

STRUCTURED INVESTMENTS

Opportunities in International Equities

\$21,983,000 Dual Directional Trigger Jump Securities Based on the Performance of the MSCI Emerging Markets Index due November 3, 2028

Principal at Risk Securities

The Dual Directional Trigger Jump Securities (the "securities") 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 **not decreased**, investors will receive the stated principal amount of their investment plus a positive return equal to the greater of (1) the digital return and (2) the underlying index return. If the level of the underlying index has decreased, but not by more than 25%, investors will receive the stated principal amount plus an unleveraged positive return equal to the absolute value of the percentage decrease, which will effectively be limited to a positive return of 25%. However, if the level of the underlying index has **decreased by more than 25%**, investors will lose 1% of the stated principal amount for every 1% decrease in the final index level from the initial index level. These securities 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 potential benefit of the digital return and the unleveraged absolute return feature, which applies to a limited range of negative performance of the underlying index.

Investors may lose their entire initial investment in the securities. The securities are senior notes issued as part of Royal Bank of Canada's Global Medium-Term Notes, Series I program. All payments on the securities are subject to the credit risk of Royal Bank of Canada.

SUMMARY TERMS

Issuer:	Royal Bank of Canada		
Underlying index:	MSCI Emerging Markets Index (Bloomberg symbol: "MXEF")		
Aggregate principal amount:	\$21,983,000		
Stated principal amount:	\$1,000 per security		
Issue price:	\$1,000 per security		
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 or equal to</i> the initial index level,</p> <ul style="list-style-type: none"> \$1,000 + the product of (a) \$1,000 and (b) the greater of (1) the digital return and (2) the underlying index return <p>If the final index level is <i>less than</i> the initial index level but is <i>greater than or equal to</i> the trigger level,</p> <ul style="list-style-type: none"> \$1,000 + (\$1,000 × absolute index return) <p><i>In this scenario, you will receive a 1% positive return on the securities for each 1% decrease in the level of the underlying index. In no event will this amount exceed the stated principal amount plus \$250.00.</i></p> <p>If the final index level is <i>less than</i> the trigger level,</p> <ul style="list-style-type: none"> \$1,000 + (\$1,000 × underlying index return) <p><i>Under these circumstances, the payment at maturity will be less than \$750.00. You will lose at least 25% and possibly all of the stated principal amount if the final index level is less than the trigger level.</i></p>		
Digital return:	46.25%		
Underlying index return:	(final index level – initial index level) / initial index level		
Absolute index return:	The absolute value of the underlying index return. For example, a -5% underlying index return will result in a +5% absolute index return		
Trigger level:	686.40, which is equal to 75% of the initial index level		
Initial index level:	915.20, 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:	78016NW29 / US78016NW299		
Listing:	The securities will not be listed on any securities exchange.		
Agent:	RBC Capital Markets, LLC ("RBCCM").		
Commissions and issue price:	Price to public	Agent's commissions	Proceeds to issuer
Per security	\$1,000.00	\$30.00 ⁽¹⁾ \$5.00 ⁽²⁾	\$965.00
Total	\$21,983,000	\$659,490 \$109,915	\$21,213,595

⁽¹⁾ RBCCM, acting as agent for Royal Bank of Canada, will receive a fee of \$35 per \$1,000 stated principal amount and will pay to Morgan Stanley Wealth Management ("MSWM") a fixed sales commission of \$30 for each security 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 for each security.

The initial estimated value of the securities as of the pricing date was \$954.25 per \$1,000 security, which is less than the price to the public. The market value of the securities at any time will reflect many factors, cannot be predicted with accuracy, and may be less than this amount.

An investment in the securities involves certain risks. See "Risk Factors" beginning on page 6 of this document, 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 Securities" 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 securities or passed upon the adequacy or accuracy of this document. Any representation to the contrary is a criminal offense. The securities 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 securities are not subject to conversion into our common shares under subsection 39.2(2.3) of the Canada Deposit Insurance Corporation Act.

Investment Summary

Dual Directional Trigger Jump Securities

Principal at Risk Securities

The Dual Directional Trigger Jump Securities Based on the Performance of the MSCI Emerging Markets Index, due November 3, 2028 (the “securities”) can be used:

- As an alternative to direct exposure to the underlying index that provides a fixed positive return of 46.25% if the underlying index has not decreased from the pricing date to the valuation date, and that provides uncapped 1-to-1 participation in any increase in the level of the underlying index if its level has increased by more than 46.25%.
- To obtain an unleveraged positive return for a limited range of negative performance of the underlying index.
- To enhance returns and potentially outperform the underlying index in a moderately bullish or moderately bearish scenario.
- 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 securities are exposed on a 1:1 basis to the full negative performance of the underlying index if the final index level is less than the trigger level.

