

ROYAL BANK OF CANADA  
Form 424B5  
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Product Prospectus Supplement CS-REVCON-INDEX-1 to the Prospectus dated September 7, 2018 and the Prospectus Supplement dated September 7, 2018

Royal Bank of Canada  
Senior Global Medium-Term Notes, Series H  
Cash Settled Reverse Convertible Notes Linked to the Lesser Performing of Two or More Indices

## GENERAL TERMS

Royal Bank of Canada may offer and sell cash-settled reverse convertible notes (the “notes”) from time to time of any maturity. The prospectus dated September 7, 2018, the prospectus supplement dated September 7, 2018 and this product prospectus supplement describe terms that will apply generally to the notes, including any notes you purchase. A separate pricing supplement will describe the terms that apply specifically to your notes, including any changes to the terms specified below. If the terms described in the relevant pricing supplement are inconsistent with those described in this document or in the accompanying prospectus supplement or prospectus, the terms described in the relevant pricing supplement will control.

The notes are non-principal-protected unsecured notes linked to the performance of two or more Reference Indices. Each Reference Index will be either an equity index or a commodity index, or any other type of index that we may describe in the relevant pricing supplement.

During the term of the notes, you will receive payments of interest at the rate, and on the dates, specified in the relevant pricing supplement.

At maturity, you will receive (a) any accrued and unpaid interest on the notes and (b) either the principal amount of the notes or, under the circumstances described in this product prospectus supplement, a cash amount based on the performance of the Reference Index that has the greatest percentage decrease in its level during the term of the notes. The cash amount that will be paid to you at maturity may be less than the principal amount of your notes, and may be zero. We describe in more detail below how the payment at maturity will be determined.

The notes will not be listed on any securities exchange.

Your investment in the notes involves certain risks. See “Additional Risk Factors Specific to Your Notes” beginning on page PS-4 to read about investment risks relating to the notes. Unless otherwise specified in the relevant pricing supplement, the principal of the notes is not protected, and you could lose your entire investment.

The price at which you purchase the notes includes hedging costs and profits that Royal Bank of Canada or its affiliates expect to incur or realize. These costs and profits will reduce the secondary market price, if any secondary market develops, for the notes. As a result, you will experience an immediate and substantial decline in the value of your notes on the issue date.

None of the Securities and Exchange Commission (the “SEC”), any state securities commission or any other regulatory body has approved or disapproved of the notes or passed upon the accuracy of this product prospectus supplement or the accompanying prospectus and prospectus supplement. Any representation to the contrary is a criminal offense. We may use this product prospectus supplement in the initial sale of a note. In addition, RBC Capital Markets, LLC or one of our other affiliates may use this product prospectus supplement in a market-making transaction in a note 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.

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The notes 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.  
RBC Capital Markets, LLC

Product Prospectus Supplement dated October 19, 2018

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In this product prospectus supplement, references to the “accompanying prospectus” mean the accompanying prospectus, dated September 7, 2018, as supplemented by the accompanying prospectus supplement, dated September 7, 2018, of Royal Bank of Canada. References to the “relevant pricing supplement” mean the pricing supplement that describes the specific terms of your notes.

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**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 pricing supplement.

