

Royal Bank of Canada Trigger Absolute Return Autocallable Notes

\$6,651,000 Notes Linked to the Common Stock of General Electric Company due on November 29, 2023

Investment Description

Trigger Absolute Return Autocallable Notes (the "Notes") are unconditional, unsecured and unsubordinated debt securities issued by Royal Bank of Canada linked to the performance of the common stock of General Electric Company (the "Underlying Equity"). If the Underlying Equity closes at or above its closing price on November 23, 2021 (the "Initial Underlying Price") on any Observation Date (which will occur first on February 24, 2022 and then quarterly thereafter as described on page 4 of this pricing supplement), we will automatically call the Notes and pay you a Call Price equal to the principal amount per Note plus a Call Return based on the Call Return Rate. The Call Return increases the longer the Notes are outstanding, as described below. If by maturity the Notes have not been called, and the closing price of one share of the Underlying Equity closes at or above the Downside Threshold on the final Observation Date, we will repay the principal amount plus pay you a return at maturity equal to the absolute value of the percentage decline in the price of the Underlying Equity from the Initial Underlying Price to its closing price on the final Observation Date (the "Contingent Absolute Return"). If by maturity the Notes have not been called and the Underlying Equity closes below the Downside Threshold on the final Observation Date, the Contingent Absolute Return will not apply, and we will repay less than the principal amount, if anything, resulting in a loss that is proportionate to the decline in the price of the Underlying Equity from the Initial Underlying Price to its closing price on the final Observation Date, up to a 100% loss of your principal amount invested.

Investing in the Notes involves significant risks. The Notes do not pay interest. You may lose some or all of your principal amount. Generally, the higher the Call Return Rate on a Note, the greater the risk of loss on that Note. The Contingent Absolute Return and any contingent repayment of principal apply only if you hold the Notes to maturity. Any payment on the Notes, including any repayment of principal, is subject to our creditworthiness and is not, either directly or indirectly, an obligation of any third party. If we were to default on our payment obligations, you may not receive any amounts owed to you under the Notes and you could lose your entire investment. The Notes will not be listed on any securities exchange. The Notes are not subject to conversion into our common shares under subsection 39.2(2.3) of the Canada Deposit Insurance Corporation Act.

Features

- ☐ **Call Return** - We will automatically call the Notes for a Call Price equal to the principal amount plus the applicable Call Return based on the Call Return Rate if the closing price of the Underlying Equity on any Observation Date is equal to or greater than the Initial Underlying Price. The Call Return increases the longer the Notes are outstanding. If the Notes are not called, investors will have the potential for downside market exposure to the Underlying Equity at maturity if the Final Underlying Price is less than the Initial Underlying Price.
- ☐ **Contingent Absolute Return at Maturity** - If you hold the Notes to maturity, the Notes have not been called on any Observation Date including the final Observation Date and the Underlying Equity closes above or equal to the Downside Threshold on the final Observation Date, we will pay your full principal amount plus the Contingent Absolute Return. If the Underlying Equity closes below the Downside Threshold on the final Observation Date, the Contingent Absolute Return will not apply and we will pay less than your principal amount, if anything, resulting in a loss of your principal amount that will be proportionate to the full negative Underlying Return. The Contingent Absolute Return and any contingent repayment of principal only applies if you hold the Notes to maturity. Any payment on the Notes, including any repayment of principal, is subject to our creditworthiness.

Key Dates

Trade Date	November 24, 2021
Settlement Date	November 30, 2021
Observation Dates ¹	Quarterly (see page 4 for details)
Final Observation Date ¹	November 24, 2023
Maturity Date ¹	November 29, 2023

¹ Subject to postponement if a market disruption event occurs, as described under "General Terms of the Securities – Market Disruption Events" in the accompanying product prospectus supplement no. UBS-TAS-2.

NOTICE TO INVESTORS: THE NOTES ARE SIGNIFICANTLY RISKIER THAN CONVENTIONAL DEBT INSTRUMENTS. WE ARE NOT NECESSARILY OBLIGATED TO REPAY THE FULL PRINCIPAL AMOUNT OF THE NOTES AT MATURITY, AND THE NOTES CAN HAVE DOWNSIDE MARKET RISK SIMILAR TO THE UNDERLYING EQUITY. THIS MARKET RISK IS IN ADDITION TO THE CREDIT RISK INHERENT IN PURCHASING OUR DEBT OBLIGATION. YOU SHOULD NOT PURCHASE THE NOTES IF YOU DO NOT UNDERSTAND OR ARE NOT COMFORTABLE WITH THE SIGNIFICANT RISKS INVOLVED IN INVESTING IN THE NOTES. YOU SHOULD CAREFULLY CONSIDER THE RISKS DESCRIBED UNDER "KEY RISKS" BEGINNING ON PAGE 6 AND UNDER "RISK FACTORS" BEGINNING ON PAGE PS-3 OF THE PRODUCT PROSPECTUS SUPPLEMENT NO. UBS-TAS-2 BEFORE PURCHASING ANY NOTES. EVENTS RELATING TO ANY OF THOSE RISKS, OR OTHER RISKS AND UNCERTAINTIES, COULD ADVERSELY AFFECT THE MARKET VALUE OF, AND THE RETURN ON, YOUR NOTES. YOU MAY LOSE SOME OR ALL OF THE PRINCIPAL AMOUNT OF THE NOTES.

Notes Offering

This pricing supplement relates to Trigger Absolute Return Autocallable Notes linked to the performance of the common stock of General Electric Company. The Initial Underlying Price and the Downside Threshold were set on November 23, 2021. The Call Prices for each Observation Date are set forth under "Final Terms of the Notes – Call Return / Call Return Rate" on page 4 of this pricing supplement. The Notes are offered at a minimum investment of 100 Notes at \$10.00 per Note (representing a \$1,000 investment), and integral multiples of \$10.00 in excess thereof.

Underlying Equity	Call Return Rate	Initial Underlying Price	Downside Threshold	CUSIP	ISIN
General Electric Company (GE)	11.00% per annum	\$102.08	\$76.56, which is 75% of the Initial Underlying Price	78014U822	US78014U8229

See "Additional Information About Royal Bank of Canada and the Notes" in this pricing supplement. The Notes will have the terms specified in the prospectus dated September 14, 2021, the prospectus supplement dated September 14, 2021, the product prospectus supplement no. UBS-TAS-2 dated November 24, 2021 and this pricing supplement.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of the Notes or passed upon the accuracy or the adequacy of this pricing supplement or the accompanying prospectus, the prospectus supplement and the product prospectus supplement no. UBS-TAS-2. Any representation to the contrary is a criminal offense.

Offering of the Notes	Price to Public ⁽¹⁾		Fees and Commissions		Proceeds to Us	
	Total	Per Note	Total	Per Note	Total	Per Note
Trigger Absolute Return Autocallable Notes Linked to the Common Stock of General Electric Company	\$6,651,000	\$10.00	\$99,765	\$0.15	\$6,551,235	\$9.85

⁽¹⁾ UBS Financial Services Inc., which we refer to as UBS, will receive a commission of \$0.15 per \$10 principal amount. See "Supplemental Plan of Distribution (Conflicts of Interest)" below.

The initial estimated value of the Notes as of the Trade Date was \$9.79 per \$10.00 in principal amount for the Notes, which is less than the price to public. The actual value of the Notes at any time will reflect many factors, cannot be predicted with accuracy, and may be less than this amount. We describe our determination of the initial estimated value under "Key Risks," "Supplemental Plan of Distribution (Conflicts of Interest)" and "Structuring the Notes" below.

The Notes will not constitute deposits insured under the Canada Deposit Insurance Corporation Act or by the United States Federal Deposit Insurance Corporation or any other Canadian or United States government agency or instrumentality.

Additional Information About Royal Bank of Canada and the Notes

You should read this pricing supplement together with the prospectus dated September 14, 2021, as supplemented by the prospectus supplement dated September 14, 2021, relating to our Series I medium-term notes of which these Notes are a part, and the more detailed information contained in product prospectus supplement no. UBS-TAS-2 dated November 24, 2021. **This pricing supplement, together with the documents listed below, contains the terms of the Notes 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, fact sheets, brochures or other educational materials of ours.** You should carefully consider, among other things, the matters set forth in "Risk Factors" in the accompanying product prospectus supplement no. UBS-TAS-2, as the Notes involve risks not associated with conventional debt securities.

If the terms discussed in this pricing supplement differ from those discussed in the product prospectus supplement no. UBS-TAS-2, the prospectus supplement or the prospectus, the terms discussed herein will control.

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

- ◆ Product prospectus supplement no. UBS-TAS-2 dated November 24, 2021:
https://www.sec.gov/Archives/edgar/data/1000275/000114036121039288/brhc10031171_424b5.htm
- ◆ Prospectus supplement dated September 14, 2021:
<https://www.sec.gov/Archives/edgar/data/1000275/000121465921009472/rbcsupp911210424b3.htm>
- ◆ Prospectus dated September 14, 2021:
<https://www.sec.gov/Archives/edgar/data/1000275/000121465921009470/rbc911212424b3.htm>

As used in this pricing supplement, "we," "us" or "our" refers to Royal Bank of Canada.

The Notes may be suitable for you if, among other considerations:

You fully understand the risks inherent in an investment in the Notes, including the risk of loss of your entire initial investment.

You can tolerate the loss of all or a substantial portion of your investment and are willing to make an investment that may have similar downside market risk as the Underlying Equity.

You are willing to accept the risks of investing in equities in general and in the Underlying Equity in particular.

You believe the Underlying Equity will close at or above the Initial Underlying Price on any one of the specified Observation Dates, including the final Observation Date, or you believe the Underlying Equity will not close below the Downside Threshold on the final Observation Date.

You can tolerate fluctuations in the price of the Notes prior to maturity that may be similar to or exceed the downside price fluctuations of the Underlying Equity.

You are willing to hold Notes that will be called on the earliest Observation Date on which the Underlying Equity closes at or above the Initial Underlying Price, or you are otherwise willing to hold such Notes to maturity.

You are willing to make an investment whose return is limited to the Call Return, regardless of the potential appreciation of the Underlying Equity, which could be significant, or, if the Notes have not been called, to the Contingent Absolute Return (as limited by the Downside Threshold).

You are willing to invest in the Notes based on the Call Return Rate set forth on the cover page of this pricing supplement.

You are willing to invest in Notes for which there may be little or no secondary market and you accept that the secondary market will depend in large part on the price, if any, at which RBC Capital Markets, LLC, which we refer to as "RBCCM," is willing to purchase the Notes.

You do not seek current income from this investment and are willing to forgo any dividends paid on the Underlying Equity.

You are willing to assume our credit risk for all payments under the Notes, and understand that if we default on our obligations, you may not receive any amounts due to you, including any repayment of principal.

The Notes may not be suitable for you if, among other considerations:

You do not fully understand the risks inherent in an investment in the Notes, including the risk of loss of your entire initial investment.

You cannot tolerate the loss of all or a substantial portion of your investment, and you are not willing to make an investment that may have similar downside market risk as the Underlying Equity.

You are unwilling to accept the risks of investing in equities in general or in the Underlying Equity in particular.

You do not believe the Underlying Equity will close at or above the Initial Underlying Price on any one of the specified Observation Dates, including the final Observation Date, or you believe the Underlying Equity will close below the Downside Threshold on the final Observation Date exposing you to the full downside performance of the Underlying Equity.

You seek an investment that is designed to provide a full return of principal at maturity.

You seek an investment that participates in the full performance of the Underlying Equity and whose positive return is not limited to the applicable Call Return, or, if the Notes have not been called, to the Contingent Absolute Return (as limited by the Downside Threshold).

You are unwilling to invest in the Notes based on the Call Return Rate set forth on the cover page of this pricing supplement.

You are unable or unwilling to hold Notes that will be called on the earliest Observation Date on which the Underlying Equity closes at or above the Initial Underlying Price, or you are otherwise unable or unwilling to hold such Notes to maturity.

You seek an investment for which there will be an active secondary market.

You seek current income from your investment, or prefer to receive any dividends paid on the Underlying Equity.

You prefer the lower risk, and therefore accept the potentially lower returns, of conventional fixed income investments with comparable maturities and credit ratings.

You cannot tolerate fluctuations in the price of the Notes prior to maturity that may be similar to or exceed the downside price fluctuations of the Underlying Equity.

You are not willing to assume our credit risk for all payments under the Notes, including any repayment of principal.

The suitability considerations identified above are not exhaustive. Whether or not the Notes are a suitable investment for you will depend on your individual circumstances, and you should reach an investment decision only after you and your investment, legal, tax, accounting, and other advisers have carefully considered the suitability of an investment in the Notes in light of your particular circumstances. You should also review carefully the "Key Risks" below and "Risk Factors" in the accompanying product prospectus supplement no. UBS-TAS-2 for risks related to an investment in the Notes.

Final Terms of the Notes¹

Issuer:	Royal Bank of Canada
Principal Amount per Note:	\$10 per Note (subject to a minimum purchase of 100 Notes or \$1,000)
Term:	Approximately two years, unless called earlier
Underlying Equity: ²	The common stock of General Electric Company
Call Feature:	The Notes will be called if the Closing Price of the Underlying Equity on any Observation Date is at or above its Initial Underlying Price. If the Notes are called, we will pay you on the applicable Call Settlement Date a cash payment per \$10 principal amount equal to the Call Price for the applicable Observation Date.
Observation Dates:	The Observation Dates will occur quarterly on the dates specified below, beginning on February 24, 2022; the final Observation Date will be November 24, 2023 (the "final Observation Date").
Call Settlement Dates:	Each Call Settlement Date will fall after the applicable Observation Date, as set forth below. The Call Settlement Date for the final Observation Date will be the Maturity Date.
Call Price:	The Call Price will be calculated based on the following formula: $\$10 + (\$10 \times \text{Call Return})$
Call Return / Call Return Rate:	The Call Price will be based upon the Call Return. The Call Return increases the longer the Notes are outstanding and is based on the Call Return Rate. The Call Return will be a fixed amount based upon equal quarterly installments at the Call Return Rate, which is a per annum rate. The following table sets forth each Observation Date, each Call Settlement Date and the corresponding Call Price for the Notes.

Observation Dates	Call Settlement Dates	Call Price
February 24, 2022	March 1, 2022	\$10.2750
May 24, 2022	May 27, 2022	\$10.5500
August 24, 2022	August 29, 2022	\$10.8250
November 25, 2022	November 30, 2022	\$11.1000
February 24, 2023	March 1, 2023	\$11.3750
May 24, 2023	May 30, 2023	\$11.6500
August 24, 2023	August 29, 2023	\$11.9250
November 24, 2023 (final Observation Date)	November 29, 2023 (Maturity Date)	\$12.2000

Payment at Maturity (per Note):	If the Notes are not called and the Final Underlying Price of the Underlying Equity is above or equal to the Downside Threshold on the final Observation Date, we will pay
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you a cash payment on the Maturity Date per Note equal to:

$$\$10 \times (1 + \text{Contingent Absolute Return})$$

If the Notes are not called and the Final Underlying Price is below the Downside Threshold on the final Observation Date, then the Contingent Absolute Return will not apply, and we will pay you a cash payment on the Maturity Date that is less than your principal amount, if anything, resulting in a loss that is proportionate to the negative Underlying Return, equal to:

$$\$10 \times (1 + \text{Underlying Return})$$

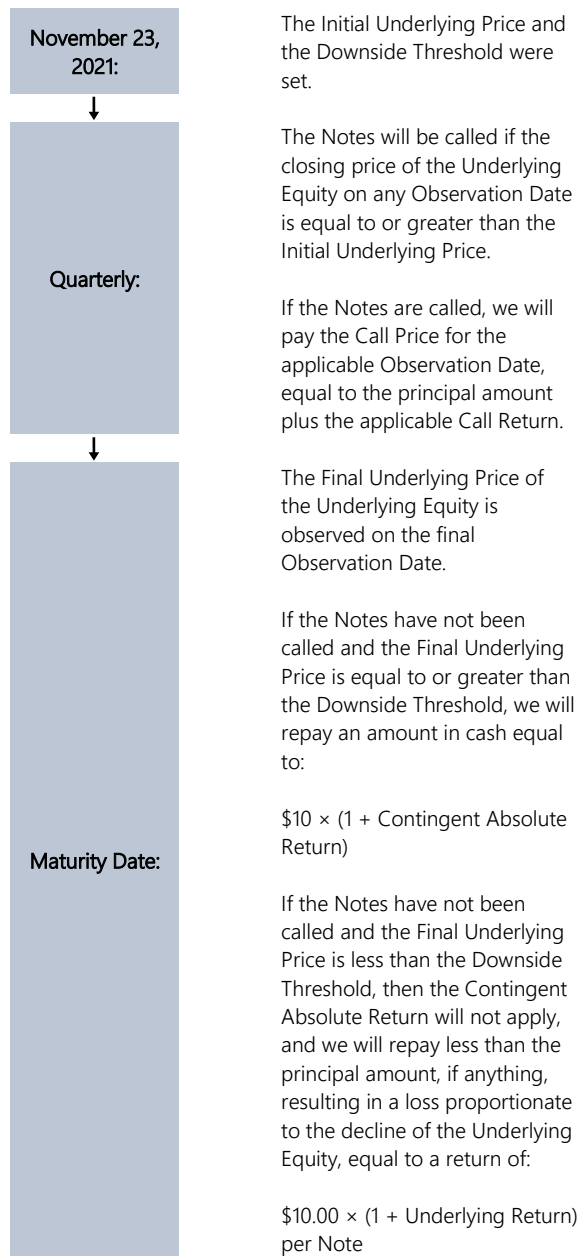
Accordingly, you may lose all or a substantial portion of your principal at maturity, depending on how much the Underlying Equity declines.