Maturity:	Approximately 5 years
Digital return:	46.25%
Trigger level:	75% of the initial index level
Minimum payment at maturity:	None. Investors may lose their entire initial investment in the securities.
Coupon:	None

Key Investment Rationale

The securities offer the potential for a positive return equal to the greater of (1) the digital return and (2) the underlying index return if the level of the underlying index does not decrease and an unleveraged positive return equal to the absolute value of a limited range of negative performance of the underlying index. At maturity, if the level of the underlying index has not decreased, investors will receive the stated principal amount plus a positive return equal to the greater of (1) the digital return and (2) the underlying index return. If the level of the underlying index has **decreased**, but by no more than 25%, investors will receive the stated principal amount plus an unleveraged positive return equal to the absolute value of the percentage decrease, which will effectively be limited to a positive return of 25%. However, if the level of the underlying index has **decreased** by more than 25%, investors will lose 1% of the principal amount for every 1% decrease in the final index level from the initial index level. **Investors may lose their entire initial investment in the securities.**

Upside Scenario Above the Digital Return

The final index level is greater than the initial index level by more than 46.25%. In this case, the securities offer 1-to-1 uncapped participation in the increase in the level of the underlying index.

Digital Return Scenario

The final index level is equal to the initial index level or is greater than the initial index level by up to 46.25%. In this case, the securities offer the digital return of 46.25%.

Absolute Return Scenario

The final index level is less than the initial index level but is greater than or equal to the trigger level, which is 75% of the initial index level. In this case, you receive a 1% positive return on the securities for each 1% decrease in the level of the underlying index. For example, if the final index level is 10% less than the initial index level, the securities will provide a total positive return of 10% at maturity. The maximum return you may receive in this scenario is a positive 25% return at maturity.

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 \$750 per security. For example, if the final index level is 70% less than the initial index level, you will lose 70% of the principal amount and receive only \$300 per security at maturity. There is no minimum payment at maturity on the securities, and you could lose your entire investment.



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 securities are a part. This document, together with these documents, contains the terms of the securities 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 securities and seeking offers to buy the securities 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 securities 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 securities.

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.

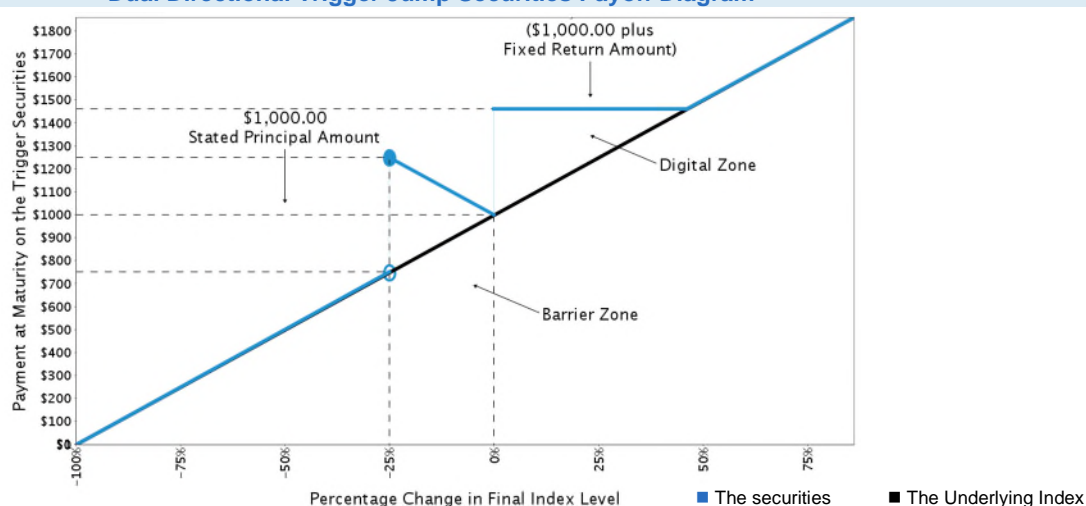
How the Dual Directional Trigger Jump Securities Work

Payoff Diagram

The payoff diagram below illustrates the payment at maturity on the securities 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 security
Digital return:	46.25%
Trigger level:	75% of the initial index level
Minimum payment at maturity:	None

Dual Directional Trigger Jump Securities Payoff Diagram



How it works

- Upside Scenario.** If the final index level is greater than or equal to the initial index level, then investors would receive the \$1,000 stated principal amount plus a return equal to the greater of (1) the digital return and (2) the underlying index return
 - For example, if the level of the underlying index increases by 3%, the investor would receive a 46.25% return, or \$1,462.50 per security.
 - For example, if the level of the underlying index increases by 50%, the investor would receive a 50% return, or \$1,500.00 per security.
- Absolute Return Scenario.** If the final index level is less than the initial index level but is greater than or equal to the trigger level of 75% of the initial index level, the investor would receive a 1% positive return on the securities for each 1% decrease in the level of the underlying index.
 - For example, if the level of the underlying index decreases by 10%, the investor would receive a 10% return, or \$1,100.00 per security. The maximum return you may receive in this scenario is a positive 25% return at maturity.
- Downside Scenario.** If the final index level is less than the trigger level, the investor would receive an amount less than the \$1,000 stated principal amount, based on a 1% loss of principal for each 1% decrease in the level of the underlying index. Under these circumstances, the payment at maturity will be less than \$750.00 per security. There is no minimum payment at maturity on the securities.
 - For example, if the level of the underlying index decreases by 70%, the investor would lose 70% of the principal amount and receive only \$300.00 per security at maturity, or 30% of the stated principal amount.