- Issuer:** Royal Bank of Canada (“Royal Bank”).
- Reference Indices:** Your notes will be linked to two or more Reference Indices, as specified in the relevant pricing supplement. Each Reference Index will be either an equity index or a commodity index, or any other type of index that we may describe in the relevant pricing supplement.
- Interest Rate (Coupon):** As specified in the relevant pricing supplement.
- Interest Payment Dates:** As specified in the relevant pricing supplement, subject to any prior Automatic Call, if applicable.
- Minimum Investment:** As specified in the relevant pricing supplement.
- Denominations:** Unless otherwise specified in the relevant pricing supplement, each note will be issued in denominations of \$1,000 and integral multiples of \$1,000.
- Monitoring Method:** As specified in the relevant pricing supplement, as further described below.
- Monitoring Period:** As specified in the relevant pricing supplement for each Reference Index. For example, the Monitoring Period may (a) include the period from pricing date through the final valuation date, (b) be limited to the final valuation date or (c) be of any other length set forth in the relevant pricing supplement. Each Reference Index to which your notes are linked may have the same Monitoring Period, or may have a different Monitoring Period.
- Automatic Call:** As specified in the relevant pricing supplement, as further described below.
- Payment at Maturity:** Payment at maturity will be based on the performance of the applicable Reference Indices. For each \$1,000 principal amount of the notes, you will receive at maturity \$1,000 plus any accrued and unpaid interest, unless:
- (i) the Final Level of one or more of the applicable Reference Indices is less than its Initial Level; and
  - (ii) in the case of any of the Reference Indices to which your notes are linked,
    - (a) for Reference Indices that are subject to Intra-Day Monitoring, at any time during the applicable Monitoring Period, the level of the Reference Index is less than the applicable Barrier Level; or
    - (b) for Reference Indices that are subject to Close of Trading Day Monitoring, on any trading day during the Monitoring Period, the closing level of the Reference Index is less than the Barrier Level.
- If the events described in (i) and (ii) both occur, you will receive at maturity, instead of the principal amount of the notes, a cash amount, as calculated below (the “Redemption Amount”), based on the performance of the Lesser Performing Reference Index (as defined below). You will also receive at maturity any accrued and unpaid interest on the notes. In this case, the Redemption Amount will be less than the principal amount of the notes, and may be zero.

The relevant pricing supplement will specify the Monitoring Method applicable to each Reference Index, and will specify Intra-Day Monitoring, Close of Trading Day Monitoring, or another method for monitoring each Reference Index. For example, the relevant pricing supplement may specify weekly Reference Index monitoring for purposes of determining whether the level of a Reference Index has decreased to a level below the applicable Barrier Level. The relevant pricing supplement may specify the same Monitoring Method, or different Monitoring Methods, as to different Reference Indices.

Lesser Performing Reference Index: The Reference Index which has the lowest Percentage Change. The Percentage Change of each Reference Index, expressed as a percentage, is calculated as follows:

Redemption Amount: Unless otherwise specified in the relevant pricing supplement, the Redemption Amount per \$1,000 principal amount of the notes, if payable, will equal the sum of (i) the principal amount and (ii) the product of the principal amount and the Percentage Change of the Lesser Performing Reference Index.

Automatic Call Provisions: If the Automatic Call feature is specified in the relevant pricing supplement as being “Applicable,” then the following provisions will apply to the notes:

Automatic Call: If, on any call date that may be specified in the applicable pricing supplement, the closing level of the applicable Reference Index is greater than or equal to the Call Level, then the notes will be automatically called.

Payment if Called: If the notes are automatically called, then, on the Call Settlement Date, for each \$1,000 principal amount, you will receive \$1,000 plus any accrued and unpaid interest to but excluding the Call Settlement Date.

Call Level: As specified in the relevant pricing supplement.

Call Date(s): The date on which the closing level of the applicable Reference Index is greater than or equal to the Call Level.

Call Settlement Date: Unless otherwise specified in the relevant pricing supplement, the third business day after the Call Date.

Initial Levels: As specified for each Reference Index in the relevant pricing supplement.

Final Levels: Unless otherwise specified in the relevant pricing supplement, the closing level of the applicable Reference Index on the valuation date or the arithmetic average of the closing levels of that Reference Index on each of more than one valuation dates, or any other dates specified in the relevant pricing supplement, subject to extension for market disruption events as described below.

Barrier Level: As specified in the relevant pricing supplement. For example, the relevant pricing supplement may specify that the Barrier Level of a Reference Index is equal to 80% of its Initial Level. Each Reference Index may have a Barrier Level that is set to the same percentage of its Initial Level, or that is set to a different percentage.

