

ROYAL BANK OF CANADA  
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Product Prospectus Supplement no. UBS-EQUITY-1  
To the Prospectus dated September 7, 2018 and  
the Prospectus Supplement dated September 7, 2018  
Senior Global Medium-Term Notes, Series H  
Royal Bank of Canada

Capped GEARS Linked to One or More Equity Securities or Exchange Traded Funds  
Capped Buffer GEARS Linked to One or More Equity Securities or Exchange Traded Funds  
Capped Airbag GEARS Linked to One or More Equity Securities or Exchange Traded Funds  
Capped Trigger GEARS Linked to One or More Equity Securities or Exchange Traded Funds  
Trigger In-Step Securities Linked to One or More Equity Securities or Exchange Traded Funds  
Capped Trigger In-Step Securities Linked to One or More Equity Securities or Exchange Traded Funds

General

Royal Bank of Canada may offer from time to time Capped GEARS, Capped Buffer GEARS, Capped Airbag GEARS, Capped Trigger GEARS, Trigger In-Step Securities and Capped Trigger In-Step Securities (collectively, the “securities”), each linked to one or more equity securities or exchange traded funds (an “Underlying”), including American depositary shares (“ADSs”).

This product prospectus supplement describes terms that will apply generally to the securities, and supplements the terms described in the accompanying prospectus supplement and prospectus. A separate term sheet, free writing prospectus or pricing supplement, as the case may be, will describe terms that apply specifically to the securities, including any changes to the terms specified below. We refer to such term sheets, free writing prospectuses and pricing supplements generally as “terms supplements.” If the terms described in the relevant terms supplement are inconsistent with those described herein, the accompanying prospectus supplement or prospectus, the terms described in the relevant terms supplement will control.

The securities are senior unsecured debt obligations of Royal Bank of Canada and any payment on the securities is subject to our credit risk.

For important information about U.S. federal tax consequences, see the section below “Supplemental Discussion of U.S. Federal Income Tax Consequences.”

The minimum denominations of the securities will be specified in the relevant term sheet.

Investing in the securities is not equivalent to investing in the Underlying or any of its components.

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

The securities are not subject to conversion into our common shares under subsection 39.2(2.3) of the Canada Deposit Insurance Corporation Act.

Your investment in the securities involves a number of risks. The securities differ from ordinary debt securities in that Royal Bank of Canada is not necessarily obligated to repay your full principal amount and the securities may have downside market risk similar to the Underlying. You could lose some or all of your investment in the securities, subject to any Buffer. See “Risk Factors” beginning on page PS-4.

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.

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We may use this product prospectus supplement in the initial sale of a security. In addition, RBC Capital Markets, LLC, or 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

January 18, 2019

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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 RBCCM. 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, Inc., 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.

The Underlying may consist of one or more of the following:

- a single equity security, including American depository shares, of a specific company (the “Underlying Company”) with a class of equity securities registered under the Securities Exchange Act of 1934, as amended (the “Exchange Act”);
- shares of an exchange traded fund;
- any combination of the above.

The Underlying may consist of a weighted group, or “Basket,” of the foregoing. We refer to each component included in any Basket as a “Basket Equity” and collectively the “Basket Equities.” If the Underlying to which your securities are linked is a Basket, the Basket Equities will be set forth in the applicable terms supplement.

Payment at Maturity (for Capped GEARs): Unless otherwise specified in the relevant terms supplement, for Capped GEARs, the amount you will receive at maturity is based on the Underlying Return, the Upside Gearing and the Maximum Gain, as described below.

If the Underlying Return is positive or zero, you will receive at maturity a cash payment per \$10 in principal amount of the securities equal to:

$\$10 + (\$10 \times \text{the lesser of: (i) (Upside Gearing} \times \text{Underlying Return) and (ii) Maximum Gain})$

If the Underlying Return is negative, your investment will be fully exposed to any decline in the Underlying, and you will lose 1% of the principal amount of your securities for every 1% that the Final Underlying Price declines from the Initial Underlying Price. Under these circumstances, you will receive at maturity a cash payment per \$10 in principal amount of the securities equal to:

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

For Capped GEARs, you will lose some or all of your investment at maturity if the Final Underlying Price declines from the Initial Underlying Price.

Payment at Maturity (for Capped Buffer GEARs): Unless otherwise specified in the relevant terms supplement, for Capped Buffer GEARs, the amount you will receive at maturity is based on the Underlying Return, the Upside Gearing, the Maximum Gain, the Downside Threshold and the Buffer, as described below.

If the Underlying Return is positive, you will receive at maturity a cash payment per \$10 in principal amount of the securities equal to:

$\$10 + (\$10 \times \text{the lesser of: (i) (Upside Gearing} \times \text{Underlying Return) and (ii) Maximum Gain})$ .

If the Underlying Return is zero or negative, but the Final Underlying Price is greater than or equal to the Downside Threshold, you will receive at maturity a cash payment of \$10 per \$10 in principal amount of the securities.

If the Underlying Return is negative and the Final Underlying Price is less than the Downside Threshold, your investment will be fully exposed to any decline in the Underlying beyond the Buffer. For every 1% decline of the Underlying beyond the Buffer, you will lose an amount equal to 1% of the principal amount of your securities. As a result, your downside market exposure is buffered against a decline in the price of the Underlying up to the Buffer. Under these circumstances, you will receive at maturity a cash payment per \$10 in principal amount of the securities equal to:

$\$10 + [\$10 \times (\text{Underlying Return} + \text{Buffer})]$

For Capped Buffer GEARs, you will lose some or a substantial portion of your investment at maturity if the Final Underlying Price declines from the Initial Underlying Price by more than the Buffer.

Payment at  
Maturity  
(for Capped  
Airbag  
GEARS):

Unless otherwise specified in the relevant terms supplement, for Capped Airbag GEARS, the amount you will receive at maturity is based on the Underlying Return, the Upside Gearing, the Maximum Gain, the Downside Threshold, the Threshold Percentage and the Downside Gearing, as described below.

If the Underlying Return is positive, you will receive at maturity a cash payment per \$10 in principal amount of the securities equal to:

$\$10 + (\$10 \times \text{the lesser of: (i) (Upside Gearing} \times \text{Underlying Return)}; \text{ and (ii) Maximum Gain})$

If the Underlying Return is zero or negative, but the Final Underlying Price is greater than or equal to the Downside Threshold, you will receive at maturity a cash payment of \$10 per \$10 in principal amount of the securities. As a result, your downside market exposure is contingent upon whether the Final Underlying Price is less than the Downside Threshold.

$\$10 + [\$10 \times (\text{Underlying Return} + \text{Threshold Percentage}) \times \text{Downside Gearing}]$

For Capped Airbag GEARS, you will lose some or all of your investment at maturity if the price of the Final Underlying Price of the Underlying is less than the Downside Threshold.

Payment at  
Maturity  
(for Capped  
Trigger  
GEARS):

Unless otherwise specified in the relevant terms supplement, for Capped Trigger GEARS, the amount you will receive at maturity is based on the Underlying Return, the Upside Gearing, the Maximum Gain and the Downside Threshold, as described below.

If the Underlying Return is positive, you will receive at maturity a cash payment per \$10 in principal amount of the securities equal to:

$\$10 + (\$10 \times \text{the lesser of: (i) (Upside Gearing} \times \text{Underlying Return)} \text{ and (ii) Maximum Gain})$

If the Underlying Return is zero or negative, but the Final Underlying Price is greater than or equal to the Downside Threshold, you will receive at maturity a cash payment of \$10 per \$10 in principal amount of the securities. As a result, your downside market exposure is contingent upon whether the Final Underlying Price is less than the Downside Threshold.