Risk Factors

An investment in the securities 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 securities are also exposed to further risks related to the issuer of the securities, 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 securities. You should carefully consider whether the securities are appropriate for you in light of your particular circumstances.

Risks Relating to the Terms and Structure of the Securities

- **The securities do not pay interest or guarantee return of any principal.** The terms of the securities differ from those of ordinary debt securities in that the securities do not pay interest or guarantee the payment of any principal amount at maturity. If the final index level is less than the trigger level (which is 75% of the initial index level), the absolute return feature will not apply and the payout at maturity will be an amount in cash that is at least 25% less than the \$1,000 stated principal amount of each security. In this case, you will lose a significant portion of your principal amount equal to the full percentage decrease in the level of the underlying index from the initial index level to the final index level. There is no minimum payment at maturity on the securities, and, accordingly, you could lose your entire initial investment in the securities.
- **The securities 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 securities.** You are dependent on Royal Bank of Canada’s ability to pay all amounts due on the securities 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 securities, your investment would be at risk and you could lose some or all of your investment. As a result, the market value of the securities 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 securities.
- **The amount payable on the securities 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 increases prior to the valuation date but then decreases on the valuation date to a level that is less than the trigger 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 securities 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 securities is not equivalent to investing in the underlying index.** Investing in the securities is not equivalent to investing in the underlying index or its component stocks. Investors in the securities 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 securities.** 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 securities 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 securities and could result in the loss of a significant portion of your initial investment in the securities, including if you are forced to divest the securities due to the government mandates, especially if such divestment must be made at a time when the value of the securities has declined.
- **Significant aspects of the tax treatment of the securities are uncertain.** The tax treatment of an investment in the securities 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 securities, and the IRS, the Canada Revenue Agency or a court may not agree with the tax treatment described in this document.

Dual Directional Trigger Jump Securities Based on the Performance of the MSCI Emerging Markets Index, due November 3, 2028

Principal at Risk Securities

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 securities even though that holder will not receive any payments with respect to the securities 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 securities 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 Securities

- **The initial estimated value of the securities 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 securities in any secondary market (if any exists) at any time. If you attempt to sell the securities 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 securities. These factors, together with various credit, market and economic factors over the term of the securities, are expected to reduce the price at which you may be able to sell the securities in any secondary market and will affect the value of the securities 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 securities 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 securities. In addition to bid-ask spreads, the value of the securities 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 securities and determine the initial estimated value. As a result, the secondary price will be less than if the internal funding rate was used. The securities are not designed to be short-term trading instruments. Accordingly, you should be able and willing to hold your securities to maturity.
- **Our initial estimated value of the securities is an estimate only, calculated as of the pricing date.** The initial estimated value of the securities is based on the value of our obligation to make the payments on the securities, together with the mid-market value of the derivative embedded in the terms of the securities. See “Structuring the Securities” 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 securities. These assumptions are based on certain forecasts about future events, which may prove to be incorrect. Other entities may value the securities or similar securities at a price that is significantly different than we do.

The value of the securities 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 securities in any secondary market, if any, should be expected to differ materially from the initial estimated value of your securities.

Risks Relating to the Secondary Market for the Securities

- **The market price of the securities will be influenced by many unpredictable factors.** Several factors will influence the value of the securities in the secondary market and the price at which RBCCM may be willing to purchase or sell the securities 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;
 - geopolitical conditions and economic, financial, political, regulatory or judicial events that affect the underlying index; and
 - the exchange rate between the U.S. dollar and the currencies in which the securities represented by the underlying index are traded.

Dual Directional Trigger Jump Securities Based on the Performance of the MSCI Emerging Markets Index, due November 3, 2028

Principal at Risk Securities

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

- **The securities will not be listed on any securities exchange and secondary trading may be limited.** The securities will not be listed on any securities exchange. Therefore, there may be little or no secondary market for the securities. RBCCM may, but is not obligated to, make a market in the securities, 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 securities, 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 securities. Even if there is a secondary market, it may not provide enough liquidity to allow you to trade or sell the securities easily. Because we do not expect that other broker-dealers will participate significantly in the secondary market for the securities, the price at which you may be able to trade your securities 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 securities, it is likely that there would be no secondary market for the securities. Accordingly, you should be willing to hold your securities to maturity.