Underlying Return:	$\frac{\text{Final Underlying Price} - \text{Initial Underlying Price}}{\text{Initial Underlying Price}}$
Downside Threshold:	75% of the Initial Underlying Price of the Underlying Equity, as set forth on the cover page of this pricing supplement.
Contingent Absolute Return:	The absolute value of the Underlying Return. For example, if the Underlying Return is -5%, the Contingent Absolute Return will equal 5%.
Initial Underlying Price:	The closing price of the Underlying Equity on November 23, 2021, as set forth on the cover page of this pricing supplement.
Final Underlying Price:	The closing price of the Underlying Equity on the final Observation Date.
Closing Price:	On any trading day, the last reported sale price of the Underlying Equity on the principal national securities exchange on which it is listed for trading, as determined by the calculation agent.

¹ Terms used in this pricing supplement, but not defined herein, will have the meanings ascribed to them in the product prospectus supplement.

² For a description of adjustments that may affect the Underlying Equity, see "General Terms of the Securities" in the product prospectus supplement no. UBS-TAS-2.

Investment Timeline



INVESTING IN THE NOTES INVOLVES SIGNIFICANT RISKS. YOU MAY LOSE SOME OR ALL OF YOUR PRINCIPAL AMOUNT. ANY PAYMENT ON THE NOTES, INCLUDING ANY REPAYMENT OF PRINCIPAL, IS SUBJECT TO OUR CREDITWORTHINESS. IF WE WERE TO DEFAULT ON OUR PAYMENT OBLIGATIONS, YOU MAY NOT RECEIVE ANY AMOUNTS OWED TO YOU UNDER THE NOTES AND YOU COULD LOSE YOUR ENTIRE INVESTMENT.

Key Risks

An investment in the Notes involves significant risks. Investing in the Notes is not equivalent to investing directly in the Underlying Equity. These risks are explained in more detail in the “Risk Factors” section of the accompanying product prospectus supplement no. UBS-TAS-2. We also urge you to consult your investment, legal, tax, accounting and other advisors before investing in the Notes.

Risks Relating to the Terms and Structure of the Notes

- ◆ **You May Lose Some or All of Your Principal:** The Notes differ from ordinary debt securities in that we will not necessarily pay the full principal amount at maturity. The return on the Notes depends on whether the Underlying Equity closes at or above the Initial Underlying Price on an Observation Date, and if the Notes are not called, whether the Final Underlying Price of the Underlying Equity is greater than or equal to the Downside Threshold. If the Notes are not called, we will only pay you the principal amount of your Notes, plus the Contingent Absolute Return, if the Final Underlying Price of the Underlying Equity is greater than or equal to the Downside Threshold, and will only make such payment at maturity. If the Notes are not called and the Final Underlying Price is less than the Downside Threshold, the Contingent Absolute Return will not apply and you will lose some or all of your principal amount in an amount proportionate to the negative Underlying Return.
- ◆ **The Call Feature and the Downside Threshold Limit Your Potential Return:** The return potential of the Notes if the Notes are called as of any Observation Date is limited to the applicable Call Return, regardless of the appreciation of the Underlying Equity, which may be significant. Therefore, you may receive a lower payment if the Notes are automatically called or at maturity, as the case may be, than you would have if you had invested directly in the Underlying Equity. In addition, because the Call Return increases the longer the Notes are outstanding, the Call Price payable on the first Observation Date is less than the Call Price payable on later Observation Dates. As the Notes could be called as early as the first Observation Date, the total return on the Notes could be minimal.

If the Notes are not called, and the Final Underlying Price is greater than or equal to the Downside Threshold, your return at maturity will be limited to the absolute value of the decline in the price of the Underlying Equity up to the Downside Threshold. Accordingly, this payment will not exceed the percentage by which the Downside Threshold is less than the Initial Underlying Price. You will not receive the Contingent Absolute Return, and will lose some or all of your principal amount, if the Notes are not called and the Final Underlying Price is less than the Downside Threshold.

- ◆ **There Will Be No Periodic Interest Payments on the Notes:** We will not pay any interest with respect to the Notes. You will not receive any payments on the Notes until maturity if they have not been automatically called.
- ◆ **The Notes Are Subject to Reinvestment Risk:** If your Notes are called early, the holding period over which you would receive the per annum Call Return Rate could be as little as three months. There is no guarantee that you would be able to reinvest the proceeds from an investment in the Notes in a comparable investment with a similar level of risk if the Notes are called prior to the Maturity Date.
- ◆ **Contingent Absolute Return Applies Only at Maturity:** You should be willing to hold your Notes to maturity. If you are able to sell your Notes prior to maturity in the secondary market, if any, you may have to sell your Notes at a loss relative to your initial investment, even if the price of the Underlying Equity is above the Downside Threshold. If at maturity the Notes have not been called, we will repay you the full principal amount per Note plus the Contingent Absolute Return, unless the price of the Underlying Equity closes below the Downside Threshold on the final Observation Date. Under these circumstances, the Contingent Absolute Return will not apply and we will repay less than the principal amount, if anything, resulting in a loss that is proportionate to the decline in the price of the Underlying Equity from November 23, 2021 to the final Observation Date. The Contingent Absolute Return and any contingent repayment of principal are based on whether the Final Underlying Price is below the Downside Threshold and apply only if you hold your Notes to maturity.
- ◆ **The Call Return Rate and the Probability that the Final Underlying Price Will Fall Below the Downside Threshold on the Final Observation Date Will Reflect in Part the Volatility of the Underlying Equity:** “Volatility” refers to the frequency and magnitude of changes in the price of the Underlying Equity. The greater the volatility of the Underlying Equity, the more likely it is that the price of that Underlying Equity could close below the Downside

Threshold on the final Observation Date. This risk will generally be reflected in a higher Call Return Rate for the Notes than the return payable on our conventional debt securities with a comparable term. However, while the Call Return Rate was set on November 23, 2021, the Underlying Equity's volatility can change significantly over the term of the Notes, and may increase. The price of the Underlying Equity could fall sharply as of the final Observation Date, which could result in a significant loss of your initial investment.

- ◆ **An Investment in the Notes Is Subject to the Credit Risk of Royal Bank of Canada:** The Notes are our unsubordinated and unsecured debt obligations and are not, either directly or indirectly, an obligation of any third party. Any payment to be made on the Notes, including payments in respect of an automatic call or any repayment of principal, depends on our ability to satisfy our obligations as they come due. As a result, our actual and perceived creditworthiness may affect the market value of the Notes and, if we were to default on our obligations, you may not receive any amounts owed to you under the terms of the Notes and you could lose your entire investment.
- ◆ **The Notes Will Be Subject to Risks, Including Non-Payment in Full, Under Canadian Bank Resolution Powers:** Under Canadian bank resolution powers, the Canada Deposit Insurance Corporation ("CDIC") may, in circumstances where we have ceased, or are about to cease, to be viable, assume temporary control or ownership over us and may be granted broad powers by one or more orders of the Governor in Council (Canada), including the power to sell or dispose of all or a part of our assets, and the power to carry out or cause us to carry out a transaction or a series of transactions the purpose of which is to restructure our business. See "Description of Debt Securities — Canadian Bank Resolution Powers" in the accompanying prospectus for a description of the Canadian bank resolution powers, including the bail-in regime. If the CDIC were to take action under the Canadian bank resolution powers with respect to us, holders of the Notes could be exposed to losses.
- ◆ **The Tax Treatment of the Notes Is Uncertain:** Significant aspects of the tax treatment of an investment in the Notes are uncertain. You should consult your tax adviser about your tax situation.

Risks Relating to the Secondary Market for the Notes

- ◆ **The Notes Are Not Expected to Have a Liquid Trading Market:** The Notes will not be listed on any securities exchange. RBCCM intends to offer to purchase the Notes in the secondary market, but is not required to do so. Even if there is a secondary market, it may not provide enough liquidity to allow you to trade or sell the Notes easily. Because other dealers are not likely to make a secondary market for the Notes, the price at which you may be able to trade your Notes is likely to depend on the price, if any, at which RBCCM is willing to buy the Notes.
- ◆ **The Terms of the Notes Were Influenced at Issuance and Their Market Value Prior to Maturity Will Be Influenced by Many Unpredictable Factors:** Many economic and market factors influenced the terms of the Notes at issuance and will influence their value prior to maturity. These factors are similar in some ways to those that could affect the value of a combination of instruments that might be used to replicate the payments on the Notes, including a combination of a bond with one or more options or other derivative instruments. For the market value of the Notes, we expect that, generally, the price of the Underlying Equity on any trading day will affect the value of the Notes more than any other single factor. However, you should not expect the value of the Notes in the secondary market to vary in proportion to changes in the price of the Underlying Equity. The value of the Notes will be affected by a number of other factors that may either offset or magnify each other, including:
 - ◆ the actual and expected volatility of the price of the Underlying Equity;
 - ◆ the time remaining to maturity of the Notes;
 - ◆ the dividend rate on the Underlying Equity;
 - ◆ interest and yield rates in the market generally;
 - ◆ a variety of economic, financial, political, regulatory or judicial events;
 - ◆ the occurrence of certain events relating to the Underlying Equity that may or may not require an adjustment to the terms of the Notes; and
 - ◆ our creditworthiness, including actual or anticipated downgrades in our credit ratings.

Some or all of these factors influenced the terms of the Notes at issuance, and will also influence the price you will receive if you choose to sell the Notes prior to maturity. The impact of any of the factors set forth above may enhance or offset some or all of any change resulting from another factor or factors. You may have to sell the Notes at a substantial discount from the principal amount if the price of the Underlying Equity is at, below or not sufficiently above, the Downside Threshold.

Risks Relating to the Initial Estimated Value of the Notes

- ◆ **The Initial Estimated Value of the Notes Is Less than the Price to the Public:** The initial estimated value for the Notes that is set forth on the cover page of this pricing supplement is less than the public offering price you pay for the Notes, and does not represent a minimum price at which we, RBCCM or any of our other affiliates would be willing to purchase the Notes in any secondary market (if any exists) at any time. If you attempt to sell the Notes 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 price of the Underlying Equity, the borrowing rate we pay to issue securities of this kind, and the inclusion in the price to the public of the underwriting discount, and our estimated profit and the costs relating to our hedging of the Notes. These factors, together with various credit, market and economic factors over the term of the Notes, are expected to reduce the price at which you may be able to sell the Notes in any secondary market and will affect the value of the Notes 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 Notes prior to maturity may be less than the price to public, as any such sale price would not be expected to include the underwriting discount and our estimated profit and the costs relating to our hedging of the Notes. In addition, any price at which you may sell the Notes is likely to reflect customary bid-ask spreads for similar trades. In addition to bid-ask spreads, the value of the Notes determined for any secondary market price is expected to be based on a secondary market rate rather than the internal borrowing rate used to price the Notes and determine the initial estimated value. As a result, any secondary price will be less than if the internal borrowing rate was used. The Notes are not designed to be short-term trading instruments. Accordingly, you should be able and willing to hold your Notes to maturity.
- ◆ **Our Initial Estimated Value of the Notes Is an Estimate Only, Calculated as of the Time the Terms of the Notes Were Set:** The initial estimated value of the Notes is based on the value of our obligation to make the payments on the Notes, together with the mid-market value of the derivative embedded in the terms of the Notes. See “Structuring the Notes” 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 Notes. These assumptions are based on certain forecasts about future events, which may prove to be incorrect. Other entities may value the Notes or similar securities at a price that is significantly different than we do.

The value of the Notes at any time after the Trade 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 Notes in any secondary market, if any, should be expected to differ materially from the initial estimated value of your Notes and the amount that may be paid on the Notes.

Risks Relating to the Underlying Equity

- ◆ **There Is No Affiliation Between the Underlying Equity Issuer and Us or UBS, and We and UBS Are Not Responsible for any Disclosure by the Underlying Equity Issuer:** We and UBS are not affiliated with the Underlying Equity issuer. However, we, UBS and our respective affiliates may currently, or from time to time in the future engage in business with the Underlying Equity issuer. Nevertheless, none of us, UBS or our respective affiliates assume any responsibility for the accuracy or the completeness of any information about the Underlying Equity and the Underlying Equity issuer. You, as an investor in the Notes, should make your own investigation into the Underlying Equity and the Underlying Equity issuer for your Notes. The Underlying Equity issuer is not involved in this offering and has no obligation of any sort with respect to your Notes. The Underlying Equity issuer has no obligation to take your interests into consideration for any reason, including when taking any corporate actions that might affect the value of your Notes.

- ◆ **The Anti-Dilution Protection for the Underlying Equity Is Limited:** The calculation agent will make adjustments to the Initial Underlying Price and the Downside Threshold for certain events affecting the Underlying Equity. However, the calculation agent will not be required to make an adjustment in response to all events that could affect the Underlying Equity. If an event occurs that does not require the calculation agent to make an adjustment, the value of the Notes and the payments on the Notes may be materially and adversely affected.
- ◆ **The Notes Are Subject to Single Stock Risk:** The price of the Underlying Equity can rise or fall sharply due to factors specific to the Underlying Equity and its issuer, such as stock price volatility, earnings, financial conditions, corporate, industry and regulatory developments, management changes and decisions and other events, as well as general market factors, such as general stock market volatility and levels, interest rates and economic and political conditions. You, as an investor in the Notes, should make your own investigation into the issuer of the Underlying Equity and the Underlying Equity. **We urge you to review financial and other information filed periodically by the issuer with the SEC.**
- ◆ **Holders of the Notes Will Not Be Entitled to Dividend Payments or Have Voting Rights:** As a holder of the Notes, you will not have voting rights, rights to receive cash dividends or other distributions, or any other rights that holders of the Underlying Equity would have.
- ◆ **Owning the Notes Is Not the Same as Owning the Underlying Equity:** The return on your Notes may not reflect the return you would realize if you actually owned the Underlying Equity. For instance, you will not receive or be entitled to receive any dividend payments or other distributions over the term of the Notes, which could constitute significant returns to actual owners of the Underlying Equity. Furthermore, the Underlying Equity may appreciate substantially during the term of the Notes, while your potential return, if called, will be limited to the applicable Call Return.

Risks Relating to Conflicts of Interest

- ◆ **We and Our Affiliates Will Have Potential Conflicts of Interest:** We and our affiliates play a variety of roles in connection with the issuance of the Notes, including hedging our obligations under the Notes. In performing these duties, the economic interests of the calculation agent and other affiliates of ours are potentially adverse to your interests as an investor in the Notes.
- ◆ **Research, Opinions or Recommendations by RBCCM, UBS or Their Affiliates May Be Inconsistent with an Investment in the Notes:** RBCCM, UBS or their affiliates may publish research, express opinions or provide recommendations as to the Underlying Equity that are inconsistent with investing in or holding the Notes, and which may be revised at any time. Any such research, opinions or recommendations could affect the price of the Underlying Equity, and therefore the market value of the Notes.
- ◆ **Our Activities, and those of UBS, May Adversely Affect the Price of the Underlying Equity:** Trading or other transactions by us, UBS or our respective affiliates in the Underlying Equity, or in futures, options, exchange-traded funds or other derivative products on the Underlying Equity may adversely affect the market price of the Underlying Equity, and therefore, the market value of the Notes.

Hypothetical Examples

Hypothetical terms only. Actual terms may vary. See the cover page for actual offering terms.

The examples below illustrate the payment upon a call or at maturity for a \$10 Note in a hypothetical offering of the Notes, with the following assumptions:*

Principal Amount:	\$10
Term:	2 years
Hypothetical Initial Underlying Price:	\$100.00
Call Return Rate:	11.00% per annum (or 2.75% per quarterly period).
Observation Dates:	Observation Dates will occur quarterly as set forth under "Final Terms of the Notes" in this pricing supplement.
Hypothetical Downside Threshold:	\$75.00 (which is 75% of the Initial Underlying Price)

* Not the actual Initial Underlying Price or Downside Threshold applicable to the Notes. The actual Initial Underlying Price and Downside Threshold are set forth on the cover page of this pricing supplement.

Example 1 - Notes are Called on the First Observation Date

Closing Price at first Observation Date:	\$105.00 (at or above Initial Underlying Price, Notes are called)
Call Price (per \$10.00):	\$10.275

Because the Notes are called on the first Observation Date, we will pay you on the Call Settlement Date a Call Price of \$10.275 per \$10.00 principal amount (a 2.75% total return on the Notes).

Example 2 - Notes are Called on the final Observation Date

Closing Price at first Observation Date:	\$95.00 (below Initial Underlying Price, Notes NOT called)
Closing Price at second Observation Date:	\$90.00 (below Initial Underlying Price, Notes NOT called)
Closing Price at third Observation Date:	\$85.00 (below Initial Underlying Price, Notes NOT called)
Closing Price at fourth Observation Date:	\$87.00 (below Initial Underlying Price, Notes NOT called)
Closing Price at fifth Observation Date:	\$89.00 (below Initial Underlying Price, Notes NOT called)
Closing Price at sixth Observation Date:	\$92.00 (below Initial Underlying Price, Notes NOT called)
Closing Price at seventh Observation Date:	\$95.00 (below Initial Underlying Price, Notes NOT called)
Closing Price at final Observation Date:	\$105.00 (at or above Initial Underlying Price, Notes are called)
Call Price (per \$10.00):	\$12.20

Because the Notes are called on the final Observation Date, we will pay you on the Call Settlement Date (which coincides with the Maturity Date in this example) a Call Price of \$12.20 per \$10.00 principal amount (a 22.00% total return on the Notes).

Example 3 - Notes are NOT Called and the Final Underlying Price is above the Downside Threshold on the final Observation Date

Closing Price at first Observation Date:	\$95.00 (below Initial Underlying Price, Notes NOT called)
Closing Price at second Observation Date:	\$90.00 (below Initial Underlying Price, Notes NOT called)
Closing Price at third Observation Date:	\$85.00 (below Initial Underlying Price, Notes NOT called)
Closing Price at fourth Observation Date:	\$87.00 (below Initial Underlying Price, Notes NOT called)
Closing Price at fifth Observation Date:	\$89.00 (below Initial Underlying Price, Notes NOT called)
Closing Price at sixth Observation Date:	\$92.00 (below Initial Underlying Price, Notes NOT called)
Closing Price at seventh Observation Date:	\$95.00 (below Initial Underlying Price, Notes NOT called)
Closing Price at final Observation Date:	\$90.00 (below Initial Underlying Price, but above Downside Threshold, Notes NOT called)
Payment at Maturity (per \$10.00):	$\$10.00 \times (1 + \text{Contingent Absolute Return})$ $\$10.00 \times (1 + 10\%)$ \$11.00

Because the Notes are not called and the Underlying Return is -10.00%, but the Final Underlying Price is above the Downside Threshold on the final Observation Date, we will pay you at maturity a total of \$11.00 per \$10.00 principal amount (a 10.00% return on the Notes). Accordingly, even though the price of the Underlying Equity has decreased, you will receive a positive return on the Notes.