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Valuation Date(s):	The Final Level of each Reference Index will be determined on one or more valuation dates, as specified in the relevant pricing supplement. Unless otherwise specified in the relevant pricing supplement, the valuation date (if there is one valuation date) or the final valuation date (if there is more than one valuation date) for each Reference Index will be the third trading day prior to the maturity date, subject to extension for up to ten trading days if a market disruption event occurs.
Maturity Date:	As specified in the relevant pricing supplement, subject to any prior Automatic Call, if applicable.
Record Dates:	Unless otherwise specified in the relevant pricing supplement, five business days before each Interest Payment Date.
Clearance and Settlement:	DTC global (including through its indirect participants Euroclear and Clearstream, Luxembourg, as described under “Description of Debt Securities—Ownership and Book-Entry Issuance” in the accompanying prospectus).
Listing:	The notes will not be listed on any securities exchange or quotation system.
Calculation Agent:	RBC Capital Markets, LLC.

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## ADDITIONAL RISK FACTORS SPECIFIC TO YOUR NOTES

An investment in your notes is subject to the risks described below, as well as the risks described under “Risk Factors” in the prospectus and the prospectus supplement. Your notes are not secured debt and are riskier than ordinary unsecured debt securities. Also, investing in your notes is not equivalent to investing directly in the applicable Reference Indices. You should carefully consider whether the notes are suited to your particular circumstances. This product prospectus supplement should be read together with the prospectus, the prospectus supplement and the relevant pricing supplement. The information in the prospectus and the prospectus supplement is supplemented by, and to the extent inconsistent therewith replaced and superseded by, the information in this product prospectus supplement and the relevant pricing supplement. This section describes the most significant risks relating to the terms of the notes. We urge you to read the following information about these risks, together with the other information in this product prospectus supplement and the prospectus, the prospectus supplement and the relevant pricing supplement, before investing in the notes.

### Risks Relating to the Terms of the Notes

#### Your Investment in the Notes May Result in a Loss.

Unless otherwise set forth in the relevant pricing supplement, the notes do not guarantee any return of principal. You will only receive the principal amount of the notes at maturity (a) if the Final Level of each Reference Index is greater than or equal to its respective Initial Level, or (b) if the Final Level of one or more Reference Indices is less than its respective Initial Level, the level of each Reference Index did not decrease to a level or a closing level (as applicable) below the applicable Barrier Level during the relevant Monitoring Period. If the Final Level of one or more Reference Indices is less than its respective Initial Level, and during the relevant Monitoring Period, either the level or the closing level (as applicable) of one or more Reference Indices decreased below the applicable Barrier Level, you will receive at maturity a Redemption Amount based on Percentage Change of the Lesser Performing Reference Index. In this case, the Redemption Amount will be less than the principal amount of your notes, and may be zero.

Accordingly, you may lose the entire principal amount of your notes.

#### Your Payment at Maturity May Be Determined Solely by Reference to the Lesser Performing Reference Index Even if the Other Reference Indices Perform Better.

If one or more of the Reference Indices has a level or closing level (as applicable) during the Monitoring Period that is less than the applicable Barrier Level, your payment at maturity will be determined by reference to the performance of the Lesser Performing Reference Index. Even if the levels of the other Reference Indices have increased compared to their Initial Levels, or have experienced a decrease that is less than that of the Lesser Performing Reference Index, your return will only be determined by reference to the performance of the Lesser Performing Reference Index. If one or more of the Reference Indices decreases to a level or a closing level (as applicable) during the Monitoring Period that is less than the applicable Barrier Level, the performance of the Lesser Performing Reference Index will determine the return on your notes, even if the Lesser Performing Reference Index did not decrease to a level or closing level (as applicable) that is less than its Barrier Level.

#### You Will Not Benefit from Any Increase in the Level of Any Reference Index Above Its Initial Level, and You Will Not Receive a Payment at Maturity or upon an Automatic Call with a Value Greater than Your Principal Amount, Plus Accrued and Unpaid Interest.