Risks Relating to the Underlying Index

- **An investment in the securities 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 the applicable foreign countries and are denominated in non-U.S. currencies, an investment in the securities involves particular risks. For example, the non-U.S. securities 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 outside the U.S., as well as cross-shareholdings in certain companies, may affect trading prices and trading volumes in those markets. Also, the public availability of information concerning the foreign issuers may vary depending on their home jurisdiction and 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.
- **An investment in the securities is subject to risks associated with emerging markets.** Investments in securities linked directly or indirectly to emerging market equity securities, such as the securities included in the underlying index, involve many risks, including, but not limited to: economic, social, political, financial and military conditions in the emerging market; regulation by national, provincial, and local governments; less liquidity and smaller market capitalizations than exist in the case of many large U.S. companies; different accounting and disclosure standards; and political uncertainties. Stock prices of emerging market companies may be more volatile and may be affected by market developments differently than U.S. companies. Government intervention to stabilize securities markets and cross-shareholdings may affect prices and volume of trading of the securities of emerging market companies. Economic, social, political, financial and military factors could, in turn, negatively affect such companies' value. These factors could include changes in the emerging market government's economic and fiscal policies, possible imposition of, or changes in, currency exchange laws or other laws or restrictions applicable to the emerging market companies or investments in their securities, and the possibility of fluctuations in the rate of exchange between currencies. Moreover, emerging market economies may differ favorably or unfavorably from the U.S. economy in a variety of ways, including growth of gross national product, rate of inflation, capital reinvestment, resources and self-sufficiency. You should carefully consider the risks related to emerging markets, to which the securities are susceptible, before making a decision to invest in the securities.
- **Securities linked to the underlying index are subject to foreign currency exchange rate risk.** The payment amount on the securities will be calculated based on the underlying index, and the prices of the applicable stocks are converted into U.S. dollars for purposes of calculating the level of the underlying index. As a result, investors in the securities will be exposed to currency exchange rate risk with respect to each of the currencies represented by the underlying index. An investor's net exposure will depend on the extent to which the currencies represented by the underlying index strengthen or weaken against the U.S. dollar and the relative weight of each relevant currency represented by the underlying index. If, taking into account such weight, the dollar strengthens against such currencies, the level of the underlying index will be adversely affected and the amount payable, if any, at maturity of the securities may be reduced.
- **Adjustments to the underlying index could adversely affect the value of the securities.** 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 securities.

Dual Directional Trigger Jump Securities Based on the Performance of the MSCI Emerging Markets Index, due November 3, 2028

Principal at Risk Securities

- **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 securities 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 securities. 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 securities. None of our proceeds from the issuance of the securities 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 securities.** 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 securities.** One or more of our subsidiaries and/or third party dealers expect to carry out hedging activities related to the securities (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 securities. Additionally, such hedging or trading activities during the term of the securities, 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 securities or on their behalf. These trading activities may present a conflict between the holders' interest in the securities 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 securities.

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 securities. 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 securities.

- **The calculation agent, which is a subsidiary of the issuer, will make determinations with respect to the securities, 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, the underlying index return and 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 Securities" below.

Additional Terms of the Securities

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

Additional Provisions	
Postponement of the valuation date:	<p>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.</p>
Market disruption events:	<p>With respect to the underlying index and any relevant successor index, a “market disruption event” means:</p> <ul style="list-style-type: none"> • 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; <p>in each case as determined by the calculation agent in its sole discretion; and</p> <ul style="list-style-type: none"> • 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 securities. <p>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.</p>

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

- 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 securities.

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.

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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 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 securities.

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 securities 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 security

Additional amounts:

We will pay any amounts to be paid by us on the securities 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 securities, 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 securities 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:

- (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;

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- (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 securities, the holding of the securities 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 securities 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 securities.

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 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 securities (other than an Excluded Holder) and upon written request reimburse each such holder for the amount of (x) any Canadian taxes so levied or

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imposed and paid by such holder as a result of payments made under or with respect to the securities, 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 securities, 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 securities, you should consult your legal counsel.
Form of the securities:	Book-entry
Trustee:	The Bank of New York Mellon
Calculation agent:	RBCCM. The calculation agent will make all determinations regarding the securities. 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 in the section "Additional Terms of the Securities" of this pricing supplement, and the section "Supplemental Discussion of U.S. Federal Income Tax Consequences".

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 Securities—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 MSCI Emerging Markets Index (“MXEF”)

The MXEF is intended to measure equity market performance in the global emerging markets. The index is a free float-adjusted market capitalization index with a base date of December 31, 1987 and an initial value of 100. The index is calculated daily in U.S. dollars and published in real time every 60 seconds during market trading hours. The MXEF currently consists of the following emerging market country indices: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, South Korea, Kuwait, Malaysia, Mexico, Peru, Philippines, Poland, Qatar, Saudi Arabia, South Africa, Taiwan, Thailand, Turkey and United Arab Emirates.

As of the close on May 31, 2018, MSCI began a multi-step process to include, in the MSCI Emerging Markets Index, large cap China A shares that are not in trading suspension. As part of the first step of the inclusion process, which resulted from the May 2018 quarterly review, MSCI added such large cap China A shares to the MSCI Emerging Markets Index at 2.5% of their foreign inclusion factor-adjusted market capitalization. In connection with the August 2018 quarterly index review, MSCI implemented the second step of the inclusion process by increasing the foreign inclusion factor-adjusted market capitalization of those existing China A share constituents from 2.5% to 5%. With the implementation of this second step, and the inclusion of additional China A shares in connection with the August 2018 quarterly index review, China A shares were initially expected to represent approximately 0.75% of the MSCI Emerging Markets Index. In February 2019, MSCI announced a three-step process between May 2019 and November 2019 that would increase the number of Chinese A shares in the Underlying. In January 2021, in response to an executive order from the U.S. government which prohibited investments in certain Chinese securities, MSCI removed 10 Chinese securities from the MSCI Emerging Markets Index, which accounted for less than 1% of the index weight. As of September 29, 2023, Chinese securities represented 29.99% of the MSCI Emerging Markets Index.