If the Underlying Return is negative and the Final Underlying Price is less than the Downside Threshold, your investment will be fully exposed to any decline in the Underlying. In this case, you will lose 1% of the principal amount of your securities for every 1% that the value of the Underlying declines below the Initial Underlying Price. Under these circumstances, you will receive at maturity a cash payment per \$10 in principal amount of the securities equal to:

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

For Capped Trigger GEARS, you will lose some or all of your investment at maturity if the Final Underlying Price is less than the Downside Threshold.

Payment at  
Maturity  
(for Trigger  
In-  
Step  
Securities):

Unless otherwise specified in the relevant terms supplement, for Trigger In-Step Securities, the amount you will receive at maturity is based on the Underlying Return, the Step Return and the Downside Threshold, as described below.

If the Final Underlying Price is greater than or equal to the Downside Threshold, you will receive at maturity a cash payment per \$10 in principal amount of the securities equal to:

$\$10 + (\$10 \times \text{the greater of: (i) Step Return and (ii) Underlying Return})$

If the Final Underlying Price is less than the Downside Threshold, your investment will be fully exposed to any decline in the Underlying. In this case, you will lose 1% of the principal amount of your securities for every 1% that the value of the Underlying declines below the Initial Underlying Price. As a result, your downside market exposure is contingent upon whether the Final Underlying Price is less than the Downside Threshold. Under these circumstances, you will receive at maturity a cash payment per \$10 in principal amount of the securities equal to:

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

For Trigger In-Step Securities, you will lose some or all of your investment at maturity if the Final Underlying Price is less than the Downside Threshold.

Payment at  
Maturity  
(for Capped  
Trigger In-  
Step  
Securities):

Unless otherwise specified in the relevant terms supplement, for Capped Trigger In-Step Securities, the amount you will receive at maturity is based on the Underlying Return, the Step Return, the Maximum Gain and the Downside Threshold, as described below.

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If the Final Underlying Price is greater than or equal to the Downside Threshold, you will receive at maturity a cash payment per \$10 in principal amount of the securities equal to: \$10 + (\$10 x the greater of: (i) Step Return and (ii) Underlying Return), subject to the Maximum Gain. If the Final Underlying Price is less than the Downside Threshold, your investment will be fully exposed to any decline in the Underlying. In this case, you will lose 1% of the principal amount of your securities for every 1% that the value of the Underlying declines below the Initial Underlying Price. As a result, your downside market exposure is contingent upon whether the Final Underlying Price is less than the Downside Threshold. Under these circumstances, you will receive at maturity a cash payment per \$10 in principal amount of the securities equal to:

\$10 + (\$10 x Underlying Return)

For Capped Trigger In-Step Securities, you will lose some or all of your investment at maturity if the Final Underlying Price is less than the Downside Threshold.

Unless otherwise specified in the relevant terms supplement:

Underlying  
Return:

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

Maximum  
Gain:

If applicable, a fixed percentage as specified in the relevant terms supplement.

Upside  
Gearing:

If applicable, a fixed number as specified in the relevant terms supplement.

Step Return:  
Buffer:

If applicable, a fixed percentage as specified in the relevant terms supplement.

If applicable, a fixed percentage as specified in the relevant terms supplement.

Downside  
Threshold:

If applicable, a fixed price as specified in the relevant terms supplement.

Threshold  
Percentage:

If applicable, a fixed percentage as specified in the relevant terms supplement.

Downside  
Gearing:

If applicable, a fixed number as specified in the relevant terms supplement.

Initial  
Underlying  
Price:

The Closing Price on the Trade Date, or such other date as specified in the relevant terms supplement, or in the case of a Basket, 100. The Initial Price may be subject to adjustment. See “General Terms of the Securities—Anti-dilution Adjustments.”

Final  
Underlying  
Price:

The Closing Price on the Final Valuation Date. If the Underlying is a Basket, the applicable terms supplement will specify how the Final Underlying Price will be determined.

Final  
Valuation  
Date:

Unless otherwise set forth in the applicable terms supplement, the Final Underlying Price will be calculated on a single date, which we refer to as the Final Valuation Date. The Final Valuation 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.”

Issue Price:

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

Trade Date:  
Settlement  
Date:

As specified in the relevant terms supplement.

As specified in the relevant terms supplement.

Maturity  
Date:

As specified in the relevant terms supplement. 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. 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 Securities Generally

The securities do not pay interest or guarantee the return of your investment. A decrease in the value of the Underlying 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 portion 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.

For Capped GEARS, you will lose some or all of your investment at maturity if the Final Underlying Price is less than the Initial Underlying Price, resulting in a loss proportionate to the negative Underlying Return.

For Capped Buffer GEARS, your downside market exposure is buffered against a decline in the Final Underlying Price up to the Buffer; however, you will lose some or a substantial portion of your investment at maturity if the Final Underlying Price is less than the Initial Underlying Price by more than the Buffer, resulting in a loss equal to the negative Underlying Return in excess of the Buffer.

For Capped Airbag GEARS, you will lose some or all of your investment at maturity if the Final Underlying Price is less than the Downside Threshold. In such a case, you will incur a leveraged loss of principal for each 1% that the Final Underlying Price is less than the Threshold Percentage.

For Capped Trigger GEARS, Trigger In-Step Securities and Capped Trigger In-Step Securities, you will lose some or all of your investment at maturity if the Final Underlying Price is less than the Downside Threshold. In such a case, you will lose 1% of the principal amount of your securities for each 1% that the Final Underlying Price is less than the Initial Underlying Price.

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 at maturity, 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 Royal Bank of Canada were to default on its payment obligations, you may not receive any amounts owed to you under the securities and you could lose your entire investment.

If applicable, the appreciation potential of the securities will be limited to the Maximum Gain.

If the securities are subject to a Maximum Gain, the appreciation potential of the securities will be limited to the return represented by that amount. Any applicable Maximum Gain will be a percentage that we will determine on the Trade Date and that will be set forth in the relevant terms supplement. Accordingly, if the relevant terms supplement specifies a Maximum Gain, the appreciation potential of the securities will be limited to the return represented by that amount, even if the Underlying Return multiplied by the Upside Gearing would otherwise result in a higher return.



The benefit of any Buffer or Downside Threshold is only available if the securities are held to maturity. Investors should be willing to hold their securities to maturity. If investors are able to sell their securities prior to maturity in the secondary market, they may have to sell them at a loss relative to their initial investment even if the Final Underlying Price has not declined by more than the Buffer, or to a price that is less than the Downside Threshold.

Any applicable Upside Gearing only applies at maturity.

Investors should be willing to hold their securities to maturity. If investors are able to sell their securities prior to maturity in the secondary market, the price they receive will likely not reflect the full economic value of the Upside Gearing or the securities themselves, and the return they realize may be less than the Underlying Return even if such return is positive and does not exceed any applicable Maximum Gain. Investors can receive the full benefit of the applicable Upside Gearing only if they hold the securities to maturity.

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. Even if your return is positive, your return may be less than the return you would earn if you bought a conventional senior interest-bearing debt security of Royal Bank of Canada with the same maturity date or if you invested directly in the securities included in the Underlying. Your investment may not reflect the full opportunity cost to you when you take into account factors that affect the time value of money.

Your return on the securities will not reflect dividends on the Underlying.

The return on the securities will not reflect the return you would realize if you actually owned the Underlying or the Basket Equities and received the dividends paid on those equity securities. The Final Underlying Price of the Underlying and the determination of the amount to be paid at maturity will not take into consideration the value of those dividends.

Owning the securities is not the same as owning the securities that make up the Underlying.

The return on your securities may not reflect the return you would realize if you actually owned the Underlying. For instance, the Underlying may appreciate substantially during the term of the securities, and you may not fully participate in that appreciation, because your positive return on the securities, if any, is limited to the Maximum Gain. 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

- the return on a direct investment in the Underlying would depend primarily upon the relative appreciation or depreciation of the Underlying during the term of the securities, and not on whether the closing price on the Final Valuation Date of the Underlying is equal to or greater than the Initial Underlying Price;
- in the case of a direct investment in the Underlying, 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, 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 is likely to have tax consequences that are different from an investment in the securities.