Example 4 - Notes are NOT Called and the Final Underlying Price is below the Downside Threshold on the final Observation Date

Closing Price at first Observation Date:	\$95.00 (below Initial Underlying Price, Notes NOT called)
Closing Price at second Observation Date:	\$90.00 (below Initial Underlying Price, Notes NOT called)
Closing Price at third Observation Date:	\$85.00 (below Initial Underlying Price, Notes NOT called)
Closing Price at fourth Observation Date:	\$87.00 (below Initial Underlying Price, Notes NOT called)
Closing Price at fifth Observation Date:	\$89.00 (below Initial Underlying Price, Notes NOT called)
Closing Price at sixth Observation Date:	\$92.00 (below Initial Underlying Price, Notes NOT called)
Closing Price at seventh Observation Date:	\$95.00 (below Initial Underlying Price, Notes NOT called)
Closing Price at final Observation Date:	\$50.00 (below Initial Underlying Price and Downside Threshold, Notes NOT called)
Payment at Maturity (per \$10):	$\$10.00 \times (1 + \text{Underlying Return})$ $\$10.00 \times (1 - 50\%)$ \$5.00

Because the Notes are not called and the Final Underlying Price is below the Downside Threshold on the final Observation Date, we will pay you at maturity a total of \$5.00 per \$10.00 principal amount (a 50.00% loss on the Notes).

U.S. Federal Income Tax Consequences

Set forth below, together with the discussion of U.S. federal income tax in the accompanying product prospectus supplement, prospectus supplement and prospectus, is a summary of the material U.S. federal income tax consequences relating to an investment in the Notes. The following summary is not complete and is qualified in its entirety by the discussion under the sections entitled "Supplemental Discussion of U.S. Federal Income Tax Consequences" in the accompanying product prospectus supplement, the section "Tax Consequences" in the accompanying prospectus and the section entitled "Certain Income Tax Consequences" in the accompanying prospectus supplement, which you should carefully review prior to investing in the Notes.

In the opinion of our special U.S. tax counsel, Ashurst LLP, it would generally be reasonable to treat the Notes as callable pre-paid cash-settled derivative contracts linked to the Underlying Equity for U.S. federal income tax purposes, and the terms of the Notes require a holder (in the absence of a change in law or an administrative or judicial ruling to the contrary) to treat the Notes for all tax purposes in accordance with such characterization. If the Notes are so treated, a holder should generally recognize capital gain or loss upon the call, sale or maturity of the Notes in an amount equal to the difference between the amount a holder receives at such time and the holder's tax basis in the Notes. 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 tax treatments are also possible and the Internal Revenue Service (the "IRS") might assert that a treatment other than that described above is more appropriate. In addition, the IRS has released a notice that may affect the taxation of holders of the Notes. According to the notice, the IRS and the U.S. Treasury Department are actively considering whether the holder of an instrument such as the Notes should be required to accrue ordinary income on a current basis. It is not possible to determine what guidance they will ultimately issue, if any. It is possible, however, that under such guidance, holders of the Notes 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 special "constructive ownership rules" of Section 1260 of the Code might be applied to such instruments. Holders are urged to consult their tax advisors concerning the significance, and the potential impact, of the above considerations.

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 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, 2023. Based on our determination that the Notes are not delta-one instruments, non-U.S. holders should not be subject to withholding on dividend equivalent payments, if any, under the Notes. However, it is possible that the Notes could be treated as deemed reissued for U.S. federal income tax purposes upon the occurrence of certain events affecting the Underlying Equity or the Notes, and following such occurrence the Notes 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 Equity or the Notes should consult their tax advisors as to the application of the dividend equivalent withholding tax in the context of the Notes 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.

Please see the discussion under the section entitled "Supplemental Discussion of U.S. Federal Income Tax Consequences" in the accompanying product prospectus supplement for a further discussion of the U.S. federal income tax consequences of an investment in the Notes.

Canadian Federal Income Tax Consequences

For a discussion of the material Canadian federal income tax consequences relating to an investment in the Notes, please see the section entitled “Supplemental Discussion of Canadian Federal Income Tax Consequences” in the accompanying product prospectus supplement, together with the section entitled “Tax Consequences” in the accompanying prospectus, which you should carefully review prior to investing in the Notes.

Information About the Underlying Equity

Included on the following pages is a brief description of the issuer of the Underlying Equity. This information has been obtained from publicly available sources. Set forth below is a graph that provides the historical closing prices for the Underlying Equity. We obtained the closing price information set forth below from the Bloomberg Professional® service ("Bloomberg") without independent verification. You should not take the historical prices of the Underlying Equity as an indication of future performance.

The Underlying Equity is registered under the Securities Exchange Act of 1934, as amended (the "Exchange Act"). Companies with securities registered under the Exchange Act are required to file financial and other information specified by the SEC periodically. Information filed by the Underlying Equity issuer with the SEC can be reviewed electronically through a website maintained by the SEC. The address of the SEC's website is <http://www.sec.gov>. Information filed with the SEC by the Underlying Equity issuer under the Exchange Act can be located by reference to its SEC Central Index Key ("CIK") number provided below. Information from outside sources is not incorporated by reference in, and should not be considered part of, this pricing supplement or any accompanying prospectus or prospectus supplement. We have not independently verified the accuracy or completeness of the information contained in outside sources.

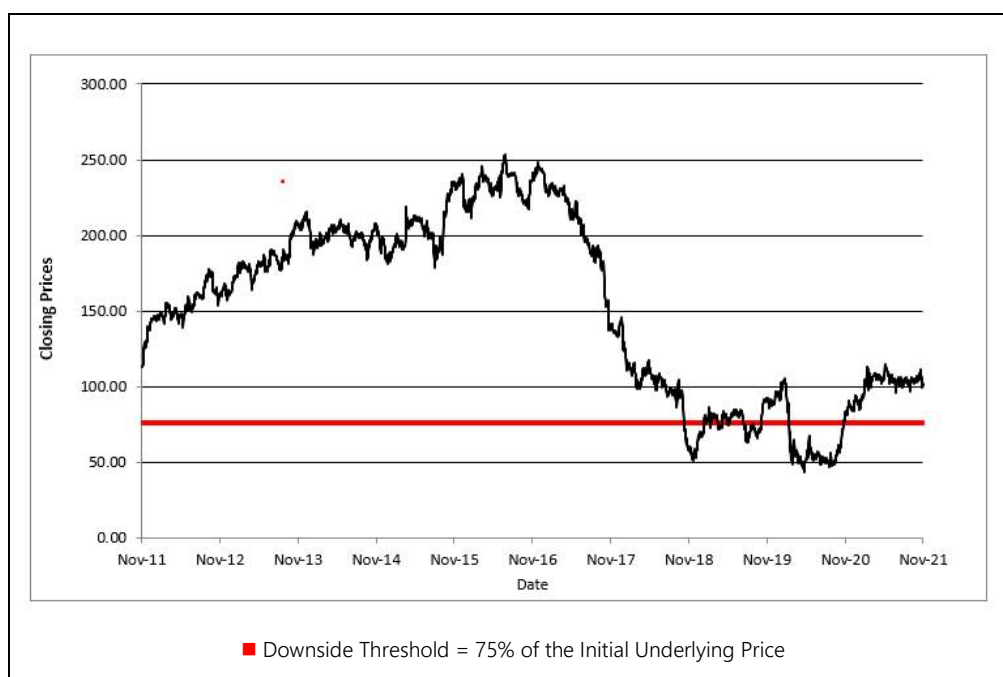
General Electric Company

According to publicly available information, General Electric Company is a technology and financial services company. The company's products and services include aircraft engines, power generation, water processing, household appliances, medical imaging, business and consumer financing, and industrial products.

Information filed by the company with the SEC under the Exchange Act can be located by reference to its SEC CIK number: 0000040545. The company's common stock is listed on the New York Stock Exchange under the ticker symbol "GE."

Historical Information

The graph below illustrates the performance of the Underlying Equity from November 23, 2011 to November 23, 2021. The closing price of the Underlying Equity on November 23, 2021 was \$102.08. The horizontal red line represents the Downside Threshold of \$76.56, which is 75% of the closing price on that date.



HISTORIC PERFORMANCE IS NOT AN INDICATION OF FUTURE PERFORMANCE.

Source: Bloomberg L.P. We have not independently verified the accuracy or completeness of the information obtained from Bloomberg Financial Markets.

Supplemental Plan of Distribution (Conflicts of Interest)

We have agreed to indemnify UBS Financial Services Inc. and RBCCM against liabilities under the Securities Act of 1933, as amended, or to contribute payments that UBS Financial Services Inc. and RBCCM may be required to make relating to these liabilities as described in the prospectus supplement and the prospectus. We have agreed that UBS Financial Services Inc. may sell all or a part of the Notes that it will purchase from us to investors at the price to public or to its affiliates at the price indicated on the cover page of this pricing supplement.

UBS may allow a concession not in excess of the underwriting discount set forth on the cover page of this pricing supplement to its affiliates for distribution of the Notes.

We expect to deliver the Notes on a date that is greater than two business days following the Trade Date. 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 Notes more than two business days prior to the original issue date will be required to specify alternative settlement arrangements to prevent a failed settlement.

Subject to regulatory constraints and market conditions, RBCCM intends to offer to purchase the Notes in the secondary market, but it is not required to do so.

We or our affiliates may enter into swap agreements or related hedge transactions with one of our other affiliates or unaffiliated counterparties in connection with the sale of the Notes and RBCCM and/or an affiliate may earn additional income as a result of payments pursuant to the swap or related hedge transactions. See "Use of Proceeds and Hedging" in the accompanying product prospectus supplement no. UBS-TAS-2.

The value of the Notes shown on your account statement may be based on RBCCM's estimate of the value of the Notes if RBCCM or another of our affiliates were to make a market in the Notes (which it is not obligated to do). That estimate will be based upon the price that RBCCM may pay for the Notes in light of then prevailing market conditions, our creditworthiness and transaction costs. For a period of approximately 7 months after the issue date of the Notes, the value of the Notes that may be shown on your account statement may be higher than RBCCM's estimated value of the Notes at that time. This is because the estimated value of the Notes will not include the underwriting discount and our hedging costs and profits; however, the value of the Notes shown on your account statement during that period may be a higher amount, reflecting the addition of the underwriting discount and our estimated costs and profits from hedging the Notes. Any such excess is expected to decrease over time until the end of this period. After this period, if RBCCM repurchases your Notes, it expects to do so at prices that reflect their estimated value. This period may be reduced at RBCCM's discretion based on a variety of factors, including but not limited to, the amount of the Notes that we repurchase and our negotiated arrangements from time to time with UBS.

For additional information as to the relationship between us and RBCCM, please see the section "Plan of Distribution—Conflicts of Interest" in the prospectus dated September 14, 2021.

Structuring the Notes

The Notes are our debt securities, the return on which is linked to the performance of the Underlying Equity. As is the case for all of our debt securities, including our structured notes, the economic terms of the Notes 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 Notes 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 is a factor that resulted in a higher initial estimated value of the Notes at the time their terms were set than if the secondary market rate was used. Unlike the estimated value that is set forth on the cover page of this pricing supplement, any value of the Notes determined for purposes of a secondary market transaction may be based on a different borrowing rate, which may result in a lower value for the Notes than if our initial internal borrowing rate were used.

In order to satisfy our payment obligations under the Notes, 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 Equity, and the tenor of the Notes. The economic terms of the Notes and their initial estimated value depend in part on the terms of these hedging arrangements.

The lower implied borrowing rate is a factor that reduced the economic terms of the Notes to you. The initial offering price of the Notes also reflects the underwriting commission and our estimated hedging costs. These factors resulted in the initial estimated value for the Notes on the Trade Date being less than their public offering price. See “Key Risks—The Initial Estimated Value of the Notes Is Less than the Price to the Public” above.

Terms Incorporated in Master Note

The terms appearing above under the caption “Final Terms of the Notes” and the provisions in the accompanying product prospectus supplement no. UBS-TAS-2 dated November 24, 2021 under the caption “General Terms of the Securities,” are incorporated into the master note issued to DTC, the registered holder of the Notes.

Validity of the Notes

In the opinion of Norton Rose Fulbright Canada LLP, the issue and sale of the Notes has been duly authorized by all necessary corporate action of the Bank in conformity with the Indenture, and when the Notes have been duly executed, authenticated and issued in accordance with the Indenture and delivered against payment therefor, the Notes will be validly issued and, to the extent validity of the Notes 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 Bank, 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 Notes 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 Royal Bank’s Form 6-K filed with the SEC on September 14, 2021.

In the opinion of Ashurst LLP, when the Notes have been duly completed in accordance with the Indenture and issued and sold as contemplated by the prospectus supplement and the prospectus, the Notes will be valid, binding and enforceable obligations of the Bank, 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 Bank 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 Bank’s Form 6-K dated September 14, 2021.

Royal Bank of Canada



Trigger Autocallable Securities Linked to Common Stock or Exchange Traded Fund Shares

- Royal Bank of Canada may offer and sell from time to time Trigger Autocallable Securities linked to the common equity securities of an issuer, including American depositary shares ("ADSs," and when reference is made to an ADS, the term "issuer" refers to the issuer of the shares underlying the ADSs), or shares of an exchange traded fund (an "ETF," and each such common equity security or ETF is referred to as an "underlying equity"). We refer to these securities as the "securities."
- The prospectus dated September 14, 2021, the prospectus supplement dated September 14, 2021 and this product prospectus supplement describe the terms that will apply generally to the securities. A separate free writing prospectus or pricing supplement, as the case may be, will describe the terms that apply specifically to the securities, including any changes to the terms specified below. We refer to such free writing prospectuses and pricing supplements generally as terms supplements. If the terms described in the relevant terms supplement are inconsistent with those described in this product prospectus supplement, the accompanying prospectus supplement or prospectus, the terms described in the relevant terms supplement will control.
- The securities are senior unsecured obligations of Royal Bank of Canada, and any payment on the securities is subject to our credit risk.
- No interest payments will be made on the securities.
- The securities will be automatically called for the principal amount plus an amount based on the applicable Call Return Rate if the closing price of one share of the underlying equity on any Observation Date, as set forth in the applicable terms supplement, is equal to or greater than the Initial Underlying Price. If the securities are called, you will receive the Call Price for that Observation Date as set forth in the applicable terms supplement. Unless otherwise specified in the relevant terms supplement, you will receive a positive return on your securities only if the underlying equity closes at a price equal to or above the Initial Underlying Price on an Observation Date, including the final Observation Date.
- **The securities do not guarantee any return of principal at maturity.** If the securities have not been called, and the underlying equity closes below the applicable Downside Threshold on the final Observation Date, you will lose 1% (or a fraction thereof) of the principal amount for every 1% (or a fraction thereof) decrease in the price per share of the underlying equity below the Initial Underlying Price. **In this case, the payment you will receive at maturity will be less than the principal amount of your securities and may be zero.**
- Subject to our creditworthiness, and unless otherwise specified in the relevant terms supplement, if you hold the securities to maturity, the securities are not called on the final Observation Date and the closing price of the underlying equity is above or equal to the Downside Threshold on the final Observation Date, we will pay you an amount in cash equal to the principal amount of your securities.
- For important information about the tax consequences of an investment in the securities, see "Supplemental Discussion of U.S. Federal Income Tax Consequences" and "Supplemental Discussion of Canadian Federal Income Tax Consequences" below.
- Minimum denominations of \$10 and integral multiples of \$10, unless otherwise specified in the relevant terms supplement.
- Investing in the securities is not equivalent to investing in the underlying equity, or any of the equity securities included in any ETF.
- The securities will not be listed on any securities exchange.

Your investment in the securities involves certain risks. The securities differ from ordinary debt securities in that the repayment of principal is not guaranteed. If the Final Underlying Price is greater than or equal to the Downside Threshold on the final Observation Date, you will receive the principal amount. However, if the Final Underlying Price is below the Downside Threshold on the final Observation Date, will pay you for each \$10 in principal amount of the securities you own a cash payment that is less than your principal amount, if anything, resulting in a loss that is proportionate to the decline of the underlying equity from the Trade Date to the final Observation Date, resulting in a loss of some or all of your investment. Any payment on the securities, including any repayment of principal, is subject to our creditworthiness. See "Risk Factors" beginning on page PS-4 to read about investment risks relating to the securities.

None of the Securities and Exchange Commission (the "SEC"), any state securities commission or any other regulatory body has approved or disapproved of the securities or passed upon the accuracy of this product prospectus supplement or the accompanying prospectus and prospectus supplement. Any representation to the contrary is a criminal offense.

We may use this product prospectus supplement in the initial sale of a security. In addition, RBC Capital Markets LLC ("RBCCM"), or one of our other affiliates may use this product prospectus supplement in a market-making transaction in a security after its initial sale. **Unless we or our agent informs the purchaser otherwise in the confirmation of sale, this product prospectus supplement is being used in a market-making transaction.**

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. governmental agency or instrumentality.

UBS Financial Services Inc.

RBC Capital Markets, LLC

Product Prospectus Supplement dated November 24, 2021

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In making your investment decision, you should rely only on the information contained or incorporated by reference in the terms supplement relevant to your investment, this product prospectus supplement and the accompanying prospectus supplement and prospectus with respect to the securities offered and with respect to Royal Bank of Canada. This product prospectus supplement, together with the relevant terms supplement, and the accompanying prospectus and prospectus supplement, contain the terms of the securities and supersede 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, fact sheets, brochures or other educational materials of ours, or any written materials prepared by UBS Financial Services Inc. or RBC Capital Markets, LLC. The information in the relevant terms supplement, this product prospectus supplement and the accompanying prospectus supplement and prospectus may only be accurate as of the dates of each of these documents, respectively.