Constructing the MSCI Global Investable Market Indices. MSCI undertakes an index construction process, which involves:

- defining the equity universe;
- determining the market investable equity universe for each market;
- determining market capitalization size segments for each market;
- applying index continuity rules for the MSCI Standard Index;
- creating style segments within each size segment within each market; and
- classifying securities under the Global Industry Classification Standard (the “GICS”).

Defining the Equity Universe. The equity universe is defined by:

- **Identifying Eligible Equity Securities:** the equity universe initially looks at securities listed in any of the countries in the MSCI Global Index Series, which will be classified as either Developed Markets (“DM”) or Emerging Markets (“EM”). All listed equity securities, including Real Estate Investment Trusts and certain income trusts in Canada, are eligible for inclusion in the equity universe. Conversely, mutual funds, ETFs, equity derivatives, and most investment trusts, are not eligible for inclusion in the equity universe. Conversely, mutual funds, ETFs, equity derivatives, and most investment trusts, are not.
- **Classifying Eligible Securities into the Appropriate Country:** each company and its securities (i.e., share classes) are classified in only one country.
- **Effective with the November 2015 semi-annual index review,** companies traded outside of their country of classification (i.e., “foreign listed companies”) became eligible for inclusion in the MSCI Country Investable Market Indexes along with the applicable MSCI Global Index. In order for a MSCI Country Investable Market Index to be eligible to include foreign listed companies, it must meet the Foreign Listing Materiality Requirement. To meet the Foreign Listing Materiality Requirement, the aggregate market capitalization of all securities represented by foreign listings should represent at least (i) 5% of the free float-adjusted market capitalization of the relevant MSCI Country

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Investable Market Index and (ii) 0.05% of the free-float adjusted market capitalization of the MSCI ACWI Investable Market Index.

Determining the Market Investable Equity Universes. A market investable equity universe for a market is derived by identifying eligible listings for each security in the equity universe, and by applying investability screens to individual companies and securities in the equity universe that are classified in that market. A market is equivalent to a single country, except in DM Europe, where all DM countries in Europe are aggregated into a single market for index construction purposes. Subsequently, individual DM Europe country indices within the MSCI Europe Index are derived from the constituents of the MSCI Europe Index under the global investable market indices methodology.

A security may be listed in the country where it is classified (i.e. local listing) and/or in a different country (i.e. "foreign listing"). Securities may be represented by either a local or foreign listing. A security may be represented by a foreign listing only if:

- The security is classified in a country that meets the Foreign Listing Materiality Requirement, and
- The security's foreign listing is traded on an eligible stock exchange of: a DM country if the security is classified in a DM country, a DM or an EM country if the security is classified in an EM country, or a DM or an EM or a FM country if the security is classified in a FM country. Securities in that country may not be represented by a foreign listing in the global investable equity universe if a country does not meet the requirement.

The investability screens used to determine the investable equity universe in each market are as follows:

- **Equity Universe Minimum Size Requirement:** this investability screen is applied at the company level. In order to be included in a market investable equity universe, a company must have the required minimum full market capitalization. The size requirement also applies to companies in all developed and emerging markets.
- **Equity Universe Minimum Free Float-Adjusted Market Capitalization Requirement:** this investability screen is applied at the individual security level. To be eligible for inclusion in a market investable equity universe, a security must have a free float-adjusted market capitalization equal to or higher than 50% of the equity universe minimum size requirement.
- **DM and EM Minimum Liquidity Requirement:** this investability screen is applied at the individual security level. To be eligible for inclusion in a market investable equity universe, a security must have adequate liquidity. The twelve-month and three-month Annual Traded Value Ratio ("ATVR"), a measure that screens out extreme daily trading volumes and takes into account the free float-adjusted market capitalization size of securities, together with the three-month frequency of trading are used to measure liquidity. A minimum liquidity level of 20% of three- and twelve-month ATVR and 90% of three-month frequency of trading over the last four consecutive quarters are required for inclusion of a security in a market investable equity universe of a DM, and a minimum liquidity level of 15% of three- and twelve-month ATVR and 80% of three-month frequency of trading over the last four consecutive quarters are required for inclusion of a security in a market investable equity universe of an EM.
- **Global Minimum Foreign Inclusion Factor Requirement:** this investability screen is applied at the individual security level. To be eligible for inclusion in a market investable equity universe, a security's Foreign Inclusion Factor ("FIF") must reach a certain threshold. The FIF of a security is defined as the proportion of shares outstanding that is available for purchase in the public equity markets by international investors. This proportion accounts for the available free float of and/or the foreign ownership limits applicable to a specific security (or company). In general, a security must have an FIF equal to or larger than 0.15 to be eligible for inclusion in a market investable equity universe.
- **Minimum Length of Trading Requirement:** this investability screen is applied at the individual security level. For an initial public offering ("IPO") to be eligible for inclusion in a market investable equity universe, the new issue must have started trading at least three months before the implementation of a semi-annual index review (as described below). This requirement is applicable to small new issues in all markets. Large IPOs are not subject to the minimum length of trading requirement and may be included in a market investable equity universe and the Standard Index outside of a Quarterly or Semi-Annual Index Review.
- **Minimum Foreign Room Requirement:** this investability screen is applied at the individual security level. For a security that is subject to a foreign ownership limit to be eligible for inclusion in a market investable equity universe, the proportion of shares still available to foreign investors relative to the maximum allowed (referred to as "foreign room") must be at least 15%.