At maturity or upon an Automatic Call, you will receive no more than the principal amount of your notes plus accrued and unpaid interest. The total of the payments that you receive over the term of the notes will not exceed the principal amount of your notes plus interest. Even if the Final Level of one or more Reference Indices exceeds the applicable Initial Level, you will receive only the principal amount of the notes, despite the increase in the levels of the applicable Reference Indices.

**Your Yield May Be Lower Than the Yield on a Standard Debt Security of Comparable Maturity.**

The yield that you will receive on your notes, which could be negative, may be less than the return you could earn on other investments.

**There May Not Be an Active Trading Market for the Notes—Sales in the Secondary Market May Result in Significant Losses.**

There may be little or no secondary market for the notes. The notes will not be listed on any securities exchange. RBC Capital Markets, LLC and other affiliates of Royal Bank may make a market for the notes; however, they are not required to do so. RBC Capital Markets, LLC or any other affiliate of Royal Bank may cease any market-making activities at any time. Even if a secondary market for the notes develops, it may not provide significant liquidity or trade at prices advantageous to you. We expect that transaction costs in any secondary market would be high. As a result, the difference between bid and asked prices for your notes in any secondary market could be substantial. If you sell your notes 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.

**Your Notes May Be Subject to Automatic Early Redemption.**

Depending upon their terms, your notes may be automatically redeemable if the level of one or more of the Reference Indices reaches a specified level. If we redeem your notes, depending on the market conditions at the time of redemption, you may not be able to reinvest the redemption proceeds in a security with a comparable return.

**Owning the Notes Is Not the Same as Owning the Components Included in or Represented by the Reference Indices or a Security Directly Linked to the Performance of the Reference Indices or Their Components.**

The return on your notes will not reflect the return you would realize if you actually owned the components included in or represented by the Reference Indices or a security directly linked to the performance of the Reference Indices or their underlying components and held that investment for a similar period because:

- the maximum return on your notes will be limited to the payment of the principal amount, plus accrued and unpaid interest;

- your notes may be subject to automatic redemption if the level of one or more of the Reference Indices reaches the level set forth in the relevant pricing supplement; and

- any Reference Index that measures the performance of equity securities may be calculated in part by reference to the prices of the applicable component stocks, without taking into consideration the value of any dividends paid on those stocks.

Your notes may trade quite differently from the Reference Indices or their components. Changes in the levels of any of the Reference Indices may not result in comparable changes in the market value of your notes. Even if the level of one or more of the Reference Indices increases from the applicable Initial Level during the term of the notes, the market value of the notes prior to maturity may not increase to the same extent. It is also possible for the market value of the notes prior to maturity to decrease while the level of one or more of the Reference Indices increases.

In addition, in certain instances, a Reference Index may include one or more components that are traded in a non-U.S. currency, such as the euro or the Japanese yen. In such instances, if the value of that currency increases against the U.S. dollar during the term of your notes, you may not obtain the benefit of that increase, which you would have received if you had owned the applicable components included in that Reference Index.



The Market Value of Your Notes May Be Influenced by Many Unpredictable Factors.

The following factors, which are beyond our control, may influence the market value of your notes:

· the level of each Reference Index, including whether the level is near or below the applicable Barrier Level during the applicable Monitoring Period;

· the likelihood of an Automatic Call, if your notes are subject to an Automatic Call;

· the volatility (i.e., the frequency and magnitude of changes) of the level of each Reference Index;

· the proximity in time to the next interest payment;

· the dividend rate on the components included in or represented by any Reference Index that is an equity index; economic, financial, political, military, regulatory, legal and other events that affect the applicable securities or

· commodities markets generally and the U.S markets in particular, and which may affect the levels of the Reference Indices;

· if the Reference Indices measure securities, commodities or other assets that have returns that are calculated based upon currencies other than the U.S. dollar or prices in one or more non-U.S. markets (a “non-U.S. Reference Index”), changes in, and the volatility of, the exchange rates between the U.S. dollar and the relevant non-U.S. currency or currencies could have a negative impact on the payments due on your notes and their market value;

· interest and yield rates in the market; and

· the time remaining to maturity of the notes.