Secondary trading 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 Final Underlying Price may be less than the value of the Underlying at other times during the term of the securities.

Because the Final Underlying Price is calculated based on the value of the Underlying on the Final Valuation Date, the value of the Underlying at the maturity date or at other times during the term of the securities, including dates near the Final Valuation Date, could be higher than the Final Underlying Price. This difference could be particularly large if there is a significant increase in the value of the Underlying after the Final Valuation Date, or if there is a significant decrease in the value of the Underlying around the time of the Final Valuation Date, or if there is significant volatility in the value of the Underlying during the term of the securities (especially on dates near the Final Valuation Date).

For example, if the value of the Underlying increases or remains relatively constant during the initial term of the securities and then decreases below the Initial Underlying Price on the Final Valuation Date, then the Final Underlying Price may be significantly less than if it were calculated on a date earlier than the Final Valuation Date.

Under these circumstances, you may receive a lower payment at maturity than you would have received if you had invested directly in the Underlying.

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 Underlying has appreciated since the Trade 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.

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 value of the Underlying 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 value of the Underlying. The value of the securities will be affected by a number of other factors that may either offset or magnify each other, including:

- the value of the Underlying;
- the expected volatility of the value of the Underlying;
- the time to maturity of the securities;
- the dividend rate on the Underlying;
- interest and yield rates in the market generally;
- economic, financial, political, regulatory or judicial events that affect the applicable Underlying or stock markets generally and which may affect the value of the Underlying on the Final Valuation Date;

the occurrence of certain events relating to the Underlying or any Basket Equity that may or may not require an adjustment to the terms of the securities; 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 value of the Underlying at that time is at, below or not sufficiently above the Initial Underlying Price. You cannot predict the future performance of the Underlying based on its historical performance. The value of the Underlying may decrease such that you may not receive any return of your investment, subject to any Buffer. For Capped GEARS, if the Underlying Return is negative, you will lose some or all of your investment at maturity. For Capped Buffer GEARS, if the Final Underlying Price decreases compared to the Initial Underlying Price by more than the Buffer, you will lose some or a substantial portion of your investment at maturity. For Capped Airbag GEARS, Capped Trigger GEARS, Trigger In-Step Securities or Capped Trigger In-Step Securities, if the Final Underlying Price is less than the Downside Threshold, you will lose some or all of your investment at maturity. There can be no assurance that the value of the Underlying will not decrease so that at maturity you will not lose some or all of your investment.

If the value of the Underlying changes, the market value of your securities may not change in the same manner.

Owning the securities is not the same as owning the securities comprising the Underlying. Accordingly, changes in the price of the Underlying may not result in a comparable change of the market value of the securities. If the value of the Underlying 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 value of the Underlying to increase while the value of the securities declines.

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 full principal amount of your securities as described in the relevant terms supplement, 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 prices determined by pricing models used by RBCCM, as a result of such compensation or other transaction costs.

If the securities are linked to a Basket, changes in the prices of the Basket Equities may offset each other.

If the securities are linked to a Basket, the return on the securities will be linked to a weighted basket comprised of the Basket Equities. While the prices of some Basket Equities may increase over the term of the securities, the prices of other Basket Equities may not increase during the term of the securities as much or may even decline. Therefore in calculating the Underlying Return and the payment at maturity on the securities, increases in the prices of one or more of the Basket Equities may be moderated, or offset, by lesser increases or declines in the prices of one or more of the other Basket Equities. This affect may be further amplified by differing weights of the Basket Equities. More heavily weighted Basket Equities will have a larger impact on the Underlying Return than Basket Equities with lesser weightings.

You have limited anti-dilution protection.

For certain corporate events affecting the Underlying or a Basket Equity, the calculation agent may make adjustments to the Initial Underlying Price of the Underlying or the applicable Basket Equity, or other terms of the securities, as described below. However, the calculation agent is not required to make an adjustment for every corporate event that can affect the Underlying. For example, the calculation agent is not required to make any adjustments if the issuer of the Underlying or a Basket Equity, or anyone else makes a partial tender offer or a partial exchange offer for that security. If an event occurs that does not require the calculation agent to make an adjustment, 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. 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” above and “General Terms of the Securities—Calculation Agent” below 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.

Following certain corporate events relating to the Underlying or a Basket Equity where the applicable issuer is not the surviving entity, your payment at maturity 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 or Basket 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 the Underlying or a Basket 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 (as defined below) 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 or a Basket 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 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.”

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

In the ordinary course of their business, our affiliates may have expressed views on expected movements in any Underlying or Basket Equity or the components of an 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 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 or its components from multiple sources, and you should not rely solely on views expressed by our affiliates.

### Risks Related to the Underlying

The respective issuer of the Underlying or a Basket Equity will not have any role or responsibilities with respect to the securities.

The respective issuer of the Underlying or a Basket Equity will not have authorized or approved the securities, and will not be involved in any offering. The respective issuer of the Underlying or a Basket 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 or Basket Equities, or the securities. The respective issuer of the Underlying or a Basket Equity will not receive any of the proceeds from any offering of the securities. No issuer of an Underlying or Basket 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 or Basket 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 issuer of any Underlying or Basket Equity in any way 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 any such issuer, unless (and only to the extent that) our securities or the securities of our affiliates are represented by that Underlying or Basket Equity.

Unless otherwise specified in the applicable terms supplement, we will have derived the information about the respective issuers of the Underlying or each Basket Equity from publicly available information, without independent verification. You, as an investor in the securities, should make your own investigation into the respective issuer or issuers of the Underlying or Basket Equities for your securities. We urge you to review financial and other information filed periodically by the applicable issuer or issuers with the SEC.

This product prospectus supplement and each terms supplement relates only to the securities and does not relate to the Underlying or Basket Equities or the issuer of any Underlying or Basket Equity.

The respective issuer of the Underlying or Basket Equities—and thus the Underlying or Basket Equities—is subject to various market risks.

The respective issuer of the Underlying or each Basket Equity, is subject to various market risks or, if the Underlying or any of the Basket Equities is an ETF, each company whose securities constitute the ETF or each futures contract or commodity that constitutes the assets of the ETF, are subject to various market risks. Consequently, the prices of the Underlying or Basket Equities may fluctuate depending on the respective markets in which the respective issuer operates or, if the Underlying or Basket 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 payment at maturity to be delayed. The price of the Underlying or Basket Equity or any of the Basket Equities can rise or fall sharply due to factors specific to that Underlying or Basket Equity 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 applicable issuer or issuers of the Underlying or Basket Equities. We urge you to review financial and other information filed periodically by the applicable issuer or issuers with the SEC.

The historical performance of the Underlying or Basket Equities should not be taken as an indication of future performance.

The price of the Underlying or Basket Equities will determine the amount to be paid on the securities at maturity. The historical performance of the Underlying or Basket Equities does not give an indication of

future performance. As a result, it is impossible to predict whether the price of the Underlying or Basket Equities will rise or fall during the term of the securities. The price of the Underlying or Basket Equities will be influenced by complex and interrelated political, economic, financial and other factors. The value of the Underlying or Basket Equities may decrease such that you may not receive any return of your investment, subject to any applicable Buffer or Downside Threshold. There can be no assurance that the price of the Underlying or Basket Equities will not decrease so that at maturity you will not lose some or all of your investment.

For securities linked to a foreign Underlying or Basket Equities, an investment in the securities is subject to risks associated with non-U.S. securities markets.

The Underlying or Basket Equities 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.