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Defining Market Capitalization Size Segments for Each Market. Once a market investable equity universe is defined, it is segmented into the following size-based indices:

- Investable Market Index (Large + Mid + Small);
- Standard Index (Large + Mid);
- Large Cap Index;
- Mid Cap Index; or
- Small Cap Index.
- Creating the size segment indices in each market involves the following steps:
 - defining the market coverage target range for each size segment;
 - determining the global minimum size range for each size segment;
 - determining the market size-segment cutoffs and associated segment number of companies;
 - assigning companies to the size segments; and
 - applying final size-segment investability requirements.

Index Continuity Rules for the Standard Indices. In order to achieve index continuity, as well as to provide some basic level of diversification within a market index, and notwithstanding the effect of other index construction rules described in this section, a minimum number of five constituents will be maintained for a DM Standard Index and a minimum number of three constituents will be maintained for an EM Standard Index.

Creating Style Indices within Each Size Segment. All securities in the investable equity universe are classified into value or growth segments using the MSCI Global Value and Growth methodology. Classifying Securities under the Global Industry Classification Standard. All securities in the global investable equity universe are assigned to the industry that best describes their business activities. To this end, MSCI has designed, in conjunction with S&P Dow Jones Indexes, the GICS. Under the GICS, each company is assigned to one sub-industry according to its principal business activity. Therefore, a company can belong to only one industry grouping at each of the four levels of the GICS.

Calculation Methodology for the Index

The performance of the Underlying is a free float weighted average of the U.S. dollar values of its component securities.

Prices used to calculate the component securities are the official exchange closing prices or prices accepted as such in the relevant market. In the case of a market closure, or if a security does not trade on a specific day or during a specific period, MSCI carries forward the previous day's price (or latest available closing price). In the event of a market outage resulting in any component security price to be unavailable, MSCI will generally use the last reported price for such component security for the purpose of performance calculation unless MSCI determines that another price is more appropriate based on the circumstances. Closing prices are converted into U.S. dollars, as applicable, using the closing exchange rates calculated by WM/Reuters at 4:00 P.M. London Time.

Index Maintenance

The MSCI global investable market indices are maintained with the objective of reflecting the evolution of the underlying equity markets and segments on a timely basis, while seeking to achieve index continuity, continuous investability of constituents and replicability of the indices, index stability, and low index turnover. In particular, index maintenance involves:

(i) Semi-Annual Index Reviews ("SAIRs") in May and November of the Size Segment and Global Value and Growth Indices which include:

- updating the indices on the basis of a fully refreshed equity universe;
- taking buffer rules into consideration for migration of securities across size and style segments; and
- updating FIFs and Number of Shares ("NOS").

(ii) Quarterly Index Reviews ("QIRs") in February and August of the Size Segment Indices aimed at:

- including significant new eligible securities (such as IPOs that were not eligible for earlier inclusion) in the Underlying;
- allowing for significant moves of companies within the Size Segment Indices, using wider buffers than in the SAIR; and
- reflecting the impact of significant market events on FIFs and updating NOS.

(iii) Ongoing Event-Related Changes: changes of this type are generally implemented in the indices as they occur. Significantly large IPOs are included in the indices after the close of the company's tenth day of trading.

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None of us, RBCCM or any of our other affiliates accepts any responsibility for the calculation, maintenance, or publication of, or for any error, omission, or disruption in, the Underlying or any successor to the Underlying.

License Agreement

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The license agreement between us and MSCI requires that the following language be stated in this document:

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ALTHOUGH MSCI SHALL OBTAIN INFORMATION FOR INCLUSION IN OR FOR USE IN THE CALCULATION OF THE MSCI INDEXES FROM SOURCES WHICH MSCI CONSIDERS RELIABLE, NEITHER MSCI, ANY OF ITS AFFILIATES NOR ANY OTHER PARTY INVOLVED IN, OR RELATED TO MAKING OR COMPILING ANY MSCI INDEX WARRANTS OR GUARANTEES THE ORIGINALITY, ACCURACY AND/OR THE COMPLETENESS OF ANY MSCI INDEX OR ANY DATA INCLUDED THEREIN. NEITHER MSCI, ANY OF ITS AFFILIATES NOR ANY OTHER PARTY INVOLVED IN, OR RELATED TO, MAKING OR COMPILING ANY MSCI INDEX MAKES ANY WARRANTY, EXPRESS OR IMPLIED, AS TO RESULTS TO BE OBTAINED BY LICENSEE, LICENSEE'S CUSTOMERS OR COUNTERPARTIES, ISSUERS OF THE SECURITIES, OWNERS OF THE SECURITIES, OR ANY OTHER PERSON OR ENTITY, FROM THE USE OF ANY MSCI INDEX OR ANY DATA INCLUDED THEREIN IN CONNECTION WITH THE RIGHTS LICENSED HEREUNDER OR FOR ANY OTHER USE. NEITHER MSCI, ANY OF ITS AFFILIATES NOR ANY OTHER PARTY INVOLVED IN, OR RELATED TO, MAKING OR COMPILING ANY MSCI INDEX SHALL HAVE ANY LIABILITY FOR ANY ERRORS, OMISSIONS OR INTERRUPTIONS OF OR IN CONNECTION WITH ANY MSCI INDEX OR ANY DATA INCLUDED THEREIN. FURTHER, NEITHER MSCI, ANY OF ITS AFFILIATES NOR ANY OTHER PARTY INVOLVED IN, OR RELATED TO, MAKING OR COMPILING ANY MSCI INDEX MAKES ANY EXPRESS OR IMPLIED WARRANTIES OF ANY KIND, AND MSCI, ANY OF ITS AFFILIATES AND ANY OTHER PARTY INVOLVED IN, OR RELATED TO MAKING OR COMPILING ANY MSCI INDEX HEREBY EXPRESSLY DISCLAIM ALL WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO ANY MSCI INDEX AND ANY DATA INCLUDED THEREIN. WITHOUT LIMITING ANY OF THE FOREGOING, IN NO EVENT SHALL MSCI, ANY OF ITS AFFILIATES OR ANY OTHER PARTY INVOLVED IN, OR RELATED TO, MAKING OR COMPILING ANY MSCI INDEX HAVE ANY LIABILITY FOR ANY DIRECT, INDIRECT, SPECIAL, PUNITIVE, CONSEQUENTIAL OR ANY OTHER DAMAGES (INCLUDING LOST PROFITS) EVEN IF NOTIFIED OF THE POSSIBILITY OF SUCH DAMAGES.

