.

As discussed above, alternative characterizations of the Trigger PLUS for U.S. federal income tax purposes are possible. Should an alternative characterization, by reason of change or clarification of the law, by regulation or otherwise, cause payments as to the Trigger PLUS to become subject to withholding tax, we (or the applicable withholding agent) will withhold tax at the applicable statutory rate. The IRS has also indicated that it is considering whether income in respect of instruments such as the Trigger PLUS should be subject to withholding tax. We will not be required to pay any additional amounts in respect of such withholding. Prospective investors should consult their own tax advisors in this regard.

Foreign Account Tax Compliance Act. The Foreign Account Tax Compliance Act ("FATCA") imposes a 30% U.S. withholding tax on certain U.S.-source payments, including interest (and original issue discount), dividends, and other fixed or determinable annual or periodical gains, profits, and income ("Withholdable Payments"), if paid to a foreign financial institution (including amounts paid to a foreign financial institution on behalf of a holder), unless such institution enters into an agreement with the U.S. Treasury Department to collect and provide to the U.S. Treasury Department certain information regarding U.S. financial account holders, including certain account holders that are foreign entities with U.S. owners, with such institution or otherwise complies with FATCA. In addition, the Trigger PLUS may constitute a "financial account" for these purposes and thus, may be subject to information reporting requirements pursuant to FATCA. FATCA also generally imposes a withholding tax of 30% on Withholdable Payments made to a non-financial foreign entity, unless that entity provides the withholding agent with a certification that it does not have any substantial U.S. owners or a certification identifying the direct and indirect substantial U.S. owners of the entity. Under certain circumstances, a holder may be eligible for refunds or credits of such taxes.

The U.S. Treasury Department has proposed regulations that eliminate the requirement of FATCA withholding on payments of gross proceeds upon the sale or disposition of financial instruments. The U.S. Treasury Department has indicated that taxpayers may rely on these proposed regulations pending their finalization, and the discussion above assumes the proposed regulations will be finalized in their proposed form with retroactive effect. If we (or the applicable withholding agent) determine withholding is appropriate with respect to the Trigger PLUS, tax will be withheld at the applicable statutory rate, and we will not pay any additional amounts in respect of such withholding. Therefore, if such withholding applies, any payments on the Trigger PLUS will be significantly less than what you would have otherwise received. Depending on your circumstances, these amounts withheld may be creditable or refundable to you. Foreign financial institutions and non-financial foreign entities located in jurisdictions that have an intergovernmental agreement with the United States governing FATCA may be subject to different rules. Prospective investors are urged to consult with their own tax advisors regarding the possible implications of FATCA on their investment in the Trigger PLUS.

Use of Proceeds and Hedging

The net proceeds from the sale of the Trigger PLUS will be used as described under “Use of Proceeds” in the accompanying prospectus supplement and prospectus and to hedge market risks of Royal Bank of Canada associated with its obligation to make the payment at maturity on the Trigger PLUS. The initial public offering price of the Trigger PLUS includes the underwriting discount and commission and the estimated cost of hedging our obligations under the Trigger PLUS.

Supplemental Information Regarding Plan of Distribution; Conflicts of Interest

Pursuant to the terms of a distribution agreement, RBCCM, an affiliate of Royal Bank of Canada, will purchase the Trigger PLUS from Royal Bank of Canada for distribution to Morgan Stanley Wealth Management. RBCCM will act as agent for the Trigger PLUS and will receive a fee of up to \$35.00 per \$1,000 stated principal amount and will pay to Morgan Stanley Wealth Management a fixed sales commission of up to \$30.00 for each of the Trigger PLUS they sell. Of the amount per \$1,000 stated principal amount received by RBCCM, RBCCM will pay Morgan Stanley Wealth Management a structuring fee of \$5.00 for each Trigger PLUS. The costs included in the original issue price of the Trigger PLUS will include a fee paid by RBCCM to LFT Securities, LLC, an entity in which an affiliate of Morgan Stanley Wealth Management has an ownership interest, for providing certain electronic platform services with respect to this offering.

Morgan Stanley Wealth Management may reclaim selling concessions allowed to individual brokers within Morgan Stanley Wealth Management in connection with the offering if, within 30 days of the offering, Royal Bank of Canada repurchases the Trigger PLUS distributed by such brokers.