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 or any of the Basket Equities is an ADS, which is quoted and traded in U.S. dollars, but represents the underlying ADS stock that is quoted and traded in a foreign currency and that may trade differently from the ADS, (2) the Underlying or any of the Basket Equities is substituted or replaced by a security that is quoted and traded in a foreign currency, or (3) the Underlying or any of the Basket Equities 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 or any of the Basket Equities by a security issued by a non-U.S. company may occur following certain corporate events affecting the Underlying (as described under “General Terms of the Securities—Anti-dilution Adjustments—Reorganization Events”) or in the event of delisting or termination of an Underlying or Basket Equity that is an ADS (as described under “General Terms of the Securities—Anti-dilution Adjustments—Delisting of ADSs or Termination of ADS Facility”).

If the Underlying or any of the Basket Equities 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.

#### Risks Relating to ADSs

The value of an Underlying or Basket Equity that is an ADS may not accurately track the value of the underlying ADS stock represented by such ADS.

If the Underlying or any of the Basket Equities is an ADS, each share of the Underlying or the applicable Basket Equities 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 ADS stock; 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 ADS stock.

Adverse trading conditions in the applicable non-U.S. market may negatively affect the value of the Underlying or Basket Equity.

Holder of ADSs may usually surrender the ADSs in order to receive and trade the underlying ADS stock. 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 or Basket 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 U.S. for the underlying ADS stock that is not liquid may also result in an illiquid market for the ADSs.

#### Additional Risks Relating to Exchange Traded Funds

Changes that affect an underlying index to an exchange traded fund 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 the applicable index underlying an exchange traded fund, additions, deletions or substitutions of the components of that index and the manner in which changes affecting those components, such as stock dividends, reorganizations or mergers, may be reflected in the index and could affect the price of the relevant exchange traded fund and, therefore, 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 index, or if the index sponsor discontinues or suspends calculation or publication of the 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 or a Basket 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 or Basket 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 applicable Underlying or Basket 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 or Basket Equity is not available on the Final Valuation Date, the calculation agent may determine the closing price per share of the Underlying or Basket Equity in a manner the calculation agent considers appropriate, in its sole discretion.

The performance of the Underlying or Basket Equity and the performance of its underlying index may vary.

The performance of the Underlying or Basket 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 or Basket Equity maintains a "representative sampling" strategy as to an underlying index, the performance of the Underlying or Basket Equity will differ to some degree from that of the underlying index.

In addition, because the shares of the Underlying or Basket 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 or Basket Equity may differ from its net asset value per share; shares of the Underlying or Basket Equity may trade at, above, or below their net asset value per share.

For the foregoing reasons, the performance of the Underlying or Basket 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 index or asset and the Underlying or Basket 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 index or asset trade and where the shares of the Underlying or Basket Equity trade, there may be discrepancies between the values of the underlying index or 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 index or asset remaining unchanged for multiple trading days in the city where the shares of the Underlying or Basket 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 or Basket Equity trades is closed.

#### Risks Relating to Hedging Activities and Conflicts of Interest

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

RBCCM, UBS Financial Services, Inc. (“UBS”) and its affiliates and other affiliates of ours trade the applicable Underlying or Basket Equities and other financial instruments related to the Underlying or Basket Equities on a regular basis, for their accounts and for other accounts under their management. RBCCM, UBS and its affiliates, 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 or Basket Equities. To the extent that we or one of our affiliates, or UBS or one of its 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 value of the Underlying, and, accordingly, could affect the value of the securities and the amount, if any, payable to you at maturity.

We or our affiliates, or UBS or its affiliates may currently or from time to time engage in business with the Underlying Company or Companies, 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, or UBS and its affiliates, may acquire non-public information about the Underlying Company or 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 or their business with any Underlying Company or future price movements of the Underlying or Basket Equities.

Additionally, we or one of our affiliates, or UBS or one of its affiliates and may serve as issuer, agent or underwriter for additional issuances of securities with returns linked or related to changes in the price of the Underlying or Basket Equities. By introducing competing products into the marketplace in this manner, we or one or more of our affiliates, or UBS or one of its 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, which could have an impact on the Underlying Return, and therefore 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.

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 Final Underlying Price on the Final Valuation Date and the Underlying Return and calculating the amount that we are required to pay you, if any, 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 the Final Valuation Date and the maturity date will be postponed and your return will be adversely affected. See “General Terms of the Securities—Market Disruption Events.” There are potential conflicts of interest between you and the calculation agent.

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 or each Basket Equity on the Final Valuation Date; anti-dilution adjustments, if any; the Final Underlying Price; the Underlying Return; and the amount, if any, that we will pay to you at maturity. 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 or Basket Equity issuer that is an ETF, for example, if that ETF is delisted, or if material changes are made to its Underlying Index. The calculation agent may exercise its discretion in a manner which reduces your return on the securities. Since these determinations by the calculation agent may affect the payments on the securities, the calculation agent may have a conflict of interest if it needs to make a determination of these kinds.

#### Risks Related to Taxation Issues

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 more complete discussion of the Canadian federal income tax consequences of an investment in the securities, please see “Tax Consequences—Canadian Taxation” in the accompanying prospectus. If you are not a Non-resident Holder (as that term is defined in “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 is or the Underlying includes 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 (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 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.

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.

For a more complete discussion of the Canadian federal income tax consequences of investing in the securities, please see “Tax Consequences—Canadian Taxation” in the accompanying prospectus. If you are not a Non-resident Holder (as that term is defined in “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 might be due under the securities.

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#### 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 securities included in or linked to the Underlying or Basket Equities and/or listed and/or over-the-counter derivative instruments linked to the Underlying or Basket Equities prior to or on the pricing date. From time to time, 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 or Basket Equities;
- acquire or dispose of long or short positions in listed or over-the-counter derivative instruments based on the price of the Underlying or Basket Equities; or
- any combination of the above two.

We, the Agents, 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, the Agents, and our respective affiliates may close out our or their hedges on or before the Final Valuation Date. That step may involve sales or purchases of the Underlying or Basket Equities or over-the-counter derivative instruments linked to the Underlying or Basket Equities.

## 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 securities are senior unsecured debt obligations of Royal Bank of Canada that are linked to one or more equity securities, including ADSs or shares of an ETF or a weighted basket of common stocks, (including ADSs) and/or ETFs specified in the relevant terms supplement. The securities will be issued by Royal Bank of Canada under a senior debt indenture, dated as of October 23, 2003, as supplemented from time to time, between us and The Bank of New York Mellon (as successor to JPMorgan Chase Bank, N.A.), as trustee.

The securities do not pay interest and do not guarantee any return of principal at, or prior to, maturity. At maturity the securities will return a payment in cash, the amount of which will vary depending on the performance of the Underlying, calculated in accordance with the applicable formula set forth below, and whether the securities have certain of the terms and provisions that are described in more detail below. The securities do not guarantee any return of your investment at maturity. Any payment on the securities, including any repayment of principal, is subject to the creditworthiness of Royal Bank of Canada.

The securities are unsecured debt obligations and are not savings accounts or insured deposits of a bank. 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 specified in the relevant terms supplement. The securities will be represented by one or more permanent global securities registered in the name of The Depository Trust Company, or DTC, or its nominee, as described under “Description of Debt Securities—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 herein, the accompanying prospectus and the prospectus supplement. If the terms described in the relevant terms supplement are inconsistent with those described herein, the accompanying prospectus or the prospectus supplement, the terms described in the relevant terms supplement will control.

All references to the “debt securities” in the accompanying prospectus and all references to the “notes” in the accompanying prospectus supplement shall be read as and shall apply to the “securities” for the purpose of this product prospectus supplement. Unless the context otherwise requires, references to the “debt securities,” “notes” and the “securities” in the prospectus, prospectus supplement and this product prospectus supplement can be read interchangeably and are synonymous.

### 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 Valuation Date is postponed as described below. We will also specify in the relevant terms supplement whether or not the securities have certain of the terms and provisions that are described in more detail below.

### Capped GEARS

Unless otherwise specified in the relevant terms supplement, for Capped GEARS, the amount you will receive at maturity is based on the Underlying Return, the Upside Gearing and the Maximum Gain, as described below.