These factors may influence the market value of your notes if you sell your notes before maturity. Our creditworthiness, as represented by our credit ratings or as otherwise perceived in the market will also affect the market value of your notes. If you sell your notes prior to maturity, you may receive less than the principal amount of your notes.

Payments on the Notes Are Subject to Our Credit Risk, and Changes in Our Credit Ratings Are Expected to Affect the Market Value of the Notes.

The notes are Royal Bank’s senior unsecured debt securities. As a result, your receipt of interest payments and the amount due on the maturity date is dependent upon Royal Bank’s ability to repay its obligations at that time. This will be the case even if the levels of the Reference Indices increase after the pricing date. No assurance can be given as to what our financial condition will be at any time during the term of the notes.

The Market Value of Your Notes May Decrease at an Accelerated Rate as the Level of a Reference Index Approaches and Decreases Below Its Barrier Level.

When the level of one or more Reference Indices on any trading day decreases from its respective Initial Level to a level near the applicable Barrier Level for the first time, the market value of the notes may decrease at a greater rate than the level of that Reference Index. If the level of a Reference Index reaches (in the case of Intra-Day monitoring) or closes at (in the case of Close of Trading Day) levels that are near or below the Barrier Level, we expect that the market value of the notes will decrease, to reflect the fact that you may receive at maturity a Redemption Amount that is less than the principal amount of your notes. All other factors remaining constant, the longer the Monitoring Period is for each Reference Index to which your notes are linked, the more likely it will be that the level of one or more of those Reference Indices will reach or close at (as applicable) a level that is less than the applicable Barrier Level.

The Amount to Be Paid at Maturity Will Not Be Affected by All Developments Relating to the Reference Indices. Changes in the level of any Reference Index during the term of the notes before the valuation date or valuation dates will not be reflected in the calculation of the payment at maturity, except to the extent that the level of any Reference Index falls or closes (as applicable) below its Barrier Level during the Monitoring Period, or to the extent that the notes are subject to an Automatic Call. The calculation agent will calculate the amount to be paid at maturity by comparing the Final Level of any applicable Reference Index to its Initial Level. As a result, you may receive a payment at maturity that is less than the principal amount of your notes, even if the level of the applicable Reference Index has increased at certain times during the term of the notes before decreasing to a level below its Initial Level. We Will Not Hold Any Assets Comprising the Reference Indices for Your Benefit.

The indenture and the terms governing your notes do not contain any restriction on our ability or the ability of any of our affiliates to sell, pledge or otherwise convey all or any components included in or represented by the Reference Indices that we or they may acquire. Neither we nor our affiliates will pledge or otherwise hold any such assets for your benefit. Consequently, in the event of our bankruptcy, insolvency or liquidation, any of those assets that we own will be subject to the claims of our creditors generally and will not be available for your benefit specifically.

Correlation Among the Components Comprising the Reference Indices May Reduce the Value of Your Notes.

The components comprising the Reference Indices may not represent a diversified portfolio of assets. To the extent that the components comprising the Reference Indices all move in the same direction (i.e., are highly correlated), you will lose some or all of the benefits that would ordinarily arise from a more diversified portfolio of assets.

You Must Rely on Your Own Evaluation of the Merits of an Investment Linked to the Reference Indices.

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

Changes That Affect a Reference Index Will Affect the Market Value of the Notes and the Amount You Will Receive at Maturity.

The policies of a sponsor of any Reference Index (each, an “Index Sponsor”) concerning the calculation of that index, additions, deletions or substitutions of the components of that index and the manner in which changes affecting those components (such as, in the case of equity indices, stock dividends, reorganizations or mergers), may be reflected in the index and, therefore, could affect the amount payable at the notes at maturity, and the market value of the notes prior at maturity. The amount payable on the notes and their market value could be affected if an Index Sponsor changes these policies, for example, by changing the manner in which it calculates the applicable Reference Index, or if an Index Sponsor discontinues or suspends calculation or publication of the applicable Reference Index, in which case it may become difficult to determine the market value of the notes. If events such as these occur, or if the level of a Reference Index is not available on the valuation date or dates because of a market disruption event or for any other reason and no successor index is selected, the calculation agent may determine the level of that index—and thus the amount payable at maturity—in a manner it considers appropriate, in its sole discretion.