The securities described in the relevant terms supplement and this product prospectus supplement are not appropriate for all investors, and involve important legal and tax consequences and investment risks, which should be discussed with your professional advisers. You should be aware that the regulations of the Financial Industry Regulatory Authority, or FINRA, and the laws of certain jurisdictions (including regulations and laws that require brokers to ensure that investments are suitable for their customers) may limit the availability of the securities. The relevant terms supplement, this product prospectus supplement and the accompanying prospectus supplement and prospectus do not constitute an offer to sell or a solicitation of an offer to buy the securities in any circumstances in which such offer or solicitation is unlawful.

In this product prospectus supplement, the relevant terms supplement and the accompanying prospectus supplement and prospectus, “we,” “us” and “our” refer to Royal Bank of Canada, unless the context requires otherwise.

SUMMARY

The information in this “Summary” section is qualified by the more detailed information set forth in this product prospectus supplement, the prospectus supplement and the prospectus, as well as the relevant terms supplement.

Key Terms

Underlying Equity:	The underlying equity specified in the relevant terms supplement. Each underlying equity will be either an equity security or a share of an ETF.
Call Feature:	The securities will be called automatically if the closing price of one share of the underlying equity on any Observation Date is at or above the Initial Underlying Price.
Call Return Rate:	A return based on a per annum percentage to be specified in the relevant terms supplement. The call return increases the longer the securities are outstanding.
Call Price:	If the securities are called, you will receive on the applicable call settlement date a cash payment per \$10.00 principal amount of the securities equal to the Call Price for the applicable Observation Date on which the securities are called. The Call Price applicable to each Observation Date will be specified in the relevant terms supplement and will be calculated based on the Call Return Rate and the amount of time that the securities have been outstanding between the settlement date and the applicable Call Settlement Date.
Call Settlement Dates:	Unless otherwise specified in the relevant terms supplement, if the securities are called on any Observation Date (other than the final Observation Date), the Call Settlement Date will be three business days following such Observation Date, unless that day is not a business day, in which case the Call Settlement Date will be the next following business day. If the securities are called on the final Observation Date, the Call Settlement Date will be the maturity date. As described under “General Terms of the Securities—Observation Dates” below, the calculation agent may postpone any Observation Date, and therefore a Call Settlement Date, if a market disruption event occurs or is continuing on a day that would otherwise be an Observation Date. We describe market disruption events under “General Terms of the Securities—Market Disruption Event” below.
Payment at Maturity:	<p>Unless otherwise specified in the relevant terms supplement, if the securities are not called, we will pay you at maturity a cash payment per \$10.00 principal amount of the securities based on the Final Underlying Price, calculated as described below:</p> <ul style="list-style-type: none">• If the Final Underlying Price is above or equal to the Downside Threshold on the final Observation Date, we will pay you a cash payment equal to the principal amount of your securities.• If the Final Underlying Price is below the Downside Threshold on the final Observation Date, we will pay you for each \$10 in principal amount of the securities you own a cash payment that is less than your principal amount, if anything, resulting in a loss that is proportionate to the decline of the underlying equity from the Trade Date to the final Observation Date, for a return equal to: $\\$10.00 \times (1 + \text{underlying return})$. <p>The repayment of your principal amount is not guaranteed. If the securities are not called, you may lose some or all of your investment. Specifically, if the securities are not called and the Final Underlying Price is below the Downside Threshold on the final Observation Date, you will lose 1% (or a fraction thereof) of your principal amount for each 1% (or a fraction thereof) decrease in the price per share of the underlying equity</p>

below the Initial Underlying Price. Accordingly, if the Final Underlying Price is below the Downside Threshold on the final Observation Date, you may lose up to 100% of your principal amount.

Contingent
Absolute
Return
Autocallable
Securities:

If so specified in the applicable terms supplement, your securities will have the additional terms set forth under “General Terms of the Notes—Contingent Absolute Return Autocallable Securities.”

Underlying
Return:

Unless otherwise specified in the relevant terms supplement:

Final Underlying Price – Initial Underlying Price
Initial Underlying Price

Initial
Underlying
Price:

Unless otherwise specified in the relevant terms supplement, the closing price of one share of the underlying equity on the Trade Date or such other date as specified in the relevant terms supplement. The Initial Underlying Price may be subject to adjustment. See “General Terms of the Securities—Anti-dilution Adjustments.”

Final
Underlying
Price:

Unless otherwise specified in the relevant terms supplement, the closing price of one share of the underlying equity on the final Observation Date. The Final Underlying Price is subject to adjustment upon the occurrence of certain corporate events affecting the underlying equity. See “General Terms of the Securities—Payment at Maturity—Anti-dilution Adjustments.”

Downside
Threshold:

A specified price of the underlying equity which is below the Initial Underlying Price, as set forth in the applicable terms supplement. The Downside Threshold is subject to adjustment upon the occurrence of certain corporate events affecting the underlying equity. See “General Terms of the Securities—Anti-dilution Adjustments.”

Observation
Date(s):

One or more dates as specified in the relevant terms supplement, subject to postponement in the event of certain market disruption events.

Issue Price:

Unless otherwise specified in the relevant terms supplement, \$10 per \$10 in principal amount of the securities.

Trade Date:

As specified in the relevant terms supplement.

Settlement
Date:

As specified in the relevant terms supplement.

Maturity Date:

As specified in the relevant terms supplement. If not previously called, the securities will mature on the maturity date. The maturity date is subject to postponement in the event of certain market disruption events and as described under “General Terms of the Securities—Payment at Maturity.”

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 prospectus and the prospectus supplement. The securities do not pay interest or guarantee any return of principal at, or prior to, maturity. Investing in the securities is not equivalent to investing directly in the underlying equity. In addition, your investment in the securities entails other risks not associated with an investment in conventional debt securities. **You should consider carefully the following discussion of risks before you decide that an investment in the securities is suitable for you.***

Risks Relating to the Terms and Structure of the Securities

The securities do not pay interest or guarantee any return of principal at maturity. A decrease in the value of the underlying equity may lead to a loss of some or all of your investment at maturity.

The securities do not pay interest and may not return any of your investment. The amount payable to you at maturity, if any, will be determined as described in this product prospectus supplement and the relevant terms supplement.

The return on the securities will depend on whether underlying equity increases in value as of each Observation Date, or if the securities are not called, the extent to which the Final Underlying Price is less than the applicable Downside Threshold. If the securities are not called and the Final Underlying Price is below the Downside Threshold on the final Observation Date, you will lose 1% (or a fraction thereof) of the principal amount for every 1% (or a fraction thereof) decrease in the price per share of the underlying equity below the Initial Underlying Price. Accordingly, your return, if any, will be less than the principal amount of the securities.

The securities are subject to the credit risk of Royal Bank of Canada.

The securities are subject to the credit risk of Royal Bank of Canada and our credit ratings and credit spreads may adversely affect the market value of the securities. Investors are dependent on Royal Bank of Canada's ability to pay all amounts due on the securities, and therefore investors are subject to our credit risk and to changes in the market's view of our creditworthiness. Any decline in our credit ratings or increase in the credit spreads charged by the market for taking our credit risk is likely to adversely affect the value of the securities. Payment on the securities, including any repayment of principal, is subject to the creditworthiness of Royal Bank of Canada. If we were to default on our payment obligations, you may not receive any amounts owed to you under the securities and you could lose your entire investment.

Your potential return on the securities is limited to the Call Return Rate.

The return on the securities is limited to the Call Return Rate set forth in the relevant terms supplement, regardless of any appreciation of the underlying equity. Your investment in the securities will result in a gain if the closing price of one share of the underlying equity on any of the Observation Dates is at or above the Initial Underlying Price. However, this gain will be limited to the return represented by the applicable Call Price, regardless of the appreciation of the underlying equity, which may be significantly greater than the return associated with the Call Price. As a result, the return on the securities, if any, is expected to be limited to the Call Return Rate.

If you sell your securities prior to maturity, you may receive less than the principal amount.

If your securities are not automatically called, you should be willing to hold your securities until maturity. If you are able to sell your securities in the secondary market prior to maturity, you may have to sell them for a loss relative to the principal amount, even if the price of the underlying equity is above the Downside Threshold. In addition, you will not receive the benefit of any contingent repayment of principal represented by the Downside Threshold if you sell your securities before the maturity date. The potential returns described in the relevant terms supplement assume that your securities, which are not designed to be short-term trading instruments, are held to maturity.

The securities may be called early and are subject to reinvestment risk.

If your securities are called early, the term of the securities will be reduced and you will not receive any payment on the securities after the applicable Call Settlement Date. There is no guarantee that you would be able to reinvest the proceeds from an automatic call of the securities at a comparable rate of return for a similar level of risk. To the extent you are able to reinvest such proceeds in an investment comparable to the securities, you may incur transaction costs such as dealer discounts and hedging costs built into the price of the new securities. Because the securities may be called as early as one month after issuance, you should be prepared in the event the securities are called early.

The Call Return Rate will reflect in part the volatility of the underlying equity and may not be sufficient to compensate you for the risk of loss at maturity.

“Volatility” refers to the frequency and magnitude of changes in the price of the underlying equity. The greater the volatility of the applicable underlying equity, the more likely it is that the price of that underlying equity could close below the Downside Threshold on the Final Valuation Date of the securities. This risk will generally be reflected in a higher Call Return Rate for the securities than the return payable on our conventional debt securities with a comparable term. However, while the Call Return Rate is set on the Trade Date, the underlying equity’s volatility can change significantly over the term of the securities, and may increase. The price of the underlying equity could fall sharply as of the Final Valuation Date, which could result in a significant loss of your principal amount.

Holders of the securities will not participate in any appreciation of the underlying equity, and any positive return on the securities will be limited to the Call Return Rate.

Despite being exposed to the risk of a decline in the price of the applicable underlying equity, you will not participate in any appreciation in the price of the applicable underlying equity. Any positive return on the securities will be limited to the Call Return Rate. Accordingly, if the Final Underlying Price is greater than the Initial Underlying Price, you should expect that your return on the securities at maturity may be less than your return on a direct investment in the applicable underlying equity or on a similar security that allows you to participate in the appreciation of the price of the underlying equity. In contrast, if the Final Underlying Price is less than the Downside Threshold, we will deliver to you at maturity for each security you own an amount less than the principal amount, and in each case you may lose your entire investment. As a result, a positive return on the securities, if any, will be limited to the Call Return Rate for the securities.

If your securities are Contingent Absolute Return Autocallable Securities, their terms will differ from those of the ordinary securities.

If specified in the relevant terms supplement, your securities may be Contingent Absolute Return Autocallable Securities. If your securities are Contingent Absolute Return Autocallable Securities, they will have terms that differ from those discussed in this product prospectus supplement, namely that if the securities are not called and the Final Underlying Price is greater than or equal to the Downside Threshold, you will receive a positive return equal to the absolute value of the underlying return. This differs from ordinary Trigger Autocallable Securities in that for ordinary Trigger Autocallable Securities, if the securities are not called and the Final Underlying Price is greater than or equal to the Downside Threshold, you will receive only your principal amount in return.

Regardless of whether the relevant terms supplement specifies your securities as Contingent Absolute Return Autocallable Securities, if the Final Underlying Price is less than the Downside Threshold, you will be exposed to the full decline in the price of the underlying equity, resulting in a loss of some or all your entire investment.

Your return on the securities may be lower than the return on a conventional debt security of comparable maturity.

The return that you will receive on your securities, which could be negative, may be less than the return you could earn on other investments. Your investment may not reflect the full opportunity cost to you when you take into account factors that affect the time value of money, such as inflation.

Your return on the securities will not reflect dividends on the underlying equity or the equity securities included in any ETF.

The return on the securities will not reflect the return you would realize if you actually owned the underlying equity or the equity securities included in any applicable ETF and received the dividends paid on those equity securities. The Final Underlying Price of the underlying equity and the determination of the amount to be paid at maturity or upon an automatic call will not take into consideration the value of those dividends.

Owning the securities is not the same as owning the underlying equity.

The return on your securities may not reflect the return you would realize if you actually owned the underlying equity. For instance, the underlying equity may appreciate substantially during the term of the securities, and you will not participate in that appreciation. The following factors, among others, may cause the financial return on your securities to differ from the financial return you would receive by investing directly in the underlying equity:

- the return on a direct investment in the underlying equity would depend primarily upon the relative appreciation or depreciation of the underlying equity during the term of the securities, and not on whether the closing price of the underlying equity is equal to or greater than the Initial Underlying Price on any Observation Date or is less than the Downside Threshold on the final Observation Date;
- in the case of a direct investment in the underlying equity, the return could include substantial dividend payments or other distributions, which you will not receive as an investor in the securities;
- in the case of a direct investment in the underlying equity, the return could include rights, such as voting rights, that you will not have as an investor in the securities; and
- a direct investment in the underlying equity is likely to have tax consequences that are different from an investment in the securities.

If the price of the shares of the underlying equity changes, the market value of your securities may not change in the same manner.

Owning the securities is not the same as owning shares of the underlying equity. Accordingly, changes in the price of one share of the underlying equity may not result in a comparable change of the market value of the securities. If the closing price of one share of the underlying equity on any trading day increases above the Initial Underlying Price, the value of the securities may not increase in a comparable manner, if at all. It is possible for the price of the shares of the underlying equity to increase while the value of the securities declines.

The determination as to whether the securities are subject to an automatic call, or the formula for calculating the payment at maturity of the securities do not take into account all developments in the price of the underlying equity.

Changes in the price of the underlying equity during the periods between each Observation Date will not be reflected in the determination as to whether the securities are subject to an automatic call, or the calculation of the amount payable, if any, at maturity of the securities. The calculation agent will determine whether the securities are subject to an automatic call by observing only the closing price of the underlying equity on each applicable Observation Date. The calculation agent will calculate the payment at maturity by comparing only the closing price of the underlying equity on the final Observation Date relative to the closing price of the underlying equity on the Trade Date (as the same may be adjusted upon the occurrence of certain adjustment events described in "General Terms of the

Securities—Anti-dilution Adjustments”). No other prices or values will be taken into account. As a result, you may lose some or all of your principal amount even if the price of the underlying equity has risen at certain times during the term of the securities before falling to a closing price below the Downside Threshold on the final Observation Date.

No assurance that the investment view implicit in the securities will be successful.

It is impossible to predict whether and the extent to which the price of the underlying equity will rise or fall. There can be no assurance that the price of the underlying equity will rise above the Initial Underlying Price on any Observation Date or that the closing price of the underlying equity will not fall below the Downside Threshold on the final Observation Date. The closing price of the underlying equity on each Observation Date will be influenced by complex and interrelated political, economic, financial and other factors that affect the issuer of the underlying equity or, if the underlying equity is an ETF, the equity securities included in that ETF. You should be willing to accept the risk of losing some or all of your investment.

Risks Relating to the Secondary Market for the Securities

Secondary trading in the securities may be limited.

Unless otherwise specified in the relevant terms supplement, the securities will not be listed on a securities exchange. There may be little or no secondary market for 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.

RBCCM, may act as a market maker for the securities, but is not required to do so. Because we do not expect that other market makers 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 buy the securities. If at any time RBCCM or another Agent does not act as a market maker, it is likely that there would be little or no secondary market for the securities. We expect that transaction costs in any secondary market would be high. As a result, the difference between the bid and asked prices for your securities in any secondary market could be substantial. If you sell your securities before maturity, you may have to do so at a substantial discount from the issue price, and as a result, you may suffer substantial losses.

The inclusion in the original issue price of each agent’s commission and the estimated cost of hedging our obligations under the securities through one or more of our affiliates is likely to adversely affect the value of the securities prior to maturity.

While the payment at maturity, if any, will be based on the principal amount of your securities, the original issue price of the securities includes each agent’s commission and the estimated cost of hedging our obligations under the securities through one or more of our affiliates. Such estimated cost includes our affiliates’ expected cost of providing such hedge, as well as the profit our affiliates expect to realize in consideration for assuming the risks inherent in providing such hedge. As a result, assuming no change in market conditions or any other relevant factors, the price, if any, at which RBCCM may be willing to purchase securities from you in secondary market transactions, if at all, will likely be lower than the original issue price. In addition, any such prices may differ from values determined by pricing models used by RBCCM, as a result of such compensation or other transaction costs.

Prior to maturity, the value of the securities will be influenced by many unpredictable factors.

Many economic and market factors will influence the value of the securities. We expect that, generally, the closing price of one share of the underlying equity on any day will affect the value of the securities more than any other single factor. However, you should not expect the value of the securities in the secondary market to vary in proportion to changes in the closing price of one share of the underlying equity. The value of the securities will be affected by a number of other factors that may either offset or magnify each other, including:

- the market price of the shares of the underlying equity;

- whether the market price of the underlying equity is below the Downside Threshold;
- the expected volatility of the underlying equity;
- the time to maturity of the securities;
- the dividend rate on the underlying equity or on the equity securities held by the underlying equity (if the underlying equity is an ETF);
- interest and yield rates in the market generally, as well as in the markets of the equity securities held by the underlying equity (if the underlying equity is an ETF);
- the occurrence of certain events relating to the underlying equity that may or may not require an adjustment to the Initial Underlying Price and the Downside Threshold;
- economic, financial, political, regulatory or judicial events that affect the underlying equity or the equity securities held by the underlying equity (if the underlying equity is an ETF) or stock markets generally, and which may affect the closing price of shares of the underlying equity on any Observation Date;
- if the applicable underlying equity is an ETF that invests in securities that are traded in non-U.S. markets, the exchange rate and the volatility of the exchange rate between the U.S. dollar and the currencies in which the equity securities held by the underlying equity are traded, and, if the net asset value of the underlying equity is calculated in one currency and the equity securities held by the underlying equity are traded in another currency or currencies, the correlation between those rates and the market price of the underlying equity; and
- our creditworthiness, including actual or anticipated downgrades in our credit ratings.