Delivery of the Trigger PLUS will be made against payment for the Trigger PLUS on November 3, 2023, which is the third business day following the pricing date (this settlement cycle being referred to as “T+3”). Under Rule 15c6-1 of the Exchange Act, trades in the secondary market generally are required to settle in two business days, unless the parties to any such trade expressly agree otherwise. Accordingly, purchasers who wish to trade the Trigger PLUS more than two business days prior to the original issue date will be required to specify alternative settlement arrangements to prevent a failed settlement.

In addition, RBCCM or another of its affiliates or agents may use this document in market-making transactions after the initial sale of the Trigger PLUS, but is under no obligation to do so and may discontinue any market-making activities at any time without notice.

For additional information as to the relationship between us and RBCCM, please see the section “Plan of Distribution—Conflicts of Interest” in the accompanying prospectus.

The value of the Trigger PLUS shown on your account statement may be based on RBCCM’s estimate of the value of the Trigger PLUS if RBCCM or another of our affiliates were to make a market in the Trigger PLUS (which it is not obligated to do). That estimate will be based on the price that RBCCM may pay for the Trigger PLUS in light of then prevailing market conditions, our creditworthiness and transaction costs. For an initial period of approximately twenty four months, the value of the Trigger PLUS that may be shown on your account statement is expected to be higher than RBCCM’s estimated value of the Trigger PLUS at that time. This is because the estimated value of the Trigger PLUS will not include the agent’s commission and our hedging costs and profits; however, the value of the Trigger PLUS shown on your account statement during that period is initially expected to be a higher amount, reflecting the addition of the agent’s commission and our estimated costs and profits from hedging the Trigger PLUS. This excess is expected to decrease over time until the end of this period, and we reserve the right to shorten this period. After this period, if RBCCM repurchases your Trigger PLUS, it expects to do so at prices that reflect its estimated value.

Each of MSWM and any other broker-dealer offering the Trigger PLUS have not offered, sold or otherwise made available and will not offer, sell or otherwise make available any of the Trigger PLUS to any retail investor in the European Economic Area (“EEA”). For these purposes, the expression “offer” includes the communication in any form and by any means of sufficient information on the terms of the offer and the Trigger PLUS to be offered so as to enable an investor to decide to purchase or subscribe the Trigger PLUS, and a “retail investor” means a person who is one (or more) of: (a) a retail client, as defined in point (11) of Article 4(1) of Directive 2014/65/EU (as amended, “MiFID II”); or (b) a customer, within the meaning of Directive (EU) 2016/97, as amended, where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II; or (c) not a qualified investor as defined in Regulation (EU) No 2017/1129 (the “Prospectus Regulation”). Consequently, no key information document required by Regulation (EU) No 1286/2014 (as amended, the “PRIIPs Regulation”) for offering or selling the Trigger PLUS or otherwise making them available to retail

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investors in the EEA has been prepared, and therefore, offering or selling the Trigger PLUS or otherwise making them available to any retail investor in the EEA may be unlawful under the PRIIPs Regulation.

Each of MSWM and any other broker-dealer offering the Trigger PLUS have not offered, sold or otherwise made available and will not offer, sell or otherwise make available any of the Trigger PLUS to, any retail investor in the United Kingdom. For these purposes, a retail investor means a person who is one (or more) of: (i) a retail client, as defined in point (8) of Article 2 of Regulation (EU) No 2017/565 as it forms part of domestic law by virtue of the European Union (Withdrawal) Act 2018; or (ii) a customer within the meaning of the provisions of the Financial Services and Markets Act 2000 (the “FSMA”) and any rules or regulations made under the FSMA to implement Directive (EU) 2016/97, where that customer would not qualify as a professional client, as defined in point (8) of Article 2(1) of Regulation (EU) No 600/2014 as it forms part of domestic law by virtue of the European Union (Withdrawal) Act 2018. Consequently no key information document required by Regulation (EU) No 1286/2014 as it forms part of domestic law by virtue of the European Union (Withdrawal) Act 2018 (the “UK PRIIPs Regulation”) for offering or selling the Trigger PLUS or otherwise making them available to retail investors in the UK has been prepared and therefore offering or selling the Trigger PLUS or otherwise making them available to any retail investor in the UK may be unlawful under the UK PRIIPs Regulation.