The Return on the Notes Will Be Exposed to Fluctuations in Exchange Rates That Might Affect the Levels of the Reference Indices and the Payment at Maturity.

Because the securities, commodities or other assets included in one or more Reference Indices may be traded in currencies other than U.S. dollars, and the notes are denominated in U.S. dollars, the amount payable on the notes at maturity may be exposed to fluctuations in the exchange rate between the U.S. dollar and each of the currencies in which those assets are denominated. These changes in exchange rates may reflect changes in various non-U.S. economies that in turn may affect the payment on the notes at maturity. An investor's net exposure will depend on the extent to which the currencies in which the relevant assets are denominated either strengthen or weaken against the U.S. dollar and the relative weight of each asset. If, taking into account such weighting, the U.S. dollar strengthens against the currencies in which the relevant assets are denominated, the value of those assets may be adversely affected and the level of the applicable Reference Index may be adversely affected as well. In turn, the payment at maturity may be adversely affected.

Trading and Other Transactions by Royal Bank or its Affiliates Relating to a Reference Index or its Components, Futures, Options, Exchange-Traded Funds or Other Derivative Products May Adversely Affect the Market Value of the Notes.

As described below under "Use of Proceeds and Hedging," we or one or more affiliates may hedge our obligations under the notes by purchasing or selling any components comprising a Reference Index, futures or options relating to a Reference Index or its components, or exchange-traded funds or other derivative instruments with returns linked or related to changes in the performance of a Reference Index or its components. We or our affiliates may adjust these hedges by, among other things, purchasing or selling those assets at any time. Although they are not expected to, any of these hedging activities may adversely affect the level or value of a Reference Index or its components, and, therefore, the market value of the notes. It is possible that we or one or more of our affiliates could receive substantial returns from these hedging activities while the market value of the notes decreases.

We or one or more of our affiliates may also engage in trading relating to a Reference Index or its components and other investments relating to those assets on a regular basis as part of our general broker-dealer and other businesses, for proprietary accounts, for other accounts under management or to facilitate transactions for customers, including block transactions. Any of these activities could adversely affect the level or value of one or more Reference Indices or their components and, therefore, the market value of the notes. We or one or more of our affiliates may also issue or underwrite other securities or financial or derivative instruments with returns linked or related to changes in the performance of one or more Reference Indices or their components. By introducing competing products into the marketplace in this manner, we or one or more of our affiliates could adversely affect the market value of the notes.

The Inclusion in the Purchase Price of the Notes of a Selling Concession and of Our Cost of Hedging Our Market Risk under the Notes is Likely to Adversely Affect the Market Value of the Notes.

The price at which you purchase the notes includes a selling concession (including a broker's commission), as well as the costs that we (or one of our affiliates) expect to incur in the hedging of our market risk under the notes. The hedging costs include the expected cost of undertaking this hedge, as well as the profit that we (or our affiliates) expect to realize in consideration for assuming the risks inherent in providing the hedge. As a result, assuming no change in market conditions or any other relevant factors, the price, if any, at which you may be able to sell your notes prior to maturity will likely be less than your original purchase price. We expect that this effect will be greater if it occurs earlier in the term of the notes than if it occurs later in the term of the notes.

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 pricing supplement, no Index Sponsor is an affiliate of ours or will be involved in any offering of the notes in any way. Consequently, we have no control of the actions of any Index Sponsor, including any actions of the type that would require the calculation agent to adjust the payment to you at maturity. No Index Sponsor has any obligation with respect to the notes. 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 notes. None of our proceeds from any issuance of the notes will be delivered to any Index Sponsor, except to the extent that we are required to pay an Index Sponsor licensing fees with respect to a Reference Index. The Business Activities of Royal Bank or Its Affiliates May Create Conflicts of Interest.