Some or all of these factors will influence the price you will receive if you choose to sell your securities prior to maturity. The impact of any of the factors set forth above may enhance or offset some or all of any change resulting from another factor or factors. You may have to sell your securities at a substantial discount from the principal amount if the market price of the underlying equity is at, below or not sufficiently above the Initial Underlying Price.

The securities are not designed to be short-term trading instruments.

The price at which you will be able to sell your securities to us or our affiliates prior to maturity, if at all, may be at a substantial discount from the principal amount of the securities, even in cases where the closing price of one share of the underlying equity has appreciated since the Trade Date. In addition, you will not receive the benefit of any contingent repayment of principal represented by the Downside Threshold if you sell your securities before the maturity date. The potential returns described in the relevant terms supplement assume that your securities, which are not designed to be short-term trading instruments, are held to maturity.

Risks Relating to the Underlying Equity

The issuer of the underlying equity will not have any role or responsibilities with respect to the securities.

The issuer of the underlying equity will not have authorized or approved the securities, and will not be involved in any offering. The issuer of the underlying equity will not have any financial or legal obligation with respect to the securities or the amounts to be paid to you, including any obligation to take our needs or your needs into consideration for any reason, including taking any corporate actions that might affect the value of the underlying equity or the securities. The issuer of the underlying equity will not receive any of the proceeds from any offering of the securities. No issuer of an underlying equity will be responsible for, or participate in, the determination or calculation of the amounts receivable by holders of the securities.

We and our affiliates have no affiliation with the issuer of any underlying equity and are not responsible for its public disclosure of information or that of any other company.

Unless otherwise specified in the applicable terms supplement, we and our affiliates are not affiliated with the underlying equity issuer and have no ability to control or predict its actions, including any corporate actions of the type that would require the calculation agent to adjust the determinations of the payments on the securities, and have no ability to control the public disclosure of these corporate actions or any events or circumstances affecting the underlying equity issuer, unless (and only to the extent that) our securities or the securities of our affiliates are represented by that underlying equity. The underlying equity issuer will not be involved in the offering of the securities in any way and has no obligation to consider your interests as owner of the securities in taking any corporate actions that might affect the market value of your securities or the payment at maturity. An underlying equity issuer may take actions that could adversely affect the market value of the securities.

The securities are unsecured debt obligations of Royal Bank of Canada only and are not obligations of the underlying equity issuer or any other third party. No portion of the issue price you pay for the securities will be paid to the underlying equity issuer.

Unless otherwise specified in the applicable terms supplement, we will have derived the information about the respective underlying equity issuer and the underlying equity from publicly available information, without independent verification. Neither we nor any of our affiliates assume any responsibility for the adequacy or accuracy of the information about the respective underlying equity issuer or the underlying equity. **You, as an investor in the securities, should make your own investigation into the respective underlying equity issuer and the underlying equity for your securities. We urge you to review financial and other information filed periodically by the underlying equity issuer with the SEC.**

This product prospectus supplement and each terms supplement relates only to the securities and does not relate to the underlying equity or an underlying equity issuer.

The issuer of the underlying equity—and thus the underlying equity—is subject to various market risks.

The issuer of the underlying equity is subject to various market risks or, if the underlying equity is an ETF, each company whose securities constitute the ETF or each futures contract or commodity that constitutes the securities of the ETF, are subject to various market risks. Consequently, the prices of the underlying equity may fluctuate depending on the respective markets in which the respective underlying equity issuer operates or, if the underlying equity is an ETF, the respective markets in which the assets held by such ETF trade. Market forces outside of our control could cause the price of the underlying equity to be below the Downside Threshold on the final Observation Date. The price of the underlying equity can rise or fall sharply due to factors specific to that underlying equity and the underlying equity issuer, such as equity or commodity price volatility, earnings, financial conditions, corporate, industry and regulatory developments, management changes and decisions, and other events, and by general market factors, such as general securities and commodity market volatility and levels, interest rates and economic and political conditions. The applicable terms supplement will provide a brief description of the underlying equity issuer and the underlying equity to which the securities we offer are linked. We urge you to review financial and other information filed periodically by the underlying equity issuer with the SEC.

The historical performance of the underlying equity should not be taken as an indication of its future performance.

The price of the underlying equity will determine the amount to be paid on the securities. The historical performance of the underlying equity does not give an indication of its future performance. As a result, it is impossible to predict whether the price of the underlying equity will rise or fall during the term of the securities. The price of the underlying equity will be influenced by complex and interrelated political, economic, financial and other factors. The value of the underlying equity may decrease such

that you may not receive any payment on your investment. There can be no assurance that the price of the underlying equity will not decrease so that at maturity you will not lose some or all of your investment.

For securities linked to a foreign underlying equity, an investment in the securities is subject to risks associated with non-U.S. securities markets.

The underlying equity, or shares held by an ETF to which the securities are linked, may have been issued by one or more non-U.S. companies. An investment in securities linked to the value of non-U.S. equity securities involves particular risks. Non-U.S. securities markets may be more volatile than U.S. securities markets, and market developments may affect non-U.S. securities markets differently from the U.S. securities markets. Direct or indirect government intervention to stabilize these non-U.S. securities markets, as well as cross shareholdings among non-U.S. companies, may affect trading prices and volumes in those markets. Also, there is generally less publicly available information in the U.S. about non-U.S. companies than about those U.S. companies that are subject to the reporting requirements of the SEC, and non-U.S. companies are subject to accounting, disclosure, auditing and financial reporting standards and requirements that differ from those applicable to U.S. reporting companies.

Prices of securities in non-U.S. countries are subject to political, economic, financial and social factors that may be unique to the particular country. These factors, which could negatively affect the non-U.S. securities markets, include the possibility of recent or future changes in the economic and fiscal policies of non-U.S. governments, the possible imposition of, or changes in, currency exchange laws or other non-U.S. laws or restrictions applicable to non-U.S. companies or investments in non-U.S. equity securities, the possibility of fluctuations in the rate of exchange between currencies, the possibility of outbreaks of hostility and political instability and the possibility of natural disaster or adverse public health developments in the region. Moreover, the economies of certain foreign countries may differ favorably or unfavorably from the U.S. economy in important respects, such as growth of gross national product, rate of inflation, trade surpluses or deficits, capital reinvestment, resources and self-sufficiency.

Fluctuations relating to exchange rates may affect the value of your investment.

Fluctuations in exchange rates may affect the value of your investment where: (1) the underlying equity is an ADS, which is quoted and traded in U.S. dollars, but represents the underlying common shares that are quoted and traded in a foreign currency and that may trade differently from the ADS, (2) the underlying equity is substituted or replaced by a security that is quoted and traded in a foreign currency, or (3) the underlying equity is an ETF that invests in securities, futures contracts or commodities that are quoted and traded in a foreign currency. Such substitution or replacement of the underlying equity by a security issued by a non-U.S. company may occur following certain corporate events affecting the underlying equity (as described under “General Terms of the Securities—Anti-dilution Adjustments—Reorganization Events”) or in the event of delisting or termination of the underlying equity that is an ADS (as described under “General Terms of the Securities—Delisting of ADSs or Termination of ADS Facility”).

If the underlying equity is an ETF that invests in securities, futures contracts or commodities that are traded on non-U.S. markets, the market price of such underlying assets generally will reflect the U.S. dollar value of those assets. Therefore, holders of securities based upon one or more ETFs that invest in non-U.S. markets will be exposed to currency exchange rate risk with respect to the currency in which such assets trade. An investor's net exposure will depend on the extent to which the relevant non-U.S. currency strengthens or weakens against the U.S. dollar and the relative weight of each non-U.S. asset in the relevant ETF's portfolio. If, taking into account such weighting, the dollar strengthens against the non-U.S. currency, the value of the non-U.S. securities, futures contracts or commodities in which an ETF invests will be adversely affected and the value of the securities may decrease.

In recent years, the exchange rates between the U.S. dollar and some other currencies have been highly volatile, and this volatility may continue in the future. Risks relating to exchange rate fluctuations generally depend on economic and political events over which we have no control. However, fluctuations in any particular exchange rate that have occurred in the past are not necessarily indicative of

fluctuations that may occur during the term of the securities. Changes in the exchange rate between the U.S. dollar and a foreign currency may affect the U.S. dollar equivalent of the price of any relevant security, futures contract or commodity on non-U.S. markets and, as a result, may affect the value of the securities. In addition, foreign exchange rates can either be floating or fixed by sovereign governments. Exchange rates of the currencies used by most economically developed nations are permitted to fluctuate in value relative to the U.S. dollar and to each other. However, from time to time governments and, in the case of countries using the euro, the European Central Bank, may use a variety of techniques, such as intervention by a central bank in foreign exchange, money markets, sovereign debt or other financial markets, the imposition of regulatory controls or taxes or changes in interest rates to influence the exchange rates of their currencies. Governments may also issue a new currency to replace an existing currency or alter the exchange rate or relative exchange characteristics by a devaluation or revaluation of a currency. These governmental actions could change or interfere with currency valuations and currency fluctuations that would otherwise occur in response to economic forces, as well as in response to the movement of currencies across borders. As a consequence, these government actions could adversely affect the value of the securities.

We will not make any adjustment or change in the terms of the securities in the event that applicable exchange rates should become fixed, or in the event of any devaluation or revaluation or imposition of exchange or other regulatory controls or taxes, or in the event of other developments affecting the U.S. dollar or any relevant foreign currency.

Your anti-dilution protection is limited.

The calculation agent will make adjustments to the Initial Underlying Price and the Downside Threshold for certain events affecting the shares of the underlying equity. See “General Terms of the Securities—Anti-dilution Adjustments.” The calculation agent is not required, however, to make such adjustments in response to all events that could affect the shares of the underlying equity. If an event occurs that does not require the calculation agent to make an adjustment, such as an offering of common shares for cash, the value of the securities may be materially and adversely affected. In addition, all determinations and calculations concerning any such adjustment will be made by the calculation agent, which will be binding on you absent manifest error. You should be aware that the calculation agent may make any such adjustment, determination or calculation in a manner that differs from, or that is in addition to, that described in this product prospectus supplement or the applicable terms supplement as necessary to achieve an equitable result. You should refer to “General Terms of the Securities—Anti-dilution Adjustments” for a description of the items that the calculation agent is responsible for determining.

In some circumstances, the payment you receive on the securities may be based on the securities issued by another issuer and not on the underlying equity.

Following certain corporate events relating to the underlying equity where the applicable issuer is not the surviving entity, your payment from Royal Bank of Canada at maturity or on any Call Settlement Date may be based on the common stock of a successor to the respective issuer in combination with any cash or any other assets distributed to holders of the underlying equity in such corporate event, which may include securities issued by a non-U.S. company and quoted and traded in a foreign currency. If the issuer of an underlying equity becomes subject to a Reorganization Event (as defined below), the consequent adjustments, may materially and adversely affect the value of the securities. We describe the specific corporate events that may lead to these adjustments and the procedures for selecting Distribution Property in the section of this product prospectus supplement called “General Terms of the Securities—Anti-dilution Adjustments—Reorganization Events.” The calculation agent will make any such adjustments in order to achieve an equitable result.

If the underlying equity is an ADS and the ADS is no longer listed or admitted to trading on a U.S. securities exchange registered under the Exchange Act nor included in the OTC Bulletin Board Service operated by FINRA, or if the ADS facility between the issuer of the foreign stock and the ADS depository is terminated for any reason, the amount you receive upon an automatic call or at maturity will be based on the common stock represented by the ADS. Such delisting of the ADS or termination of the ADS

facility and the consequent adjustments may materially and adversely affect the value of the securities. We describe such delisting of the ADS or termination of the ADS facility and the consequent adjustments in the section of this product prospectus supplement called “General Terms of Securities—Delisting of ADSs or Termination of ADS Facility.”

If an underlying equity or an ETF that is serving as the underlying equity is discontinued, delisted or trading of such underlying equity on its primary exchange is suspended, the determination as to the payments on the securities may be based on a security issued by another issuer or a share of another ETF (as applicable) and not the underlying equity. Such discontinuance, delisting or suspension of trading of the underlying equity and the consequent adjustments may materially and adversely affect the value of the securities. We describe such discontinuance, delisting or suspension of trading of the underlying equity and the consequent adjustments in the sections of this product prospectus supplement called “General Terms of the Securities—Anti-dilution Adjustments—Reorganization Events.”

Risks Relating to Underlying Equities that Are ADSs

The value of the underlying equity may not accurately track the value of the underlying common shares represented by such ADS.

If the underlying equity is an ADS, each share of the underlying equity will represent shares of the relevant company (an “underlying company”). The trading patterns of the ADSs will generally reflect the characteristics and valuations of the underlying common shares; however, the value of the ADSs may not completely track the value of those shares. Trading volume and pricing on the applicable non-U.S. exchange may, but will not necessarily, have similar characteristics as the ADSs. For example, certain factors may increase or decrease the public float of the ADSs and, as a result, the ADSs may have less liquidity or lower market value than the underlying common shares.

Adverse trading conditions in the applicable non-U.S. market may negatively affect the value of the underlying equity.

Holders of the underlying company’s ADSs may usually surrender the ADSs in order to receive and trade the underlying common shares. This provision permits investors in the ADSs to take advantage of price differentials between markets. However, this provision may also cause the market prices of the underlying equity to more closely correspond with the values of the common shares in the applicable non-U.S. markets. As a result, a market outside of the United States for the underlying common shares that is

Additional Risks Relating to Exchange Traded Fund Underlying Equities

Changes that affect an underlying index will affect the market value of the securities and the payments on the securities.

The policies of the applicable index sponsor concerning the calculation of an index underlying an ETF that is an underlying equity (an “underlying index”), additions, deletions or substitutions of the components of that underlying index and the manner in which changes affecting those components, such as stock dividends, reorganizations or mergers, may be reflected in the underlying index and, therefore, could affect the amounts payable on the securities at maturity, and the market value of the securities prior to maturity. The amounts payable on the securities and their market value could also be affected if the index sponsor changes these policies, for example, by changing the manner in which it calculates the underlying index, or if the index sponsor discontinues or suspends calculation or publication of the underlying index, in which case it may become difficult to determine the market value of the securities.

We have no affiliation with any index sponsor and will not be responsible for any actions taken by an index sponsor.

Unless otherwise specified in the relevant terms supplement, no index sponsor is an affiliate of ours or will be involved in any offerings of the securities in any way. Consequently, we have no control of the actions of any index sponsor, including any actions of the type that might impact the value of the securities. No index sponsor has any obligation of any sort with respect to the securities. Thus, no index sponsor has any 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 any issuance of the securities will be delivered to any index sponsor.

There are liquidity and management risks associated with an ETF.

Although shares of an ETF that is an underlying equity will be listed for trading on a securities exchange and a number of similar products have been traded on various exchanges for varying periods of time, there is no assurance that an active trading market will continue for the shares of the underlying equity or that there will be liquidity in that trading market.

An ETF is subject to management risk, which is the risk that the investment adviser's investment strategy, the implementation of which is subject to a number of constraints, may not produce the intended results.

We cannot control actions by the investment adviser which may adjust the ETF in a way that could adversely affect the payments on the securities and their market value, and the investment adviser has no obligation to consider your interests.

The policies of the applicable investment adviser concerning the calculation of the ETF's net asset value, additions, deletions or substitutions of securities or other investments held by the ETF and the manner in which changes affecting the underlying index are reflected in the ETF could affect the market price per share of the underlying equity and, therefore, the amounts payable on the securities and their market value. The amounts payable on the securities and their market value could also be affected if the investment adviser changes these policies, for example, by changing the manner in which it calculates the ETF's net asset value, or if the investment adviser discontinues or suspends calculation or publication of the ETF's net asset value, in which case it may become difficult to determine the value of your securities. If events such as these occur or if the closing price of the underlying equity is not available on any Observation Date, the calculation agent may determine the closing price per share of the underlying equity on such Observation Date in a manner the calculation agent considers appropriate, in its sole discretion.

The performance of the underlying equity and the performance of the underlying index may vary.

The performance of the underlying equity and that of its underlying index (or other underlying asset) generally will vary due to transaction costs, certain corporate actions and timing variances. If the underlying equity maintains a "representative sampling" strategy as to an underlying index, the performance of the underlying equity will differ to some degree from that of the underlying index.

In addition, because the shares of the underlying equity are traded on a securities exchange and are subject to market supply and investor demand, the market value of one share of the underlying equity may differ from its net asset value per share; shares of the underlying equity may trade at, above, or below their net asset value per share.

For the foregoing reasons, the performance of the underlying equity may not match the performance of the underlying index (or other underlying asset) over the same period. Because of this variance, the return on the securities, to the extent dependent on the return of the underlying asset may not be the same as an investment directly in the securities or other investments included in the underlying asset or the same as a debt security with a payment at maturity linked to the performance of the underlying asset.

Time zone differences between the cities where the underlying asset and the underlying equity trade may create discrepancies in trading levels.

As a result of the time zone difference, if applicable, between the cities where the securities or commodities comprising the underlying asset trade and where the shares of the underlying equity trade, there may be discrepancies between the values of the underlying asset and the market value of the securities. In addition, there may be periods when the foreign securities or commodities markets are

closed for trading (for example, during holidays in a country other than the United States) that may result in the values of the underlying asset remaining unchanged for multiple trading days in the city where the shares of the underlying equity trade. Conversely, there may be periods in which the applicable foreign securities or commodities markets are open, but the securities market on which the underlying equity trades is closed.

Risks Relating to Conflicts of Interest

You must rely on your own evaluation of the merits of an investment linked to the underlying equity.

In the ordinary course of their business, our affiliates may have expressed views on expected movement in any underlying equity, or the equity securities included in any ETF, and may do so in the future. These views or reports may be communicated to our clients and clients of our affiliates. However, these views are subject to change from time to time. Moreover, other professionals who transact business in markets relating to any underlying equity, may at any time have significantly different views from those of our affiliates. For these reasons, you are encouraged to derive information concerning the applicable underlying equity from multiple sources, and you should not rely solely on views expressed by our affiliates.

We or our affiliates may have adverse economic interests to the holders of the securities.