No purchaser, seller or holder of the securities, or any other person or entity, should use or refer to any MSCI trade name, trade mark or service mark rights to sponsor, endorse, market or promote the securities without first contacting MSCI to



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determine whether MSCI's permission is required. Under no circumstances may any person or entity claim affiliation with MSCI without the prior written permission of MSCI.

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.

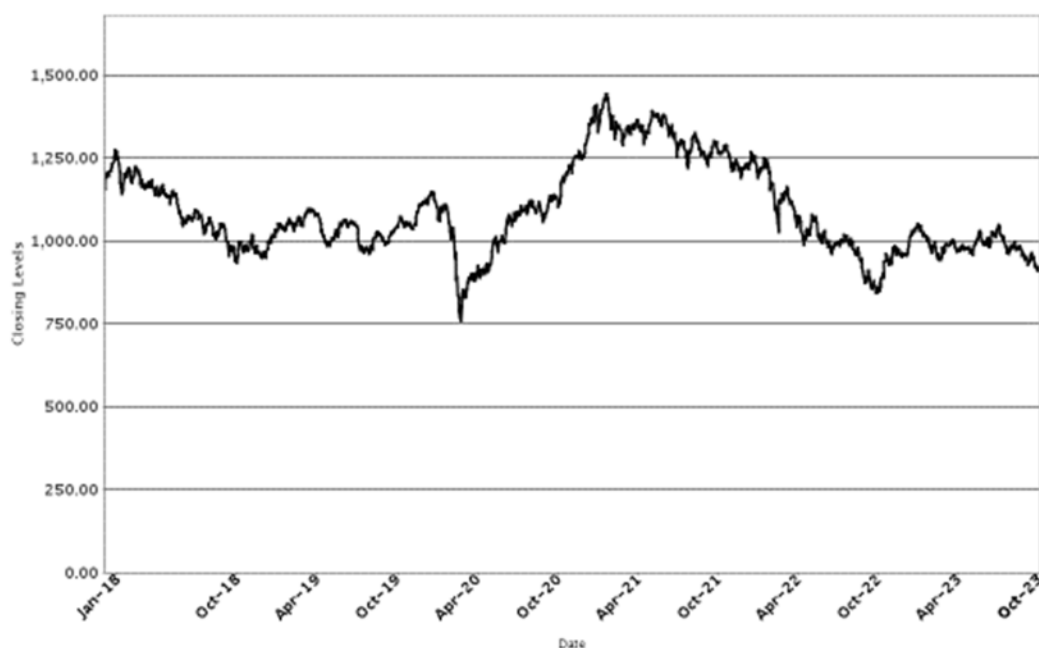
We obtained the information below from Bloomberg Financial Markets, without independent verification.

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.

MSCI Emerging Markets Index

Information as of market close on October 31, 2023:

Bloomberg Symbol:	MXEF	52 Weeks Ago:	848.16
Current Index Level:	915.20	52 Week High (on 1/26/2023):	1,052.46
		52 Week Low (on 10/31/2022):	848.16



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The MSCI Emerging Markets Index	High	Low
2018		
First Quarter	1,273.07	1,142.85
Second Quarter	1,184.13	1,046.71
Third Quarter	1,092.36	1,003.33
Fourth Quarter	1,046.40	934.80
2019		
First Quarter	1,070.95	949.57
Second Quarter	1,096.39	984.81
Third Quarter	1,064.63	960.81
Fourth Quarter	1,118.61	989.20
2020		
First Quarter	1,146.83	758.20
Second Quarter	1,014.62	827.26
Third Quarter	1,121.60	1,001.08
Fourth Quarter	1,291.26	1,081.71
2021		
First Quarter	1,444.93	1,288.42
Second Quarter	1,390.85	1,292.78
Third Quarter	1,368.22	1,220.78
Fourth Quarter	1,301.13	1,190.08
2022		
First Quarter	1,267.34	1,026.77
Second Quarter	1,161.65	987.82
Third Quarter	1,016.83	873.29
Fourth Quarter	984.26	842.76
2023		
First Quarter	1,052.46	941.35
Second Quarter	1,030.03	958.53
Third Quarter	1,046.91	944.08
Fourth Quarter (through October 31, 2023)	962.69	910.91