As noted above, we and our affiliates expect to engage in trading activities related to one or more of the Reference Indices or their components that are not for the account of holders of the notes or on their behalf. These trading activities may present a conflict between the holders' interests in the notes and the interests we and our affiliates will have in their proprietary accounts, in facilitating transactions, including options and other derivatives transactions, for their customers and in accounts under their management. These trading activities, if they influence the level or value of a Reference Index or its components, could be adverse to the interests of the holders of the notes. We and one or more of our affiliates may, at present or in the future, engage in business with the issuers of component stocks included in a Reference Index, including making loans to or providing advisory services to those companies. These services could include investment banking and merger and acquisition advisory services. These activities may present a conflict between our or one or more of our affiliates' obligations and your interests as a holder of the notes.

Moreover, we and our affiliates may have published, and in the future expect to publish, research reports that relate to the Reference Indices or their components. This research is modified from time to time without notice and may express opinions or provide recommendations that are inconsistent with purchasing or holding the notes. Any of these activities by us or one or more of our affiliates may affect the level or value of one or more of the Reference Indices or its components and, therefore, the market value of the notes.

The Calculation Agent Can Postpone the Determination of the Final Level if a Market Disruption Event Occurs.

The determination of the Final Level of each of the Reference Indices may be postponed if the calculation agent determines that a market disruption event has occurred or is continuing on a valuation date. If such a postponement occurs, the calculation agent will use the closing level of the affected Reference Index on the first subsequent trading day on which no market disruption event occurs or is continuing. In no event, however, will any valuation date be postponed by more than ten trading days. As a result, if a market disruption event occurs or is continuing on a valuation date, the maturity date for the notes could also be postponed, although not by more than ten trading days. If the determination of the level of a Reference Index for any valuation date is postponed to the last possible day, but a market disruption event occurs or is continuing on that day, that day will nevertheless be the date on which the level of the applicable Reference Index will be determined by the calculation agent. In such an event, the calculation agent will make a good faith estimate in its sole discretion of the level that would have prevailed in the absence of the market disruption event. See "General Terms of the Notes—Consequences of Market Disruption Events."

There Are Potential Conflicts of Interest Between You and the Calculation Agent.

The calculation agent will, among other things, determine the amount of your payment at maturity on the notes. Our wholly-owned subsidiary, RBC Capital Markets, LLC, will serve as the calculation agent. We may change the calculation agent after the original issue date without notice to you. The calculation agent will exercise its judgment when performing its functions. For example, the calculation agent may have to determine whether a market disruption event affecting a Reference Index has occurred. This determination may, in turn, depend on the calculation agent's judgment whether the event has materially interfered with our ability or the ability of one of our affiliates to unwind our hedge positions. Since this determination by the calculation agent will affect the payment at maturity on the notes, the calculation agent may have a conflict of interest if it needs to make a determination of this kind.

The Historical Performance of the Reference Indices or Their Components Should Not Be Taken as an Indication of Their Future Performance.

The Final Levels of the Reference Indices will determine the amount to be paid on the notes at maturity. The historical performance of the Reference Indices or their components does not necessarily give an indication of their future performance. As a result, it is impossible to predict whether the levels of the Reference Indices will rise or fall during the term of the notes. The levels and values of the Reference Indices and their components will be influenced by complex and interrelated political, economic, financial and other factors.

Non-U.S. Investors May Be Subject to Certain Additional Risks.

The notes will be denominated in U.S. dollars. If you are a non-U.S. investor who purchases the notes with a currency other than U.S. dollars, changes in rates of exchange may have an adverse effect on the value, price or returns of your investment.

This product prospectus supplement contains a general description of certain U.S. considerations relating to the notes. In the event you are a non-U.S. investor and acquire the notes in the secondary market, 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 notes and receiving the payments that might be due under the notes.

Significant Aspects of the Tax Treatment of an Investment in the Notes Are Uncertain.