If the Underlying Return is positive or zero, you will receive at maturity a cash payment per \$10 in principal amount of the securities equal to:

$\$10 + (\$10 \times \text{the lesser of: (i) (Upside Gearing} \times \text{Underlying Return) and (ii) Maximum Gain})$

If the Underlying Return is negative, your investment will be fully exposed to any decrease in the Underlying, and you will lose 1% of the principal amount of your securities for every 1% that the Final Underlying Price declines from the Initial Underlying Level. Under these circumstances, you will receive at maturity a cash payment per \$10 in principal amount of the securities equal to:

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

For Capped GEARS, you will lose some or all of your investment at maturity if the Final Underlying Price declines from the Initial Underlying Level, resulting in a loss proportionate to the negative Underlying Return.

### Capped Buffer GEARS

Unless otherwise specified in the relevant terms supplement, for Capped Buffer GEARS, the amount you will receive at maturity is based on the Underlying Return, the Upside Gearing, the Maximum Gain, the Downside Threshold and the Buffer, as described below.

If the Underlying Return is positive, you will receive at maturity a cash payment per \$10 in principal amount of the securities equal to:

$\$10 + (\$10 \times \text{the lesser of: (i) (Upside Gearing} \times \text{Underlying Return) and (ii) Maximum Gain})$

If the Underlying Return is zero or negative, but the Final Underlying Price is greater than or equal to the Downside Threshold, you will receive at maturity a cash payment of \$10 per \$10 in principal amount of the securities.

If the Underlying Return is negative and the Final Underlying Price is less than the Downside Threshold, your investment will be fully exposed to any decline in the Underlying or Basket beyond the Buffer. For every 1% decline of the Underlying beyond the Buffer, you will lose an amount equal to 1% of the principal amount of your securities. As a result, your downside market exposure is buffered against a decline in the value of the Underlying up to the Buffer. Under these circumstances, you will receive at maturity a cash payment per \$10 in principal amount of the securities equal to:

$\$10 + [(\$10 \times (\text{Underlying Return} + \text{Buffer}))]$

For Capped Buffer GEARS, you will lose some or a substantial portion of your investment at maturity if the Final Underlying Price decreases from the Initial Underlying Level by more than the Buffer, resulting in a loss equal to the negative Underlying Return in excess of the Buffer.

### Capped Airbag GEARS

Unless otherwise specified in the relevant terms supplement, for Capped Airbag GEARS, the amount you will receive at maturity is based on the Underlying Return, the Upside Gearing, the Maximum Gain, the Downside Threshold, the Threshold Percentage and the Downside Gearing, as described below.

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If the Underlying Return is positive, you will receive at maturity a cash payment per \$10 in principal amount of the securities equal to:

$\$10 + (\$10 \times \text{the lesser of: (i) (Upside Gearing} \times \text{Underlying Return) and (ii) Maximum Gain})$

If the Underlying Return is zero or negative, but the Final Underlying Price is greater than or equal to the Downside Threshold, you will receive at maturity a cash payment of \$10 per \$10 in principal amount of the securities. As a result, your downside market exposure is contingent upon whether the Final Underlying Price is less than the Downside Threshold.

If the Underlying Return is negative and the Final Underlying Price is less than the Downside Threshold, your investment will be fully exposed to any decline in the Underlying Equity. In this case, you will incur a leveraged loss of principal for every 1% by which the Underlying Return is less than the Threshold Percentage. Under these circumstances, you will receive at maturity a cash payment per \$10 in principal amount of the securities equal to:

$\$10 + [\$10 \times (\text{Underlying Return} + \text{Threshold Percentage}) \times \text{Downside Gearing}]$

You will lose some or all of your investment at maturity if the Final Underlying Price is less than the Downside Threshold.

#### Capped Trigger GEARS

Unless otherwise specified in the relevant terms supplement, for Capped Trigger GEARS, the amount you will receive at maturity is based on the Underlying Return, the Upside Gearing, the Maximum Gain and the Downside Threshold, as described below.

If the Underlying Return is positive, you will receive at maturity a cash payment per \$10 in principal amount of the securities equal to:

$\$10 + (\$10 \times \text{the lesser of: (i) (Upside Gearing} \times \text{Underlying Return) and (ii) Maximum Gain})$

If the Underlying Return is zero or negative, but the Final Underlying Price is greater than or equal to the Downside Threshold, you will receive at maturity a cash payment of \$10 per \$10 in principal amount of the securities. As a result, your downside market exposure is contingent upon whether the Final Underlying Price is less than the Downside Threshold.

If the Underlying Return is negative and the Final Underlying Price is less than the Downside Threshold, your investment will be fully exposed to any decline in the Underlying. In this case, you will lose 1% of the principal amount of your securities for every 1% that the value of the Underlying declines below the Initial Underlying Level. Under these circumstances, you will receive at maturity a cash payment per \$10 in principal amount of the securities equal to:

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

For Capped Trigger GEARS, you will lose some or all of your investment at maturity if the Final Underlying Price is less than the Downside Threshold.

#### Trigger In-Step Securities

Unless otherwise specified in the relevant terms supplement, for Trigger In-Step Securities, the amount you will receive at maturity is based on the Underlying Return, the Step Return and the Downside Threshold, as described below.

If the Final Underlying Price is greater than or equal to the Downside Threshold, you will receive at maturity a cash payment per \$10 in principal amount of the securities equal to:

$\$10 + (\$10 \times \text{the greater of: (i) Step Return and (ii) Underlying Return})$

If the Final Underlying Price is less than the Downside Threshold, your investment will be fully exposed to any decline in the Underlying. In this case, you will lose 1% of the principal amount of your securities for every 1% that the value of the Underlying or Basket declines below the Initial Underlying Level. As a result, your downside market exposure is contingent upon whether the Final Underlying Price is less than the Downside Threshold. Under these circumstances, you will receive at maturity a cash payment per \$10 in principal amount of the securities equal to:  $\$10 + (\$10 \times \text{Underlying Return})$

For Trigger In-Step Securities, you will lose some or all of your investment at maturity if the Final Underlying Price is less than the Downside Threshold.

#### Capped Trigger In-Step Securities

Unless otherwise specified in the relevant terms supplement, for Trigger In-Step Securities, the amount you will receive at maturity is based on the Underlying Return, the Step Return, the Maximum Gain and the Downside Threshold, as described below.

If the Final Underlying Price is greater than or equal to the Downside Threshold, you will receive at maturity a cash payment per \$10 in principal amount of the securities equal to:

$\$10 + (\$10 \times \text{the greater of: (i) Step Return and (ii) Underlying Return})$ , subject to the Maximum Gain

If the Final Underlying Price is less than the Downside Threshold, your investment will be fully exposed to any decline in the Underlying. In this case, you will lose 1% of the principal amount of your securities for every 1% that the value of the Underlying declines below the Initial Underlying Level. As a result, your downside market exposure is contingent upon whether the Final Underlying Price is less than the Downside Threshold. Under these circumstances, you will receive at maturity a cash payment per \$10 in principal amount of the securities equal to:  $\$10 + (\$10 \times \text{Underlying Return})$

For Capped Trigger In-Step Securities, you will lose some or all of your investment at maturity if the Final Underlying Price is less than the Downside Threshold.

\* \* \*

The "Maximum Gain," if applicable, is a fixed percentage as specified in the relevant terms supplement.

The "Upside Gearing" is a fixed number as specified in the relevant terms supplement.

The "Step Return," if applicable, is a fixed percentage as specified in the relevant terms supplement.

The "Buffer," if applicable, is a fixed percentage as specified in the relevant terms supplement.

The "Downside Threshold," if applicable, is a fixed price as specified in the relevant terms supplement.

The "Threshold Percentage," if applicable, is a fixed negative percentage as specified in the relevant terms supplement.