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 securities 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 securities 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 securities. It does not purport to be a complete analysis of all tax considerations relating to the securities. Prospective purchasers of the securities 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 securities and receiving payments under the securities. 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 SECURITIES 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 SECURITIES 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 SECURITIES, 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 securities 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 securities require a holder (in the absence of a change in law or an administrative or judicial ruling to the contrary) to treat the securities for all tax purposes in accordance with such characterization. If the securities are so treated, a U.S. holder should generally recognize capital gain or loss upon the sale, exchange or maturity of the securities in an amount equal to the difference between the amount a holder receives at such time and the holder's tax basis in the securities. In general, a U.S. holder's tax basis in the securities will be equal to the price the holder paid for the securities. 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 securities 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 securities, and the IRS might assert that the securities should be treated, as a single debt instrument. Pursuant to such characterization, since the securities 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 securities are so treated, a holder would generally be required to accrue interest income over the term of the securities based upon the yield at which we would issue a non-contingent fixed-rate debt instrument with terms and conditions similar to the securities. In addition, any gain a holder might recognize upon the sale, exchange or maturity of the securities would

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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 securities, and thereafter, would be capital loss.

Because of the absence of authority regarding the appropriate tax characterization of the securities, it is also possible that the IRS could seek to characterize the securities 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 securities should be treated as ordinary gain or loss.

The IRS has released a notice that may affect the taxation of holders of the securities. According to the notice, the IRS and the U.S. Treasury Department are actively considering whether the holder of an instrument such as the securities 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 securities 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 securities, including the timing and character of income and gain on the securities. Holders are urged to consult their tax advisors concerning the significance, and the potential impact, of the above considerations. We intend to treat the securities 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 securities and proceeds from the sale or exchange of the securities 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 securities. A non-U.S. holder is a beneficial owner of a securities 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 securities, 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 securities. 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 securities are not delta-one instruments, non-U.S. holders should not be subject to withholding on dividend equivalent payments, if any, under the securities. However, it is possible that the securities 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 securities (for example, upon an underlying index rebalancing), and following such occurrence the securities 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 securities should consult their tax advisors as to

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the application of the dividend equivalent withholding tax in the context of the securities 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 securities 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 securities 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 securities 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 securities 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 securities, 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 securities 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 securities.

Use of Proceeds and Hedging

The net proceeds from the sale of the securities 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 securities. The initial public offering price of the securities includes the underwriting discount and commission and the estimated cost of hedging our obligations under the securities.

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 securities from Royal Bank of Canada for distribution to Morgan Stanley Wealth Management. RBCCM will act as agent for the securities 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 securities 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 security. The costs included in the original issue price of the securities 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 securities distributed by such brokers.

Delivery of the securities will be made against payment for the securities 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 securities 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 securities, 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 securities shown on your account statement may be based on RBCCM's estimate of the value of the securities if RBCCM or another of our affiliates were to make a market in the securities (which it is not obligated to do). That estimate will be based on the price that RBCCM may pay for the securities 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 securities that may be shown on your account statement is expected to be higher than RBCCM's estimated value of the securities at that time. This is because the estimated value of the securities will not include the agent's commission and our hedging costs and profits; however, the value of the securities 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 securities. 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 securities, it expects to do so at prices that reflect its estimated value.

Each of MSWM and any other broker-dealer offering the securities have not offered, sold or otherwise made available and will not offer, sell or otherwise make available any of the securities 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 securities to be offered so as to enable an investor to decide to purchase or

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subscribe the securities, 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 securities or otherwise making them available to retail investors in the EEA has been prepared, and therefore, offering or selling the securities 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 securities have not offered, sold or otherwise made available and will not offer, sell or otherwise make available any of the securities 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 securities or otherwise making them available to retail investors in the UK has been prepared and therefore offering or selling the securities or otherwise making them available to any retail investor in the UK may be unlawful under the UK PRIIPs Regulation.

Structuring the Securities

The securities 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 securities 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 securities 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 securities 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 securities 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 securities than if our initial internal funding rate were used.

In order to satisfy our payment obligations under the securities, 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 securities. The economic terms of the securities 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 securities reduced the economic terms of the securities to you and resulted in the initial estimated value for the securities on the pricing date being less than their public offering price. See “Risk Factors—The initial estimated value of the securities is less than the price to the public” above.

Validity of Trigger PLUS

In the opinion of Norton Rose Fulbright Canada LLP, the issue and sale of the securities has been duly authorized by all necessary corporate action of the Issuer in conformity with the Indenture, and when the securities have been duly executed, authenticated and issued in accordance with the Indenture and delivered against payment therefor, the securities will be validly issued and, to the extent validity of the securities 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 securities 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 securities have been duly completed in accordance with the Indenture and issued and sold as contemplated by the prospectus supplement and the prospectus, the securities 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.