RBCCM and other affiliates of ours may trade the shares of the underlying equity and the equity securities that may be held by an underlying equity issuer that is an ETF, and other financial instruments related to the underlying equity on a regular basis, for their accounts and for other accounts under their management. RBCCM and these affiliates may also issue or underwrite or assist unaffiliated entities in the issuance or underwriting of other securities or financial instruments linked to the underlying equity or any equity securities held by an underlying equity issuer that is an ETF. To the extent that we or one of our affiliates serves as issuer, agent or underwriter for such securities or financial instruments, our or their interests with respect to such products may be adverse to those of the holders of the securities. Any of these trading activities could potentially affect the performance of the underlying equity and, accordingly, could affect the value of the securities, and the amounts, if any, payable on the securities.

We or our affiliates may currently or from time to time engage in business with the issuer of the underlying equity or issuers of securities held by an underlying equity issuer that is an ETF, including extending loans to, or making equity investments in, or providing advisory services to them, including merger and acquisition advisory services. In the course of this business, we or our affiliates may acquire non-public information about these companies, and we will not disclose any such information to you. We do not make any representation or warranty to any purchaser of a security with respect to any matters whatsoever relating to our business with the issuer of any underlying equity or future price movements of any underlying equity or any equity securities that may be held by an ETF.

Additionally, we or one of our affiliates may serve as issuer, agent or underwriter for additional issuances of securities with returns linked or related to changes in the price of the shares of the underlying equity or the price of the equity securities or other assets held by an underlying equity issuer that is an ETF. By introducing competing products into the marketplace in this manner, we or one or more of our affiliates could adversely affect the value of the securities.

We may hedge our obligations under the securities through certain affiliates, who would expect to make a profit on such hedge. We or our affiliates may adjust these hedges by, among other things, purchasing or selling those assets at any time, including around the time of each Observation Date, which could have an impact on the return of your securities. Because hedging our obligations entails risk and may be influenced by market forces beyond our or our affiliates' control, such hedging may result in a profit that is more or less than expected, or it may result in a loss.

We or one of our affiliates may currently or from time to time engage in trading activities related to the currencies in which the non-U.S. equity securities or other assets held by an underlying equity issuer

that is an ETF are denominated. These trading activities could potentially affect the exchange rates with respect to such currencies and, if currency exchange rate calculations are involved in the calculation of the net asset value of that underlying equity, could affect the closing prices of that underlying equity and, accordingly, if the securities are linked to that underlying equity, the value of the securities.

In the course of our or our affiliates' currency trading activities, we or our affiliates may acquire material nonpublic information with respect to currency exchange rates, and we will not disclose any such information to you. In addition, one or more of our affiliates may produce and/or publish research reports, or otherwise express views, with respect to expected movements in currency exchange rates. We do not make any representation or warranty to any purchaser of the securities with respect to any matters whatsoever relating to future currency exchange rate movements and, if the securities are linked to an underlying equity that is an ETF which invests in non-U.S. securities or other assets, any prospective purchaser of the securities should undertake an independent investigation of the currencies in which the assets held by that underlying equity are denominated and their related exchange rates as, in its judgment, is appropriate to make an informed decision with respect to an investment in the securities.

The calculation agent will have significant discretion with respect to the securities, which may be exercised in a manner that is adverse to your interests.

Our wholly-owned subsidiary, RBCCM, will act as the calculation agent. The calculation agent will determine, among other things, the closing price of one share of the underlying equity on each Observation Date; anti-dilution adjustments, if any; whether the securities are subject to an automatic call; the Final Underlying Price; the underlying return; and the amount, if any, that we will pay to you on the securities. The calculation agent will also be responsible for determining whether a market disruption event has occurred, and may also make certain adjustments to an underlying equity issuer that is an ETF, for example, if that ETF is delisted, or if material changes are made to its underlying index or asset. The calculation agent may exercise its discretion in a manner which reduces your return on the securities. Since these determinations by the calculation agent will affect the payments on the securities, the calculation agent may have a conflict of interest if it needs to make a determination of this kind. Since these determinations by the calculation agent will affect the payments on the securities, the calculation agent may have a conflict of interest if it needs to make a determination of this kind.

Market disruptions may adversely affect your return.

The calculation agent may, in its sole discretion, determine that the markets have been affected in a manner that prevents it from properly determining the closing price of one share of the underlying equity on any Observation Date or calculating the underlying return and the amount, if any, that we are required to pay you at maturity. These events may include disruptions or suspensions of trading in the markets as a whole. If the calculation agent, in its sole discretion, determines that any of these events prevents us or any of our affiliates from properly hedging our obligations under the securities, it is possible that one or more of the Observation Dates and the maturity date will be postponed, and your return will be adversely affected. See "General Terms of the Securities—Market Disruption Events."

Risks Relating to Tax and Related Matters

Non-U.S. investors may be subject to certain additional risks.

This product prospectus supplement contains a general description of certain U.S. tax considerations relating to the securities. In the event you are a non-U.S. investor, you should consult your tax advisors as to the consequences, under the tax laws of the country where you are resident for tax purposes, of acquiring, holding and disposing of the securities and receiving the payments that might be due under the securities.

For a discussion of the Canadian federal income tax consequences of investing in the securities, please see the section entitled "Tax Consequences—Canadian Taxation" in the accompanying prospectus. If you are not a Non-resident Holder (as defined in the section titled "Tax Consequences—Canadian Taxation" in the accompanying prospectus) or if you acquire the securities in the secondary

market, you should consult your tax advisors as to the consequences of acquiring, holding and disposing of the securities and receiving the payments that may be due under the securities.

Significant aspects of the income tax treatment of an investment in the securities may be 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 or the Canada Revenue Agency regarding the tax treatment of an investment in the securities, and the Internal Revenue Service, the Canada Revenue Agency or a court may not agree with the tax treatment described in this product prospectus supplement.

If the underlying equity is an ETF, while the matter is not entirely clear, unless otherwise specified in the applicable terms supplement, there exists a substantial risk that an investment in a security is, in whole or in part, a “constructive ownership transaction” to which Section 1260 of the Internal Revenue Code applies. If Section 1260 of the Internal Revenue Code applies, all or a portion of any long-term capital gain recognized by a U.S. Holder in respect of a security will be recharacterized as ordinary income and certain interest charges may apply. See the section entitled “Supplemental Discussion of U.S. Federal Income Tax Consequences—Supplemental U.S. Tax Considerations—Potential Application of Section 1260 of the Internal Revenue Code.”

The Internal Revenue Service 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 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. 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.

Please read carefully the section entitled “Supplemental Discussion of U.S. Federal Income Tax Consequences” in this product prospectus supplement, the section “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.

Certain additional considerations for insurance companies and employee benefit plans may apply to your investment in the securities.

Any insurance company or fiduciary of a pension plan or other employee benefit plan that is subject to the prohibited transaction rules of the Employee Retirement Income Security Act of 1974, as amended, which we call “ERISA,” or the Internal Revenue Code of 1986, as amended, including an IRA or a Keogh plan (or a governmental plan to which similar prohibitions apply), and that is considering purchasing the securities with the assets of the insurance company or the assets of such a plan, should consult with its counsel regarding whether the purchase or holding of the securities could become a “prohibited transaction” under ERISA, the Internal Revenue Code or any substantially similar prohibition in light of the representations a purchaser or holder in any of the above categories is deemed to make by purchasing and holding the securities. For additional information, please see the discussion under “Benefit Plan Investor Considerations” in the prospectus.

USE OF PROCEEDS AND HEDGING

Unless otherwise specified in the relevant terms supplement, the net proceeds we receive from the sale of the securities will be used for general corporate purposes and, in part, by us or by one or more of our affiliates in connection with hedging our obligations under the securities. The original issue price of the securities includes each agent's commissions (as shown on the cover page of the relevant terms supplement) paid with respect to the securities and the estimated cost of hedging our obligations under the securities.

Unless otherwise specified in the relevant terms supplement, the original issue price of the securities will include the reimbursement of certain issuance costs and the estimated cost of hedging our obligations under the securities. Because hedging our obligations entails risk and may be influenced by market forces beyond our or our affiliates' control, the actual cost of such hedging may result in a profit that is more or less than expected, or could result in a loss. See also "Use of Proceeds" in the accompanying prospectus.

In anticipation of the sale of the securities, we expect to enter into hedging transactions with one or more of our affiliates, or with one or more of the Agents or their affiliates, involving purchases of shares of the underlying equity, the equity securities or other assets held by the underlying equity or included in the applicable ETF and/or listed and/or over-the-counter derivative instruments linked to any of those securities prior to or on the Trade Date. From time to time, including around the time of each Observation Date and the maturity date, we, the Agents, and our respective affiliates may enter into additional hedging transactions or unwind those that we or they have entered into. In this regard, we, the Agents, and our respective affiliates may:

- acquire or dispose of investments relating to the underlying equity;
- acquire or dispose of long or short positions in listed or over-the-counter derivative instruments based on the underlying equity; or
- any combination of the above two.

We, RBCCM, and our respective affiliates may acquire a long or short position in securities similar to the securities from time to time and may, in our or their sole discretion, hold or resell those similar securities.

We, RBCCM, and our respective affiliates may close out our or their hedges on or before any Observation Date. That step may involve sales or purchases of the underlying equity or components of the ETF or over-the-counter derivative instruments linked to the underlying equity.

GENERAL TERMS OF THE SECURITIES

The following description of the terms of the securities supplements the description of the general terms of the debt securities set forth under the headings “Description of the Notes We May Offer” in the accompanying prospectus supplement and “Description of Debt Securities” in the accompanying prospectus. A separate terms supplement will describe the terms that apply specifically to the securities, including any changes to the terms specified below. Capitalized terms used but not defined in this product prospectus supplement have the meanings assigned in the accompanying prospectus supplement, prospectus and the relevant terms supplement.

General

The Trigger Autocallable Securities are senior unsecured obligations of Royal Bank of Canada that are linked to the common equity securities of an issuer, including an ADS, or shares of an ETF, specified in the relevant terms supplement. The underlying equity will not consist of shares issued by a Real Estate Investment Trust (“REIT”), Passive Foreign Investment Company (“PFIC”) or interests in a partnership or trust. The securities will be issued by Royal Bank of Canada under an indenture dated October 23, 2003, as it may be amended or supplemented from time to time, between us and The Bank of New York Mellon, N.A. (as successor to JPMorgan Chase Bank, N.A.), as trustee.

Unlike ordinary debt securities, we will not pay periodic interest on the securities and will not necessarily repay any of the principal amount of the securities at maturity.

The securities are not insured or guaranteed by the Canada Deposit Insurance Corporation, the U.S. Federal Deposit Insurance Corporation, or any other governmental agency of Canada or the United States.

The securities are our unsecured and unsubordinated obligations and will rank *pari passu* with all of our other unsecured and unsubordinated obligations.

The securities will be issued in denominations of \$10 and integral multiples thereof, unless otherwise specified in the relevant terms supplement. We refer to a security in the minimum denomination of the securities as “one security.” The securities will be represented by one or more permanent global notes registered in the name of The Depository Trust Company, or DTC, or its nominee, as described under “Ownership and Book-Entry Issuance” and “—Considerations Relating to DTC” in the prospectus.

The specific terms of the securities will be described in the relevant terms supplement accompanying this product prospectus supplement. The terms described in that document supplement those described in this product prospectus supplement, the accompanying prospectus and prospectus supplement. If the terms described in the relevant terms supplement are inconsistent with those described in this product prospectus supplement, the accompanying prospectus or prospectus supplement, the terms described in the relevant terms supplement will control.

Payment Upon Automatic Call

The securities will be called automatically if the closing price of one share of the underlying equity is at or above the Initial Underlying Price on any Observation Date. If the securities are called, we will pay you on the applicable Call Settlement Date, the Call Price for the applicable Observation Date, as set forth in the relevant terms supplement. The Call Price applicable to each Observation Date equals the principal amount per security plus the applicable call return, which is based on the amount of time the securities have been outstanding between the settlement date of the securities and the applicable Call Settlement Date. The call return is based on a per annum rate specified in the applicable terms supplement and increases the longer the securities are outstanding. The call return rate and the Call

Price for each Observation Date will be set forth in the relevant terms supplement. Following an automatic call, no further amounts will be owed to you under the securities.

Payment at Maturity

The maturity date for the securities will be set forth in the relevant terms supplement and is subject to adjustment if such day is not a business day or if the final Observation Date is postponed as described below.

Unless otherwise specified in the relevant terms supplement, if the securities are not called, we will pay you at maturity a cash payment per \$10.00 principal amount of the securities based on the Final Underlying Price, calculated as described below:

- If the Final Underlying Price is above or equal to the Downside Threshold on the final Observation Date, we will pay you a cash payment equal to the principal amount of your securities.
- If the Final Underlying Price is below the Downside Threshold on the final Observation Date, we will pay you for each \$10 in principal amount of the securities you own a cash payment that is less than your principal amount, if anything, resulting in a loss that is proportionate to the decline of the underlying equity from the Trade Date to the final Observation Date, for a return equal to: $\$10.00 \times (1 + \text{underlying return})$.

The repayment of your principal amount is not guaranteed. If the securities are not called, you may lose some or all of your investment. Specifically, if the securities are not called and the Final Underlying Price is below the Downside Threshold on the final Observation Date, you will lose 1% (or a fraction thereof) of your principal for each 1% (or a fraction thereof) decrease in the price per share of the underlying equity below the Initial Underlying Price. Accordingly, if the Final Underlying Price is below the Downside Threshold on the final Observation Date, you may lose up to 100% of your principal amount.

Investing in the securities involves significant risks. The securities differ from ordinary debt securities in that they do not guarantee the repayment of your principal amount. If the securities are not called on any Observation Date, you may lose some or all of your investment. Specifically, if the securities are not called and the underlying equity closes below the applicable Downside Threshold on the final Observation Date, you will lose 1% (or a fraction thereof) of your principal amount for each 1% (or a fraction thereof) that the underlying equity return is less than zero. Any payment on the securities, including any repayment of principal, is subject to our creditworthiness. If we were to default on our payment obligations, you may not receive any amounts owed to you under the securities and you could lose your entire investment.

Contingent Absolute Return Autocallable Securities

If so specified in the relevant terms supplement, your securities will have the additional terms described in this subsection.

If such securities have not been called prior to maturity and the closing price of one share of the applicable underlying equity closes at or above the applicable Downside Threshold on the Final Valuation Date, we will repay at maturity the principal amount plus a return equal to the absolute value of the percentage decline in the price of the applicable underlying equity from the Trade Date to the Final Valuation Date (the "Contingent Absolute Return"). For example, if the Downside Threshold is 90% of the Initial Underlying Price, and the Final Underlying Price is 5% less than the Initial Underlying Price, the Contingent Absolute Return will be 5% of the principal amount. (That is, in such a case, the Contingent Absolute Return will equal the product of -1 and -5%). If the securities have not been called and the Final Underlying Price is less than the Downside Threshold, the Contingent Absolute Return will not apply and you will lose some or all of your principal amount in an amount proportionate with the decline of the underlying equity.

We will describe the terms of any securities that are Contingent Absolute Return Autocallable Securities in more detail in the relevant terms supplement.

Terms Applicable to the Securities Generally

The “Call Return Rate” is the per annum percentage as specified in the relevant terms supplement.

The “Call Price” is the cash payment per \$10.00 principal amount which we will pay you if the securities are called on the applicable Call Settlement Date. The Call Price applicable to each Observation Date will be specified in the relevant terms supplement and will be calculated based on the Call Return Rate and the amount of time that the securities have been outstanding between the settlement date of the securities and the applicable Call Settlement Date.

The “Trade Date” is the day on which we price the securities for initial sale to the public and will be specified in the relevant terms supplement.

The “Settlement Date” is the day on which we issue the securities for initial delivery to investors and will be specified in the relevant terms supplement.

Unless otherwise set forth in the applicable terms supplement, the closing price for any underlying equity on any trading day will equal the closing sale price or last reported sale price, regular way, for the underlying equity, on a per-share or other unit basis:

- on the principal national securities exchange on which that underlying equity is listed for trading on that day, or
- if that underlying equity is not quoted on any national securities exchange on that day, on any other market system or quotation system that is the primary market for the trading of that underlying equity.

If that underlying equity is not listed or traded as described above, then the closing price for that underlying equity on any day will be the average, as determined by the calculation agent, of the bid prices for the underlying equity obtained from as many dealers in that underlying equity selected by the calculation agent as will make those bid prices available to the calculation agent. The number of dealers need not exceed three and may include the calculation agent or any of its or our affiliates.

Unless otherwise specified in the relevant terms supplement, a “trading day” is, a day, as determined by the calculation agent, on which trading is generally conducted on the New York Stock Exchange (the “NYSE”), the NYSE American, The Nasdaq Stock Market, the Chicago Mercantile Exchange Inc., the Chicago Board Options Exchange, Incorporated and in the over-the-counter market for equity securities in the United States or, with respect to a security issued by a foreign issuer that is not listed or admitted to trading on a U.S. securities exchange or market, a day, as determined by the calculation agent, on which trading is generally conducted on the primary non-U.S. securities exchange or market on which such security is listed or admitted to trading.

Unless otherwise specified in the relevant terms supplement, the “underlying return,” as calculated by the calculation agent, is the percentage change in the closing price of one share of the underlying equity calculated by comparing the Final Underlying Price to the Initial Underlying Price. The relevant terms supplement will specify the manner in which the Initial Underlying Price and the Final Underlying Price are determined. The underlying return, unless otherwise specified in the relevant terms supplement, is calculated as follows:

$$\text{Underlying Return} = \frac{\text{Final Underlying Price} - \text{Initial Underlying Price}}{\text{Initial Underlying Price}}$$

Unless otherwise specified in the relevant terms supplement, the “Initial Underlying Price” means the closing price of one share of the underlying equity on the Trade Date or such other date as specified

in the relevant terms supplement. The Initial Underlying Price will be subject to adjustment as described under “—Anti-dilution Adjustments.”

Unless otherwise specified in the relevant terms supplement, “Final Underlying Price” means the closing price of one share of the underlying equity on the final Observation Date.