The "Downside Gearing," if applicable, is a fixed number as specified in the relevant terms supplement.

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 specified in the relevant terms supplement, the “Underlying Return,” as calculated by the calculation agent, is the percentage change in the closing price of the Underlying 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 will be determined. The Underlying Return, unless otherwise specified in the relevant terms supplement, is calculated as follows:

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

Return = 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 on the Trade Date, or such other date as specified in the relevant terms supplement, or in the case of a Basket, 100.

Unless otherwise specified in the relevant terms supplement, the “Final Underlying Price” means the closing price of one share of the Underlying on the Final Valuation Date, or in the case of a Basket, a level of the Underlying equal to the product of (i) the Initial Underlying Price of such Underlying multiplied by (ii) the sum of one and the weighted performance of the Basket Equities on the Final Valuation Date.

In the case of an offering of the securities linked to a Basket, the Initial Underlying Price may be referred to in the applicable terms supplement as the “Initial Underlying Level” and the Final Underlying Price may be referred to as the “Final Underlying Level,” or each in such other manner as may be specified in the applicable terms supplement.

Furthermore, in the case of an offering of the securities linked to a Basket, in the applicable terms supplement, (i) the term “initial equity price” will refer to, with respect to a Basket Equity, the closing price of such Basket Equity determined on the trade date and (ii) the term “final equity price” will refer to, with respect to a Basket Equity, the closing price of such Basket Equity determined on the Final Valuation Date.

The “Closing Price” on any trading day will equal the closing price of the Underlying or applicable Basket Equity published following the regular official weekday close of trading on that trading day.

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

· on the principal national securities exchange on which that Underlying or Basket Equity is listed for trading on that day, or

· if that Underlying or Basket 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 or Basket Equity.

If that Underlying or Basket Equity is not listed or traded as described above, then the closing price for that security on any day will be the average, as determined by the calculation agent, of the bid prices for that security obtained from as many dealers in that security 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 Agents or any of their affiliates.

Unless otherwise specified in the relevant terms supplement, as to any Underlying or Basket Equity, 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 MKT, 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.

The Final Valuation Date for your securities will be the date specified in the applicable terms supplement, unless the calculation agent determines that a market disruption event has occurred or is continuing on any such day with respect to the Underlying or any Basket Equity.

In that event, the Final Valuation Date for the affected Underlying or Basket Equity will be the first following trading day on which the closing price of such Underlying or Basket Equity is determinable and on which the calculation agent determines that a market disruption event has not occurred and is not continuing with respect to such Underlying or Basket Equity. In no event, however, will the Final Valuation Date for the securities be postponed by more than eight trading days with respect to any Underlying or Basket Equity. If the eighth business day following the date originally scheduled to be the applicable Final Valuation Date is not a trading day, or if there is a market disruption event on that date, the calculation agent will determine the Final Underlying Price for that Final Valuation Date on such date, using the closing price (or, if trading in the relevant securities has been materially suspended or materially limited, the calculation agent's good faith estimate of the closing price that would have prevailed but for such suspension or limitation or non-trading day) on that eighth scheduled business day of the applicable Underlying or Basket Equity.

If a particular offering of the securities is linked to a Basket, a market disruption event for a particular Basket Equity included in such Underlying will not necessarily be a market disruption event for another Basket Equity included in such Basket. If, on the Final Valuation Date, no market disruption event with respect to a particular Basket Equity occurs or is continuing, then such Final Valuation Date will not be postponed with respect to such Basket Equity, irrespective of the occurrence of a market disruption event on such Final Valuation Date with respect to one or more of the other Basket Equities. In that event, the calculation agent will determine the Final Underlying Price for the Underlying using the relevant final equity price(s) determined on the Final Valuation Date and the relevant final equity price(s) determined on any postponed Final Valuation Date(s).

A postponement of the Final Valuation Date for one offering of the securities will not affect the Final Valuation Date for any other offering of the securities.

If the Final Valuation Date specified in the applicable terms supplement occurs on a day that is not a trading day, the Final Valuation Date will be the next following trading day.

The maturity date will be specified in the relevant terms supplement and is subject to adjustment as described below. 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 Valuation Date is postponed, the maturity date will be automatically postponed to maintain the same number of business days between the latest postponed Final Valuation Date and the maturity date as existed prior to the postponement(s) of the Final Valuation Date, unless otherwise specified in the relevant terms supplement. We describe market disruption events under "—Market Disruption Events."

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

RBCCM will act as the calculation agent. The calculation agent will determine, among other things, the Initial Underlying Price, the Downside Threshold, if applicable, the Closing Price of each relevant security on the Final Valuation Date, the Final Underlying Price, the Underlying Return and the payment at maturity, if any, on the securities. In addition, the calculation agent will determine whether there has been a market disruption event or anti-dilution adjustments, if any. 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 at maturity on or prior to 11:00 a.m., New York City time, on the business day preceding the maturity date.

All calculations with respect to the Initial Underlying Price, the Downside Threshold, if applicable, the Closing Price on the Final Valuation Date, the Final Underlying Price, and the Underlying Return will be rounded to the nearest one hundred-thousandth, with five one-millionths rounded upward (e.g., .876545 would be rounded to .87655); all dollar amounts related to determination of the payment per \$10 in principal amount of the securities at maturity, if any, will be rounded to the nearest one ten-thousandth, with five one hundred-thousandths rounded upward (e.g., .87645 would be rounded up to .8765); 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 determining the Closing Price of each Underlying or Basket Equity on the Final Valuation Date and, consequently, 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.” The determination of whether any of the events below would constitute a market disruption event will be within the sole discretion of the calculation agent.

With respect to any Underlying or Basket Equity, a “market disruption event,” unless otherwise specified in the relevant terms supplement, means:

- a suspension, absence or material limitation of trading in the Underlying or Basket Equity in the primary market for such equity for more than two consecutive hours of trading or during the one hour before the close of trading in that market; or
- a suspension, absence or material limitation of trading in option or futures contracts, if available, relating to the Underlying or Basket Equity or, if the Underlying or Basket Equity is an ETF, to the underlying index of the ETF or the securities, futures contracts, commodities or other assets constituting the assets of the ETF (“underlying assets”), in the primary market for those contracts for more than two consecutive hours of trading or during the one hour before the close of trading in that market;
- if the Underlying or Basket Equity is an ETF, the occurrence or existence of a suspension, absence or material limitation of trading in the assets which then comprise 20% or more of the value of the underlying assets of the ETF on the primary exchanges for such assets for more than two consecutive hours of trading, or during the one hour before the close of trading of such exchanges; or
- in any other event, if the calculation agent determines that the event materially interferes with our ability or the ability of any of our affiliates to (1) maintain or unwind all or a material 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” or (2) effect trading in the Underlying or any Basket Equity generally.

For the avoidance of doubt, for any offering of the securities, a suspension, absence or material limitation of trading in option or futures contracts, if available, relating to the Underlying or a Basket Equity or, if the Underlying or Basket Equity is an ETF, to the underlying index or the underlying assets of the ETF, in the primary market for those contracts by reason of any of:

- a price change exceeding limits set by that market;
- an imbalance of orders relating to those contracts; or
- a disparity in bid and ask quotes relating to those contracts,

will constitute a market disruption event relating to such Underlying or Basket Equity.

For this purpose, for any offering of the securities, an “absence of trading” in option or futures contracts, if available, relating to the Underlying or a Basket Equity or, if the Underlying or Basket Equity is an ETF, to the underlying index or the underlying assets of the ETF, in the primary market for those contracts will not include any time when that market is itself closed for trading under ordinary circumstances.

The following events will not be market disruption events:

- a limitation on the hours or numbers of days of trading in the Underlying or a Basket Equity (as the case may be) in the primary market for such equity, but only if the limitation results from an announced change in the regular business hours of the relevant market; or
- a decision to permanently discontinue trading in the option or futures contracts relating to the Underlying or a Basket Equity (as the case may be) or, if the Underlying or Basket Equity is an ETF, to the underlying index or underlying assets of the ETF.