Structuring the Trigger PLUS

The Trigger PLUS are our debt securities, the return on which is linked to the performance of the underlying index. As is the case for all of our debt securities, including our structured notes, the economic terms of the Trigger PLUS reflect our actual or perceived creditworthiness at the time of pricing. In addition, because structured notes result in increased operational, funding and liability management costs to us, we typically borrow the funds under these Trigger PLUS at a rate that is more favorable to us than the rate that we might pay for a conventional fixed or floating rate debt security of comparable maturity. Using this relatively lower implied borrowing rate, rather than the secondary market rate, along with the fees and expenses associated with structured notes, reduced the initial estimated value of the Trigger PLUS at the time their terms were set. Unlike the estimated value that is set forth on the cover page of this pricing supplement, any value of the Trigger PLUS determined for purposes of a secondary market transaction may be based on a different funding rate, which may result in a lower value for the Trigger PLUS than if our initial internal funding rate were used.

In order to satisfy our payment obligations under the Trigger PLUS, we may choose to enter into certain hedging arrangements (which may include call options, put options or other derivatives) on the issue date with RBCCM or one of our other subsidiaries. The terms of these hedging arrangements take into account a number of factors, including our creditworthiness, interest rate movements, the volatility of the underlying index, and the tenor of the Trigger PLUS. The economic terms of the Trigger PLUS and their initial estimated value depend in part on the terms of these hedging arrangements.

The lower implied borrowing rate, the underwriting commission and the hedging-related costs relating to the Trigger PLUS reduced the economic terms of the Trigger PLUS to you and resulted in the initial estimated value for the Trigger PLUS on the pricing date being less than their public offering price. See “Risk Factors—The initial estimated value of the Trigger PLUS is less than the price to the public” above.

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Validity of the Trigger PLUS

In the opinion of Norton Rose Fulbright Canada LLP, the issue and sale of the Trigger PLUS has been duly authorized by all necessary corporate action of the Issuer in conformity with the Indenture, and when the Trigger PLUS have been duly executed, authenticated and issued in accordance with the Indenture and delivered against payment therefor, the Trigger PLUS will be validly issued and, to the extent validity of the Trigger PLUS is a matter governed by the laws of the Province of Ontario or Québec, or the laws of Canada applicable therein, will be valid obligations of the Issuer, subject to equitable remedies which may only be granted at the discretion of a court of competent authority, subject to applicable bankruptcy, to rights to indemnity and contribution under the Trigger PLUS or the Indenture which may be limited by applicable law, to insolvency and other laws of general application affecting creditors' rights, to limitations under applicable limitations statutes, and to limitations as to the currency in which judgments in Canada may be rendered, as prescribed by the Currency Act (Canada). This opinion is given as of the date hereof and is limited to the laws of the Provinces of Ontario and Québec and the federal laws of Canada applicable thereto. In addition, this opinion is subject to customary assumptions about the Trustee's authorization, execution and delivery of the Indenture and the genuineness of signatures and certain factual matters, all as stated in the letter of such counsel dated September 14, 2021, which has been filed as Exhibit 5.3 to the Issuer's Form 6-K filed with the SEC dated September 14, 2021.

In the opinion of Ashurst LLP, when the Trigger PLUS have been duly completed in accordance with the Indenture and issued and sold as contemplated by the prospectus supplement and the prospectus, the Trigger PLUS will be valid, binding and enforceable obligations of the Issuer, entitled to the benefits of the Indenture, subject to applicable bankruptcy, insolvency, fraudulent transfer, reorganization, moratorium and similar laws of general applicability relating to or affecting creditors' rights and subject to general principles of equity, public policy considerations and the discretion of the court before which any suit or proceeding may be brought. This opinion is given as of the date hereof and is limited to the laws of the State of New York. This opinion is subject to customary assumptions about the Trustee's authorization, execution and delivery of the Indenture and the genuineness of signatures and to such counsel's reliance on the Issuer and other sources as to certain factual matters, all as stated in the legal opinion dated September 14, 2021, which has been filed as Exhibit 5.4 to the Issuer's Form 6-K dated September 14, 2021.