The “Downside Threshold” is a specified price of the underlying equity that is below the Initial Underlying Price that will be specified in the applicable terms supplement.

The Observation Date(s) will be specified in the relevant terms supplement, and each such date is subject to adjustment as described below. If an Observation Date is not a trading day or if there is a market disruption event on such day, the applicable Observation Date will be postponed to the immediately succeeding trading day during which no market disruption event shall have occurred or be continuing. In no event, however, will any Observation Date be postponed more than ten business days following the date originally scheduled to be that Observation Date. If the tenth business day following the date originally scheduled to be the applicable Observation Date is not a trading day, or if there is a market disruption event on that date, the calculation agent will determine the closing price for that Observation Date on such date in accordance with the calculation agent’s good faith estimate of the closing price that would have prevailed but for such suspension or limitation or non-trading day.

The maturity date will be specified in the relevant terms supplement and is subject to adjustment as described below. If not previously called, the securities will mature on the maturity date. If the scheduled maturity date (as specified in the relevant terms supplement) is not a business day, then the maturity date will be the next succeeding business day following the scheduled maturity date. If, due to a market disruption event or otherwise, the final Observation Date is postponed so that it falls less than three business days prior to the scheduled maturity date, the maturity date will be the third business day following the final Observation Date, as postponed, unless otherwise specified in the relevant terms supplement. We describe market disruption events under “—Market Disruption Events” below.

Unless otherwise specified in the relevant terms supplement, if the securities are called on any Observation Date (other than the final Observation Date), the Call Settlement Date will be three business days following such Observation Date, unless that day is not a business day, in which case the Call Settlement Date will be the next following business day. If the securities are called on the final Observation Date, the Call Settlement Date will be the maturity date. As described above, the calculation agent may postpone any Observation Date, and therefore a Call Settlement Date (by the same number of business days), if a market disruption event occurs or is continuing on a day that would otherwise be an Observation Date. We describe market disruption events under “—Market Disruption Events” below.

We will irrevocably deposit with DTC no later than the opening of business on the applicable date funds sufficient to make payments of the amount payable, if any, with respect to the securities on such date. We will give DTC irrevocable instructions and authority to pay such amount to the holders of the securities entitled thereto.

A “business day” is, unless otherwise specified in the relevant terms supplement, any day other than a day on which banking institutions in The City of New York are authorized or required by law, regulation or executive order to close or a day on which transactions in dollars are not conducted.

Subject to the foregoing and to applicable law (including, without limitation, U.S. federal laws), we or our affiliates may, at any time and from time to time, purchase outstanding securities by tender, in the open market or by private agreement.

Calculation Agent

RBC Capital Markets, LLC will act as the calculation agent. The calculation agent will determine, among other things, the closing price of one share of the underlying equity on each Observation Date; the anti-dilution adjustments, if any; whether the securities are called; the Final Underlying Price, the underlying return, and the amount, if any, that we will pay you at maturity. In addition, the calculation agent will determine whether there has been a market disruption event as to the underlying equity. All

determinations made by the calculation agent will be at the sole discretion of the calculation agent and will, in the absence of manifest error, be conclusive for all purposes and binding on you and on us. We may appoint a different calculation agent from time to time after the date of the relevant terms supplement without your consent and without notifying you.

The calculation agent will provide written notice to the trustee at its New York office, on which notice the trustee may conclusively rely, of the amount to be paid on any Call Settlement Date and at maturity on or prior to 11:00 a.m., New York City time, on the business day preceding the applicable Call Settlement Date or maturity date.

All calculations with respect to the closing price of one share of the underlying equity, the Final Underlying Price, or the underlying return will be rounded to the nearest one ten-thousandth, with five one-hundred-thousandth rounded upward (e.g., .87645 would be rounded to .8765); all dollar amounts related to determination of the payment per \$10 in principal amount of the securities on any Observation Date or at maturity, if any, will be rounded to the nearest one ten-thousandth, with five one hundred-thousandths rounded upward (e.g., .76545 would be rounded up to .7655); and all dollar amounts paid, if any, on the aggregate principal amount of securities per holder will be rounded to the nearest cent, with one-half cent rounded upward.

Market Disruption Events

Certain events may prevent the calculation agent from calculating the closing price of one share of the underlying equity on any Observation Date, and consequently, determining whether the securities are subject to an automatic call or determining the underlying return, or calculating the amount, if any, that we will pay to you at maturity. These events may include disruptions or suspensions of trading on the markets as a whole. We refer to each of these events individually as a “market disruption event.”

Any of the following will be a market disruption event:

- a suspension, absence or limitation of trading in (i) that security in its primary market, as determined by the calculation agent, or (ii) futures or options contracts relating to that security in the primary market for those contracts, as determined by the calculation agent;
- any event that disrupts or impairs, as determined by the calculation agent, the ability of market participants to (i) effect transactions in, or obtain market values for, the security in its primary market, or (ii) effect transactions in, or obtain market values for, futures or options contracts relating to the security in its primary market;
- the closure on any day of the primary market for that security on a scheduled trading day prior to the scheduled weekday closing time of that market (without regard to after hours or any other trading outside of the regular trading session hours) unless such earlier closing time is announced by the primary market at least one hour prior to the earlier of (i) the actual closing time for the regular trading session on such primary market on such scheduled trading day for such primary market and (ii) the submission deadline for orders to be entered into the relevant exchange system for execution at the close of trading on such scheduled trading day for such primary market;
- any scheduled trading day on which (i) the primary market for that security or (ii) the exchanges or quotation systems, if any, on which futures or options contracts on that security are traded, fails to open for trading during its regular trading session; or
- any other event, if the calculation agent determines in its sole discretion that the event materially interferes with our ability or the ability of any of our affiliates to unwind all or a portion of a hedge with respect to the securities that we or our affiliates have effected or may effect as described below under “Use of Proceeds and Hedging” in this product prospectus supplement.

Anti-dilution Adjustments

The Initial Underlying Price and the Downside Threshold will be specified in the relevant terms supplement. The calculation agent will adjust the Initial Underlying Price and the Downside Threshold if any of the dilution events described below occur with respect to the underlying equity after the applicable Trade Date.

The calculation agent will adjust the Initial Underlying Price and the Downside Threshold as described below, but only if an event below under this section occurs with respect to the underlying equity and only if the relevant event occurs during the period described under the applicable subsection. The Initial Underlying Price and the Downside Threshold will be subject to the adjustments described below, independently and separately, with respect to the dilution events that affect the underlying equity.

If more than one anti-dilution event requiring adjustment occurs with respect to the Initial Underlying Price and the Downside Threshold, the calculation agent will adjust that Initial Underlying Price and the Downside Threshold for each event, sequentially, in the order in which the events occur, and on a cumulative basis. Therefore, having adjusted the Initial Underlying Price and the Downside Threshold for the first event, the calculation agent will adjust the Initial Underlying Price and the Downside Threshold for the second event, applying the required adjustment to the Initial Underlying Price and the Downside Threshold as already adjusted for the first event, and so on for each event. If an event requiring an anti-dilution adjustment occurs, the calculation agent will make the adjustment with a view to offsetting, to the extent practical, any change in the economic position of the holder and us, relative to your securities, that results solely from that event. The calculation agent may, in its sole discretion, modify the anti-dilution adjustments as necessary to ensure an equitable result.

Stock Splits and Stock Dividends

A stock split is an increase in the number of a corporation's outstanding shares of stock without any change in its stockholders' equity. When a corporation pays a stock dividend, it issues additional shares of its stock to all holders of its outstanding stock in proportion to the shares they own. Each outstanding share will be worth less as a result of a stock split or stock dividend.

If the underlying equity is subject to a stock split or receives a stock dividend, then the calculation agent will adjust the Initial Underlying Price and the Downside Threshold by dividing the prior Initial Underlying Price—that is, the Initial Underlying Price and the Downside Threshold before the stock split or stock dividend—by the number equal to: (1) the number of shares of the underlying equity outstanding immediately after the stock split or stock dividend becomes effective; divided by (2) the number of shares of the underlying equity outstanding immediately before the stock split or stock dividend becomes effective. The Initial Underlying Price and the Downside Threshold will not be adjusted, however, unless:

- in the case of a stock split, the first day on which the underlying equity trades without the right to receive the stock split occurs after the Trade Date and on or before the final Observation Date; or
- in the case of a stock dividend, the ex-dividend date occurs after the Trade Date and on or before the final Observation Date.

The ex-dividend date for any dividend or other distribution with respect to the underlying equity is the first day on which the underlying equity trades without the right to receive that dividend or other distribution.

Reverse Stock Splits

A reverse stock split is a decrease in the number of a corporation's outstanding shares of stock without any change in its stockholders' equity. Each outstanding share will be worth more as a result of a reverse stock split.

If the underlying equity is subject to a reverse stock split, then the calculation agent will adjust the Initial Underlying Price and the Downside Threshold by multiplying the prior Initial Underlying Price and the Downside Threshold by a number equal to: (1) the number of shares of the underlying equity

outstanding immediately before the reverse stock split becomes effective; divided by (2) the number of shares of the underlying equity outstanding immediately after the reverse stock split becomes effective. The Initial Underlying Price and the Downside Threshold will not be adjusted, however, unless the reverse stock split becomes effective after the Trade Date and on or before the final Observation Date.

Extraordinary Dividends

Any distribution or dividend on the underlying equity determined by the calculation agent to be a distribution or dividend that is not in the ordinary course of the issuer's historical dividend practices will be deemed to be an extraordinary dividend. The calculation agent will determine if the dividend is an extraordinary dividend and, if so, the amount of the extraordinary dividend. Each outstanding share will be worth less as a result of an extraordinary dividend.

If any extraordinary dividend occurs with respect to the underlying equity, the calculation agent will adjust the Initial Underlying Price and the Downside Threshold to equal the product of: (1) the prior Initial Underlying Price and the Downside Threshold, times (2) a fraction, the numerator of which is the amount by which the closing price of one share of the underlying equity on the business day before the ex-dividend date exceeds the extraordinary dividend amount and the denominator of which is the closing price of one share of the underlying equity on the business day before the ex-dividend date. The Initial Underlying Price and the Downside Threshold will not be adjusted, however, unless the ex-dividend date occurs after the Trade Date and on or before the final Observation Date.

The extraordinary dividend amount with respect to an extraordinary dividend for the underlying equity equals:

- for an extraordinary dividend that is paid in lieu of a regular quarterly dividend, the amount of the extraordinary dividend per share of the underlying equity minus the amount per share of the immediately preceding dividend, if any, that was not an extraordinary dividend for the underlying equity; or
- for an extraordinary dividend that is not paid in lieu of a regular quarterly dividend, the amount per share of the extraordinary dividend.

To the extent an extraordinary dividend is not paid in cash, the value of the non-cash component will be determined by the calculation agent. A distribution on the underlying equity that is a stock dividend, an issuance of transferable rights or warrants or a spin-off event and also an extraordinary dividend will result in an adjustment to the Initial Underlying Price and the Downside Threshold only as described under “—Stock Splits and Stock Dividends” above, “—Transferable Rights and Warrants” below or “—Reorganization Events” below, as the case may be, and not as described here.

Transferable Rights and Warrants

If the issuer of the underlying equity issues transferable rights or warrants to all holders of the underlying equity to subscribe for or purchase the underlying equity at an exercise price per share that is less than the closing price of one share of the underlying equity on the business day before the ex-dividend date for the issuance, then the applicable Initial Underlying Price and the Downside Threshold will be adjusted by multiplying the prior Initial Underlying Price and the Downside Threshold by the following fraction:

- the numerator will be the number of shares of the underlying equity outstanding at the close of business on the day before that ex-dividend date plus the number of additional shares of the underlying equity that the aggregate offering price of the total number of shares of the underlying equity so offered for subscription or purchase pursuant to the transferable rights or warrants could purchase at the closing price on the business day before the ex-dividend date, with that number of additional shares being determined by multiplying the total number of shares so offered by the exercise price of those transferable rights or warrants and dividing the resulting product by the closing price on the business day before that ex-dividend date.

- the denominator will be the number of shares of the underlying equity outstanding at the close of business on the day before that ex-dividend date plus the number of additional shares of the underlying equity offered for subscription or purchase under those transferable rights or warrants.

The Initial Underlying Price and the Downside Threshold will not be adjusted, however, unless the ex-dividend date described above occurs after the Trade Date and on or before the final Observation Date.

Reorganization Events

If the issuer of the underlying equity undergoes a reorganization event in which property other than the underlying equity—e.g., cash and securities of another issuer—is distributed in respect of the underlying equity, then, for purposes of calculating the price of the underlying equity, the calculation agent will determine the closing price of one share of the underlying equity, or the Final Underlying Price, on any Observation Date to equal the value of the cash, securities and other property distributed in respect of one share of the underlying equity.

If the calculation agent determines that, by valuing such cash, securities and other property, a commercially reasonable result is not achieved, then the calculation agent will, in its sole discretion, substitute another stock for that underlying equity.

Each of the following is a reorganization event with respect to the underlying equity:

- the underlying equity is reclassified or changed;
- the issuer of the underlying equity has been subject to a merger, consolidation or other combination and either is not the surviving entity or is the surviving entity but all the outstanding stock is exchanged for or converted into other property;
- a statutory share exchange involving the outstanding stock and the securities of another entity occurs, other than as part of an event described in the two bullet points above;
- the issuer of the underlying equity sells or otherwise transfers its property and assets as an entirety or substantially as an entirety to another entity;
- the issuer of the underlying equity effects a spin-off—that is, issues to all holders of the underlying equity securities of another issuer, other than as part of an event described in the four bullet points above;
- the issuer of the underlying equity is liquidated, dissolved or wound up or is subject to a proceeding under any applicable bankruptcy, insolvency or other similar law; or
- another entity completes a tender or exchange offer for all of the outstanding stock of the issuer of the underlying equity.

Valuation of Distribution Property

If a reorganization event occurs with respect to the underlying equity, and the calculation agent does not substitute another stock for the underlying equity as described in “—Substitution” below, then the calculation agent will determine the applicable closing price of one share of the underlying equity on any Observation Date so as to equal the value of the property—whether it be cash, securities or other property—distributed in the reorganization event in respect of one share of the underlying equity, as the underlying equity existed before the date of the reorganization. We refer to the property distributed in a reorganization event as distribution property, a term we describe in more detail below. The calculation agent will not make any determination for a reorganization event, however, unless the event becomes effective (or, if the event is a spin-off, unless the ex-dividend date for the spin-off occurs) after the Trade Date and on or before the final Observation Date.

For the purpose of making a determination required by a reorganization event, the calculation agent will determine the value of each type of distribution property, in its sole discretion. For any distribution property consisting of a security, the calculation agent will use the closing price for the security on the relevant date. The calculation agent may value other types of property in any manner it determines, in its sole discretion, to be appropriate. If a holder of the underlying equity may elect to receive different types or combinations of types of distribution property in the reorganization event, the distribution property will consist of the types and amounts of each type distributed to a holder that makes no election, as determined by the calculation agent in its sole discretion.

If a reorganization event occurs and the calculation agent adjusts the closing price of one share of the underlying equity on any Observation Date, to equal the value of the distribution property distributed in the event, as described above, the calculation agent will make further determinations for later events that affect the distribution property considered in determining the closing price. The calculation agent will do so to the same extent that it would make determinations if the underlying equity were outstanding and were affected by the same kinds of events.

For example, if the issuer of the underlying equity merges into another company and each share of the underlying equity is converted into the right to receive two common shares of the surviving company and a specified amount of cash, then on any Observation Date, the closing price of one share of the underlying equity, will be determined to equal the value of the two common shares of the surviving company plus the specified amount of cash. The calculation agent will further determine the common share component of such closing price to reflect any later stock split or other event, including any later reorganization event, that affects the common shares of the surviving company, to the extent described in “—Anti-dilution Adjustments” or as described above in this “—Reorganization Events” section as if the common shares were the underlying equity. In that event, the cash component will not be redetermined but will continue to be a component of the closing price.

When we refer to distribution property, we mean the cash, securities and other property distributed in a reorganization event in respect of the underlying equity or in respect of whatever securities whose value determines the closing price of one share of the underlying equity on any Observation Date if any adjustment resulting from a reorganization event has been made in respect of a prior event. In the case of a spin-off, the distribution property also includes the underlying equity in respect of which the distribution is made.

If a reorganization event occurs, the distribution property distributed in the event will be substituted for the underlying equity as described above. Consequently, in this product prospectus supplement, when we refer to the underlying equity, we mean any distribution property that is distributed in a reorganization event in respect of the underlying equity. Similarly, when we refer to the issuer of the underlying equity, we mean any successor entity in a reorganization event.

Substitution

If the calculation agent determines that a commercially reasonable result is not achieved by valuing distribution property with respect to the underlying equity upon becoming subject to a reorganization event, then the calculation agent will, in its sole discretion, substitute another stock for the underlying equity. In such case, the adjustments described above in “—Valuation of Distribution Property” will not apply.

If the calculation agent so determines, it may choose, in its sole discretion, the stock of a different company listed on a national securities exchange or quotation system as a substitute for the underlying equity. For all purposes, the substitute stock will be deemed to be a stock for purposes hereof.

The calculation agent will determine, in its sole discretion, the Initial Underlying Price and the Downside Threshold and/or the manner of valuation of the substitute stock. The calculation agent will have the right to make such adjustments to the calculation of the individual stock performance as it determines in its sole discretion are necessary to preserve as nearly as possible our and your relative economic position prior to the reorganization event.

Adjustments Relating to ADSs

The underlying equity may consist of ADSs. As a result, for purposes of any adjustments relating to ADSs, the calculation agent will consider the effect of any of the relevant events on the holders of the underlying equity. For example, if a holder of the underlying equity receives an extraordinary dividend, the provisions described in this section would apply to the underlying equity. On the other hand, if a spin-off occurs, and the underlying equity represents both the spun-off security as well as the existing underlying equity, the calculation agent may determine not to effect the anti-dilution adjustments set forth in this section. More particularly, the calculation agent may not make an adjustment (1) if holders of the underlying equity are not eligible to participate in any of the events that would otherwise require anti-dilution adjustments as set forth in this section or (2) to the extent that the calculation agent determines that the underlying company or the depository for the ADSs has adjusted the number of common shares of the underlying company represented by each share of underlying equity so that the market price of the underlying equity would not be affected by the corporate event in question.