#### Anti-dilution Adjustments

The Initial Underlying Price will be specified in the relevant terms supplement. The calculation agent will adjust the Initial Underlying Price if applicable, if any of the dilution events described below occur with respect to an Underlying or Basket Equity after the applicable Trade Date.

The calculation agent will adjust the Initial Underlying Price as described below, but only if an event below under this section occurs with respect to the Underlying or Basket Equity and only if the relevant event occurs during the period described under the applicable subsection. The Initial Underlying Price will be subject to the adjustments described below, independently and separately, with respect to the dilution events that affect the Underlying or Basket Equity. If more than one anti-dilution event requiring adjustment occurs with respect to the Initial Underlying Price, the calculation agent will adjust them for each event, sequentially, in the order in which the events occur, and on a cumulative basis. Therefore, having adjusted the Initial Underlying Price for the first event, the calculation agent will adjust the Initial Underlying Price for the second event, applying the required adjustment to the Initial Underlying Price 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.

If the Initial Underlying Price is adjusted as described in this “—Anti-dilution Adjustments” section, the calculation agent may adjust the Downside Threshold, if applicable for the applicable offering as it deems necessary to reflect that adjustment.

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

- in the case of a stock split, the first day on which the Underlying or Basket Equity trades without the right to receive the stock split occurs after the Trade Date and on or before the Final Valuation Date; or

in the case of a stock dividend, the ex-dividend date occurs after the Trade Date and on or before the Final Valuation Date.

The ex-dividend date for any dividend or other distribution with respect to the Underlying or Basket Equity is the first day on which the Underlying or Basket 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 or any Basket Equity is subject to a reverse stock split, then the calculation agent will adjust the Initial Underlying Price by multiplying the prior Initial Underlying Price by a number equal to: (1) the number of shares of the Underlying or Basket Equity outstanding immediately before the reverse stock split becomes effective; divided by (2) the number of shares of the Underlying or Basket Equity outstanding immediately after the reverse stock split becomes effective. The Initial Underlying Price will not be adjusted, however, unless the reverse stock split becomes effective after the Trade Date and on or before the Final Valuation Date.

#### Extraordinary Dividends

Any distribution or dividend on the Underlying or any Basket 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 or any Basket Equity, the calculation agent will adjust the Initial Underlying Price to equal the product of: (1) the prior Initial Underlying Price, times (2) a fraction, the numerator of which is the amount by which the closing price of one share of the Underlying or Basket 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 or Basket Equity on the business day before the ex-dividend date. The Initial Underlying Price will not be adjusted, however, unless the ex-dividend date occurs after the Trade Date and on or before the Final Valuation Date.

The extraordinary dividend amount with respect to an extraordinary dividend for the Underlying or Basket 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 or Basket Equity minus the amount per share of the immediately preceding dividend, if any, that was not an extraordinary dividend for the Underlying or Basket 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 or any Basket 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 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 or any Basket Equity issues transferable rights or warrants to all holders of the Underlying or Basket Equity to subscribe for or purchase the Underlying or Basket Equity at an exercise price per share that is less than the closing price of one share of the Underlying or Basket

Equity on the business day before the ex-dividend date for the issuance, then the applicable Initial Underlying Price will be adjusted by multiplying the prior Initial Underlying Price by the following fraction:

the numerator will be the number of shares of the Underlying or Basket Equity outstanding at the close of business on the day before that ex-dividend date plus the number of additional shares of the Underlying or Basket Equity that the aggregate offering price of the total number of shares of the Underlying or Basket 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 or Basket Equity outstanding at the close of business on the day before that ex-dividend date plus the number of additional shares of the Underlying or Basket Equity offered for subscription or purchase under those transferable rights or warrants.

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

#### Reorganization Events

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

Each of the following is a reorganization event with respect to the Underlying or any Basket Equity:

- the Underlying or Basket Equity is reclassified or changed;
- the issuer of the Underlying or Basket 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 or Basket 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 or Basket Equity effects a spin-off—that is, issues to all holders of the Underlying or Basket Equity securities of another issuer, other than as part of an event described in the four bullet points above;
- the issuer of the Underlying or Basket 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 or Basket Equity.

#### Valuation of Distribution Property

If a reorganization event occurs with respect to the Underlying or any Basket Equity, and the calculation agent does not substitute another stock for the Underlying or Basket Equity as described in “—Substitution” below, then the calculation agent will determine the applicable closing price of one share

of the Underlying or Basket Equity on the Final Valuation 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 or Basket Equity, as the Underlying or Basket 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 Valuation 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 or Basket 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 or Basket Equity on the Final Valuation 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 or Basket Equity were outstanding and were affected by the same kinds of events.

For example, if the issuer of the Underlying or Basket Equity merges into another company and each share of the Underlying or Basket Equity is converted into the right to receive two common shares of the surviving company and a specified amount of cash, then on the Final Valuation Date, the closing price of one share of the Underlying or Basket 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 relevant security. 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 or Basket Equity or in respect of whatever securities whose value determines the closing price of one share of that security on the Final Valuation 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 or Basket 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 or Basket Equity as described above. Consequently, in this product prospectus supplement, when we refer to the Underlying or Basket Equity, we mean any Distribution Property that is distributed in a reorganization event in respect of that security. Similarly, when we refer to the issuer of the Underlying or Basket 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 or Basket Equity upon becoming subject to a reorganization event, then the calculation agent will, in its sole discretion, substitute another stock for that security. 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

or Basket Equity. For all purposes, the substitute stock will be deemed to be the relevant Underlying or Basket Equity for purposes hereof.

The calculation agent will determine, in its sole discretion, the Initial Underlying Price 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 or a Basket 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 or Basket Equity. For example, if a holder of the Underlying or Basket Equity receives an extraordinary dividend, the provisions described in this section would apply to that security. On the other hand, if a spin-off occurs, and the Underlying or Basket Equity represents both the spun-off security as well as the existing Underlying or Basket 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 or Basket 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 or Basket Equity so that the market price of that security 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 ADS, 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.

#### Delisting of ADSs or Termination of ADS Facility

If an ADS serving as the applicable Underlying or Basket 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 or Basket Equity. The Initial Underlying Price will be adjusted by dividing the prior applicable Initial Underlying Price by the number of shares of the underlying ADS stock represented by a single ADS, and the calculation agent will make an appropriate adjustment to the Downside Threshold (if applicable). On and after the Change Date, for all purposes, including the determination of the closing price, of the underlying ADS stock, 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 Final Valuation 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 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;
  - who is subject to such taxes by reason of the holder being connected presently or formerly with Canada or any
- (ii) 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;
  - 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
- (iii) “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 our issued and outstanding shares);
  - who presents such security for payment (where presentation is required, such as if a security is issued in definitive
- (iv) 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
  - if the full amount of the monies payable on such date has not been received by the trustee on or prior to such due
  - (b) 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;
  - who could lawfully avoid (but has not so avoided) such withholding or deduction by complying, or requiring that
- (v) any agent comply with, any statutory requirements necessary to establish qualification for an exemption from withholding or by making, or requiring that any agent make, a declaration of non-residence or other similar claim for exemption to any relevant tax authority; or
  - who is subject to deduction or withholding on account of any tax, assessment, or other governmental charge that is
- (vi) imposed or withheld by reason of the application of Section 1471 through 1474 of the United States Internal Revenue Code of 1986 (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 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 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 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 "Tax Consequences—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 Valuation 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 securities 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 "Description of Debt Securities—Ownership and Book-Entry Issuance" and "—Considerations Relating to DTC."

#### Registrar, Transfer Agent and Paying Agent

Payment of amounts due at maturity 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 in The City of New York. The Bank of New York Mellon or one of its affiliates will act as registrar and transfer agent for the securities. The Bank of New York Mellon 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, but upon payment (with the giving of such indemnity as The Bank of New York Mellon 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.

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CANADIAN FEDERAL INCOME TAX SUMMARY

Investors should read carefully the description of material Canadian federal income tax considerations relevant to a Non-resident Holder owning debt securities under “Tax Consequences—Canadian Taxation” in the accompanying prospectus.

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**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 Morrison & Foerster 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 Morrison & Foerster 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 Morrison & Foerster 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 Morrison & Foerster 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 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 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.

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. Further, this discussion does not address the tax consequences applicable to any holders under section 451(b) of the Code.

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

We will not attempt to ascertain whether the issuer of the Underlying (or, 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 (or, 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 (or 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.

In the opinion of our counsel, Morrison & Foerster LLP, it would generally be reasonable to treat a security with terms described in this product prospectus supplement as a pre-paid cash-settled derivative contract in respect of the Underlying for U.S. federal income tax purposes, and the terms of the securities require a holder and us (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 U.S. holder should generally recognize capital gain or loss upon the 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 us in respect of the securities prior to the maturity of the securities. In such case, if that date is not in excess of one year from the issue date, a U.S. holder may be treated as having a holding period in respect of the securities that is one year or less even if the holder receives cash upon maturity of the securities at a time that is more than one year after the beginning of its holding period.

**Potential Application of Section 1260 of the Internal Revenue Code.** If the Underlying is or a Basket Equity includes 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 pricing 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 sale or maturity (assuming such income accrued at a constant rate equal to the applicable federal rate as of the date of 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 sale or maturity of the security at fair market value (and appropriately taking into account any leveraged upside exposure). 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 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 contingent 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 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. 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 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. Holders are urged to consult their tax advisors concerning the significance, and the potential impact, of the above considerations. 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.

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 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, 2021. Accordingly, if the securities are not delta-one instruments and are issued before January 1, 2021, 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 paying 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 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 OID), dividends, other fixed or determinable annual or periodical gain, profits, and income, and on the gross proceeds from a disposition of property of a type which can produce U.S. source interest or dividends (“Withholdable Payments”), if paid to a foreign financial institution (including amounts paid to a foreign financial institution on behalf of a holder), unless such institution enters into an agreement with the U.S. Treasury Department to collect and provide to the U.S. Treasury Department certain information regarding U.S. financial account holders, including certain account holders that are foreign entities with U.S. owners, with such institution or otherwise complies with FATCA. In addition, the securities may constitute a “financial account” for these purposes and thus, 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 and the IRS have announced that withholding on payments of gross proceeds from a sale or redemption of the securities will only apply to payments made after December 31, 2018. However, recently proposed regulations eliminate the requirement of withholding on gross



proceeds from the sale or disposition of financial instruments. The U.S. Treasury Department has indicated that taxpayers may rely on these proposed regulations pending their finalization. If we determine withholding is appropriate with respect to the securities, we will withhold tax at the applicable statutory rate, and we will not pay any additional amounts in respect of such withholding. 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.

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## UNDERWRITING

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. RBCCM will 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.

We own, directly or indirectly, all of the outstanding equity securities of RBCCM. The underwriting arrangements for this offering comply with the requirements of FINRA Rule 5121 regarding a FINRA member firm’s underwriting of securities of an affiliate. In accordance with FINRA Rule 5121, no underwriter may make sales in this offering to any discretionary account without the prior written approval of the customer.

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.

Unless otherwise specified in the relevant terms supplement, the Settlement Date for the securities will be the third business day following the Trade Date (which is referred to as a “T+3” settlement cycle).

No Prospectus (as defined in Directive 2003/71/EC (as amended, the “Prospectus Directive”)) will be prepared in connection with the securities. Accordingly, the securities may not be offered to the public in any member state of the European Economic Area (the “EEA”), and any purchaser of the securities who subsequently sells any of the securities in any EEA member state must do so only in accordance with the requirements of the Prospectus Directive, as implemented in that member state.

The securities are not intended to be offered, sold or otherwise made available to, and should not be offered, sold or otherwise made available to, any retail investor in the 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 Insurance Distribution Directive 2016/97/EU, 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 the Prospectus Directive. 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.

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#### EMPLOYEE RETIREMENT INCOME SECURITY ACT

This section is only relevant to you if you are an insurance company or the fiduciary of a pension plan or an employee benefit plan (including a governmental plan, an IRA or a Keogh Plan) proposing to invest in the securities.

The Employee Retirement Income Security Act of 1974, as amended (“ERISA”), imposes certain requirements on “employee benefit plans” (as defined in Section 3(3) of ERISA) subject to ERISA, including entities such as collective investment funds and separate accounts whose underlying assets include the assets of such plans (collectively, “ERISA Plans”) and on those persons who are fiduciaries with respect to ERISA Plans. Each fiduciary of an ERISA Plan should consider the fiduciary standards of ERISA in the context of the ERISA Plan’s particular circumstances before authorizing an investment in the covered bonds. Accordingly, among other factors, the fiduciary should consider whether the investment would satisfy the prudence and diversification requirements of ERISA and would be consistent with the documents and instruments governing the ERISA Plan.

In addition, Section 406 of ERISA and Section 4975 of the Code prohibit certain transactions involving the assets of an ERISA Plan, as well as those plans that are not subject to ERISA but which are subject to Section 4975 of the Code, such as individual retirement accounts, including entities whose underlying assets include the assets of such plans (together with ERISA Plans, “Plans”) and certain persons (referred to as “parties in interest” or “disqualified persons”) having certain relationships to such Plans, unless a statutory or administrative exemption is applicable to the transaction. Governmental plans may be subject to similar prohibitions. Therefore, a plan fiduciary considering purchasing the securities should consider whether the purchase or holding of such instruments might constitute a “prohibited transaction.”

Royal Bank and certain of its affiliates each may be considered a “party in interest” or a “disqualified person” with respect to many employee benefit plans by reason of, for example, Royal Bank (or its affiliate) providing services to such plans. Prohibited transactions within the meaning of ERISA or the Code may arise, for example, if the securities are acquired by or with the assets of a Plan, and with respect to which Royal Bank or any of its affiliates is a “party in interest” or a “disqualified person,” unless those securities are acquired under an exemption for transactions effected on behalf of that Plan by a “qualified professional asset manager” or an “in-house asset manager,” for transactions involving insurance company general accounts, for transactions involving insurance company pooled separate accounts, for transactions involving bank collective investment funds, or under another available exemption. Section 408(b)(17) provides an additional exemption for the purchase and sale of securities and related lending transactions where neither the issuer of the securities nor any of its affiliates have or exercise any discretionary authority or control or render any investment advice with respect to the assets of any Plan involved in the transaction and the Plan pays no more than “adequate consideration” in connection with the transaction. The person making the decision on behalf of a Plan or a governmental plan shall be deemed, on behalf of itself and any such plan, by purchasing and holding the securities, or exercising any rights related thereto, to represent that (a) such purchase, holding and exercise of the securities will not result in a non-exempt prohibited transaction under ERISA or the Code (or, with respect to a governmental plan, under any similar applicable law or regulation) and (b) neither Royal Bank nor any of its affiliates is a “fiduciary” (within the meaning of Section 3(21) of ERISA) with respect to the purchaser or holder in connection with such person’s acquisition, disposition or holding of the securities, or any exercise related thereto or as a result of any exercise by Royal Bank or any of its affiliates of any rights in connection with the securities, and no advice provided by Royal Bank or any of its affiliates has formed a primary basis for any investment decision by or on behalf of such purchaser or holder in connection with the securities and the transactions contemplated with respect to the securities. If you are an insurance company or the fiduciary of a pension plan or an employee benefit plan, and propose to invest in the securities, you should consult your legal counsel.