If the underlying company or the depository for the ADSs, in the absence of any of the events described in this section, elects to adjust the number of common shares of the underlying company represented by each share of underlying equity, then the calculation agent may make the appropriate anti-dilution adjustments to reflect such change. The depository for the ADSs may also make adjustments in respect of the ADSs for share distributions, rights distributions, cash distributions and distributions other than shares, rights, and cash. Upon any such adjustment by the depository, the calculation agent may adjust such terms and conditions of the securities as the calculation agent determines appropriate to account for that event.

Other Events and Adjustments

The calculation agent may make such adjustments to the terms of the securities with respect to any of the events described above, as it deems in its discretion is necessary to ensure an equitable result.

Regardless of any of the events discussed above, your payment upon an automatic call or at maturity will be made by Royal Bank of Canada as issuer of the securities, subject to its ability to pay its obligations when due.

Delisting of ADSs or Termination of ADS Facility

If an ADS serving as the applicable underlying equity is no longer listed or admitted to trading on a U.S. securities exchange registered under the Exchange Act nor included in the OTC Bulletin Board Service operated by FINRA, or if the ADS facility between the issuer of the underlying common shares and the ADS depository is terminated for any reason, then, on and after the date such ADS is no longer so listed or admitted to trading or the date of such termination, as applicable (the "Change Date"), the underlying ADS stock will be deemed to be the applicable underlying equity. The Initial Underlying Price and the Downside Threshold will be adjusted by dividing the applicable price by, the number of shares of the underlying ADS stock represented by a single ADS. On and after the Change Date, for all purposes, including the determination of the closing price, or the Final Underlying Price, of the underlying ADS stock and whether the Final Underlying Price of the underlying ADS stock is below the Downside Threshold, the closing price of the underlying ADS stock will be expressed in U.S. dollars, converted using the applicable exchange rate as described below, unless otherwise specified in the applicable terms supplement.

On any date of determination, the applicable exchange rate will be the WM/Reuters Closing spot rate of the local currency of the underlying ADS stock relative to the U.S. dollar as published by Thompson Reuters PLC ("Reuters") on the relevant page for such rate, or Bloomberg page WMCO, in each case at approximately 4:15 P.M., London time, for such date of determination. However, if such rate is not displayed on the relevant Reuters page or Bloomberg page WMCO on any date of determination, the applicable exchange rate on such day will equal the average (mean) of the bid quotations in New

York City received by the calculation agent at approximately 3:00 P.M., New York City time, on such date of determination, from as many recognized foreign exchange dealers (provided that each such dealer commits to execute a contract at its applicable bid quotation), but not exceeding three, as will make such bid quotations available to the calculation agent for the purchase of the applicable foreign currency for U.S. dollars for settlement on the applicable Observation Date in the aggregate amount of the applicable foreign currency payable to holders of the securities. If the calculation agent is unable to obtain at least one such bid quotation, the calculation agent will determine the exchange rate in its sole discretion.

Discretion of the Calculation Agent

The calculation agent will have the ability to modify the anti-dilution provisions set forth in this section if, in its sole discretion, such action is needed to ensure an equitable result, based upon the terms of the applicable securities.

Payment of 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 security 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 a 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;
- (ii) who is subject to such taxes by reason of the 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);
- (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 senior indenture; or

- (v) who could lawfully avoid (but has not so avoided) such withholding or deduction by complying, or requiring that any third party comply with, any statutory requirements necessary to establish qualification for an exemption from withholding or by making, or requiring that any third party 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 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 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 entitled “Supplemental Discussion of Canadian Tax Consequences” in this product prospectus supplement and the section entitled “Canadian Taxation” in the accompanying prospectus.

Events of Default

Under the heading “Description of Debt Securities—Events of Default” in the accompanying prospectus is a description of events of default relating to debt securities including the securities.

Payment upon an Event of Default

Unless otherwise specified in the relevant terms supplement, in case an event of default with respect to the securities shall have occurred and be continuing, the amount declared due and payable per \$10 in principal amount of the securities upon any acceleration of the securities will be determined by the calculation agent and will be an amount in cash equal to the amount payable at maturity per \$10 in principal amount of the securities as described under the caption “—Payment at Maturity,” calculated as if the date of acceleration were the final Observation Date.

If the maturity of the securities is accelerated because of an event of default as described above, we will, or will cause the calculation agent to, provide written notice to the trustee at its New York office, on which notice the trustee may conclusively rely, and to DTC of the cash amount due with respect to the securities as promptly as possible and in no event later than two business days after the date of acceleration.

Modification

Under the heading “Description of Debt Securities—Modification and Waiver of the Debt Securities” in the accompanying prospectus is a description of when the consent of each affected holder of debt securities is required to modify the senior indenture.

Defeasance

The provisions described in the accompanying prospectus under the heading “Description of Debt Securities—Defeasance” are not applicable to the securities, unless otherwise specified in the relevant terms supplement.

Listing

The securities will not be listed on any securities exchange, unless otherwise specified in the relevant terms supplement.

Book-Entry Only Issuance—The Depository Trust Company

DTC will act as securities depository for the securities. The securities will be issued only as fully-registered securities registered in the name of Cede & Co. (DTC’s nominee). One or more fully-registered global note certificates, representing the total aggregate principal amount of the securities, will be issued and will be deposited with DTC. See the descriptions contained in the accompanying prospectus under the headings “Ownership and Book-Entry Issuance” and “—Considerations Relating to DTC.”

Registrar, Transfer Agent and Paying Agent

Payment of amounts due at maturity or upon automatic call on the securities will be payable and the transfer of the securities will be registrable at the principal corporate trust office of The Bank of New York Mellon, N.A. in The City of New York.

The Bank of New York Mellon, N.A. or one of its affiliates will act as registrar and transfer agent for the securities. The Bank of New York Mellon, N.A. will also act as paying agent and may designate additional paying agents.

Registration of transfers of the securities will be effected without charge by or on behalf of The Bank of New York Mellon, N.A., but upon payment (with the giving of such indemnity as The Bank of New York Mellon, N.A. may require) in respect of any tax or other governmental charges that may be imposed in relation to it.

Governing Law

The securities will be governed by and interpreted in accordance with the laws of the State of New York.

HISTORICAL UNDERLYING EQUITY LEVEL INFORMATION

We may provide historical level information on the underlying equity in the relevant terms supplement. You should not take any of those historical levels as an indication of the future performance. We cannot give you any assurance that the level of the underlying equity will not decrease, thus causing you to receive an amount that is less than the principal amount of your securities at maturity.

CANADIAN FEDERAL INCOME TAX CONSEQUENCES

For a discussion of the material Canadian federal income tax consequences relating to an investment in the securities, please see the section entitled “Tax Consequences—Canadian Taxation” in the accompanying prospectus, which you should carefully review prior to investing in the securities.

SUPPLEMENTAL DISCUSSION OF U.S. FEDERAL INCOME TAX CONSEQUENCES

The following 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 product prospectus supplement and is subject to any change in law that may take effect after such date.

Supplemental U.S. Tax Considerations

The following disclosure—including the opinion of Ashurst LLP—has been prepared without regard to any particular security that you may purchase in the future and, therefore, is provided solely as a matter of general information. You should not rely upon the following disclosure (including the opinion of Ashurst LLP), or the disclosure under “Tax Consequences—United States Taxation” in the prospectus or “Certain Income Tax Consequences—United States Taxation” in the prospectus supplement, with regard to an investment in any particular security because this disclosure (including the opinion of Ashurst LLP) does not take into account the terms of any particular security or the tax consequences of investing in or holding any particular security unless the terms supplement applicable to your securities expressly indicates that you may rely on the following disclosure and expressly states that you may rely on the opinion of Ashurst LLP. Any security that you purchase may have terms that would result in a tax treatment that is significantly different from the treatment described below. For example, the discussion below assumes that the underlying equities are not issued by REITs, PFICs or interests in a partnership or trust and that an investor in the securities will be subject to a significant risk that it will lose a significant amount of its investment in the securities. If the underlying equities are issued by REITs, PFICs or interests in a partnership or trust, or if an investor in the securities is not subject to a significant risk that it will lose a significant amount of its investment in the securities, the tax treatment of that security may differ substantially from that described in the discussion below. There may be other features or terms of your securities that will cause this tax section to be inapplicable to your securities. Further, this discussion does not address the tax consequences applicable to any holders under Section 451(b) of the U.S. Internal Revenue Code of 1986, as amended (the “Code”).

Consequently, any tax disclosure relevant to any security you may purchase will be set forth only in the terms supplement relating to your security, and, unless the terms supplement indicates otherwise, you should not rely on the tax disclosure below or in the prospectus supplement or prospectus in deciding whether to invest in any security. Moreover, in all cases, you should consult with your own tax advisor concerning the consequences of investing in and holding any particular security you propose to purchase.

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.

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 the issuer of an underlying equity (and, in the case of an ETF, any issuer of the shares that it holds) 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 the issuer of the underlying equity (and, in the case of an ETF,

any issuer of the shares that it holds) were so treated, certain adverse U.S. federal income tax consequences could possibly apply. You should refer to any available information filed with the SEC and other authorities by the issuer of the underlying equity (and, in the case of an ETF, any issuer of the shares that it holds) and consult your tax advisor regarding the possible consequences to you in this regard, if any.

In the opinion of our counsel, Ashurst LLP, it would generally be reasonable to treat a security with terms described in this product prospectus supplement as a callable pre-paid derivative contract linked to the underlying equity 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, subject to the discussion below concerning the potential application of the “constructive ownership” rules under Section 1260 of the Code, a holder should generally recognize capital gain or loss upon the call, sale 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. The holding period for securities of a U.S. holder who acquires the securities upon issuance will generally begin on the date after the issue date (i.e., the settlement date) of the securities. If the securities are held by the same U.S. holder until maturity, that holder’s holding period will generally include the maturity date.

It is possible that the Internal Revenue Service could assert that a U.S. holder’s holding period in respect of the securities should end on the date on which the amount the holder is entitled to receive upon the maturity of the securities is determined, even though the holder will not receive any amounts from the issuer in respect of the securities prior to the maturity of the security. In such case, the timing and character of income you recognize in respect of the securities may be affected.

If the securities are settled by physical delivery of a number of shares of the Underlying at maturity, although no assurances can be provided in this regard, a U.S. holder may generally expect not to recognize gain or loss upon maturity. However, a U.S. holder would generally be required to recognize gain or loss, if any, with respect to any cash received in lieu of fractional shares, equal to the difference between the cash received and the pro rata portion of the tax basis allocable to those fractional shares. Any such gain or loss would be treated as capital gain or loss, subject to the discussion below concerning the potential application of the “constructive ownership” rules under Section 1260 of the Code. A U.S. holder’s tax basis in the shares of the Underlying delivered would generally equal its tax basis in the securities, other than any amount allocable to a fractional share. A U.S. holder’s holding period for the shares of the Underlying delivered would begin on the day after the shares of the Underlying are received.

Potential Application of Section 1260 of the Internal Revenue Code. If the underlying equity is the type of financial asset described under Section 1260 of the Code (including, among others, any equity interest in pass-thru entities such as ETFs, regulated investment companies, real estate investment trusts, partnerships, and passive foreign investment companies, each a “Section 1260 Financial Asset”), while the matter is not entirely clear, unless otherwise specified in the applicable terms supplement, there exists a substantial risk that an investment in a security is, in whole or in part, a “constructive ownership transaction” to which Section 1260 of the Code applies. If Section 1260 of the Code applies, all or a portion of any long-term capital gain recognized by a U.S. holder in respect of a security will be recharacterized as ordinary income (the “Excess Gain”). In addition, an interest charge will also apply to any deemed underpayment of tax in respect of any Excess Gain to the extent such gain would have resulted in gross income inclusion for the U.S. holder in taxable years prior to the taxable year of the call, sale, or maturity (assuming such income accrued at a constant rate equal to the applicable federal rate as of the date of call, sale, or maturity).

If an investment in a security is treated as a constructive ownership transaction, it is not clear to what extent any long-term capital gain of a U.S. holder in respect of the security will be recharacterized as

ordinary income. It is possible, for example, that the amount of the Excess Gain (if any) that would be recharacterized as ordinary income in respect of the security will equal the excess of (i) any long-term capital gain recognized by the U.S. holder in respect of the security and attributable to Section 1260 Financial Assets, over (ii) the “net underlying long-term capital gain” (as defined in Section 1260 of the Code) such U.S. holder would have had if such U.S. holder had acquired an amount of the corresponding Section 1260 Financial Assets at fair market value on the original issue date for an amount equal to the portion of the issue price of the security attributable to the corresponding Section 1260 Financial Assets and sold such amount of Section 1260 Financial Assets upon the date of call, sale, or maturity of the security at fair market value. Alternatively, the Internal Revenue Service may contend that the Excess Gain should not be limited to amounts attributable to a Section 1260 Financial Asset, but should instead apply to all of the components of the Underlying. To the extent any gain is treated as long-term capital gain after application of the recharacterization rules of Section 1260 of the Code, such gain would be subject to U.S. federal income tax at the rates that would have been applicable to the net underlying long-term capital gain. However, unless otherwise established by clear and convincing evidence, the net underlying long-term capital gain is treated as zero. U.S. holders should consult their tax advisors regarding the potential application of Section 1260 of the Code to an investment in the security.

Alternative Treatments. Alternative tax treatments of the securities are also possible and the Internal Revenue Service might assert that a treatment other than that described above is more appropriate. For example, it is possible to treat the securities, and the Internal Revenue Service might assert that the securities should be treated, as a single debt instrument. If 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 currently over the term of the securities even though that holder will not receive any payments from us prior to maturity. In addition, any gain a holder might recognize upon the call, sale or maturity of the securities would generally be ordinary income and any loss recognized by a holder at such time would 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. If the securities are treated as a single debt instrument that has a term of no more than one year, the securities would be treated as a single short-term debt instrument, which would also result in tax consequences that are different from those described above.

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

The Internal Revenue Service has released a notice that may affect the taxation of holders of the securities. According to the notice, the Internal Revenue Service and the U.S. Treasury Department are actively considering whether the holder of an instrument similar to the securities should be required to accrue ordinary income on a current basis regardless of any current payments made on the securities. 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 Internal Revenue Service 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 special “constructive ownership rules” of Section 1260 of the Code, which generally 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. You should consult your tax advisor as to the tax consequences of possible alternative characterizations of your securities for U.S. federal income tax purposes and proposals to change the taxation of certain derivative instruments.

Unless stated otherwise in the applicable terms supplement, we intend to treat the securities for U.S. federal income tax purposes in accordance with the treatment described in this product prospectus supplement unless and until such time as the U.S. Treasury Department and Internal Revenue Service 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 maturity 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 Internal Revenue Service 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 Internal Revenue Service.

Reports will be made to the Internal Revenue Service 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 security 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 discussed 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 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 trade or business in the U.S., 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) a "dividend equivalent" payment is treated as a dividend from sources within the United States and 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, directly or indirectly reference 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, 2023. Accordingly, if the securities are not delta-one instruments and are issued before January 1, 2023, 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 or the securities, 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 or the securities should consult their tax advisors as to 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 Internal Revenue Service 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 gain, 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 the legislation. In addition, the securities may constitute a "financial account" for these purposes and thus, 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 such 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 of a type which can produce U.S. source interest or dividends. 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.

SUPPLEMENTAL PLAN OF DISTRIBUTION

Under the terms and subject to the conditions contained in the Distribution Agreement entered into between Royal Bank of Canada and RBC Capital Markets, LLC, as agent (an “Agent” or “RBCCM”), UBS Financial Services Inc. (an “Agent” or “UBS”) and certain other agents that may be party to the Distribution Agreement, as amended or supplemented, from time to time (each an “Agent” and collectively with RBCCM and UBS, the “Agents”), each Agent participating in an offering of securities, acting as principal for its own account, or as placement agent for certain fee-based advisory accounts, will agree to purchase, and we will agree to sell, the principal amount of securities set forth on the cover page of the relevant terms supplement. Each such Agent proposes initially to offer the securities directly to the public at the public offering price set forth on the cover page of the relevant terms supplement. UBS may allow a concession to other dealers, or we may pay other fees, in the amount set forth on the cover page of the relevant terms supplement. After the initial offering of the securities, the Agents may vary the offering price and other selling terms from time to time.

RBCCM or another Agent may act as principal or agent in connection with offers and sales of the securities in the secondary market. Secondary market offers and sales will be made at prices related to market prices at the time of such offer or sale; accordingly, the Agents or a dealer may change the public offering price, concession and discount after the offering has been completed.

No action has been or will be taken by us, RBCCM or any dealer that would permit a public offering of the securities or possession or distribution of this product prospectus supplement or the accompanying prospectus supplement, prospectus or terms supplement, other than in the United States, where action for that purpose is required. No offers, sales or deliveries of the securities, or distribution of this product prospectus supplement or the accompanying prospectus supplement, prospectus or terms supplement or any other offering material relating to the securities, may be made in or from any jurisdiction except in circumstances which will result in compliance with any applicable laws and regulations and will not impose any obligations on us, the Agents or any dealer.

Each Agent has represented and agreed, and each dealer through which we may offer the securities has represented and agreed, that it (i) will comply with all applicable laws and regulations in force in each non-U.S. jurisdiction in which it purchases, offers, sells or delivers the securities or possesses or distributes this product prospectus supplement and the accompanying prospectus supplement, prospectus and terms supplement and (ii) will obtain any consent, approval or permission required by it for the purchase, offer or sale by it of the securities under the laws and regulations in force in each non-U.S. jurisdiction to which it is subject or in which it makes purchases, offers or sales of the securities. We shall not have responsibility for any Agent's or any dealer's compliance with the applicable laws and regulations or obtaining any required consent, approval or permission.

Each of RBCCM, UBS 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 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) (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 RBCCM, UBS 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.