The tax treatment of an investment in the notes is uncertain. We do not plan to request a ruling from the Internal Revenue Service or from any Canadian authorities regarding the tax treatment of an investment in the notes, 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.

The Internal Revenue Service has released a notice that may affect the taxation of holders of “prepaid forward contracts” and similar instruments. According to the notice, the Internal Revenue Service and the U.S. Treasury Department are actively considering whether the holder of such instruments should be required to accrue ordinary income on a current basis. While it is not clear whether the notes would be viewed as similar to such instruments, it is possible that any future guidance could materially and adversely affect the tax consequences of an investment in the notes, possibly with retroactive effect.

Please read carefully the sections 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 notes, 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 notes in the secondary market, you should consult your tax advisors as to the consequences of acquiring, holding and disposing of the notes and receiving the payments that might be due under the notes.

A 30% U.S. Federal Withholding Tax Will Be Withheld on Interest Payments to Non-U.S. Holders.

While the U.S. federal income tax treatment of the notes is uncertain, U.S. federal income tax at a 30% rate (or at a lower rate under an applicable income tax treaty) will be withheld in respect of the interest payments made to a non-U.S. holder (as defined below) unless such payments are effectively connected with the conduct by the non-U.S. holder of a trade or business in the United States (in which case, to avoid withholding, the non-U.S. holder will be required to provide a Form W-8ECI). We will not pay any additional amounts in respect of such withholding.

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

#### Certain Considerations for Insurance Companies and Employee Benefit Plans.

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

#### Risks Relating to Reference Indices That Are Equity Indices

**You Will Not Have Any Shareholder Rights and Will Have No Right to Receive any Shares of the Stocks Included in a Reference Index at Maturity.**

Investing in your notes will not make you a holder of any of the constituent stocks of any Reference Index. Neither you nor any other holder or owner of the notes will have any voting rights, any right to receive dividends or other distributions or any other rights with respect to any of these securities.

#### An Investment in the Notes May Be Subject to Risks Associated with Non-U.S. Securities Markets.

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

Securities prices 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.

**We Do Not Control Any Company Included in a Reference Index and Are Not Responsible for Any Disclosure Made by Any Other Company.**

Neither we nor any of our affiliates have the ability to control the actions of any of the companies included in a Reference Index, nor do we assume any responsibility for the adequacy or accuracy of any publicly available information about any of these companies, unless (and only to the extent that) our securities or the securities of our

affiliates are represented by that Reference Index. You should make your own investigation into the companies represented by the Reference Indices.

#### Risks Relating to Reference Indices That Are Commodity Indices

##### You Will Not Own the Underlying Commodities.

Investing in the notes not the same as owning the commodities or futures contracts relating to those commodities included in or represented by the Reference Indices. You will not have a right to receive delivery of any of the commodities or futures contracts relating to those commodities included in or represented by the Reference Indices. We will not invest in any of these commodities or futures contracts relating to these commodities on behalf or for the benefit of holders of the notes.

##### The Reference Indices May Include Indices That Track Commodity Futures Contracts and Do Not Track the Spot Prices for the Underlying Commodities.

The Reference Indices may include indices comprised of exchange-traded futures contracts on physical commodities. Unlike equities, which typically entitle the holder to a continuing stake in a corporation, a commodity futures contract is typically an agreement to buy a set amount of an underlying physical commodity at a predetermined price during a stated delivery period. A futures contract reflects the expected value of the underlying physical commodity upon delivery in the future. In contrast, the underlying physical commodity's current or "spot" price reflects the immediate delivery value of that commodity.

The notes are linked to the Reference Indices and not to the spot prices of the commodities underlying those indices and an investment in the notes is not the same as buying and holding the underlying commodities. While price movements in the exchange-traded futures contracts comprising the Reference Indices may correlate with changes in the underlying commodities' spot prices, the correlation will not be perfect and price movements in the spot markets for the underlying commodities may not be reflected in the futures market (and vice versa). Accordingly, an increase in the spot prices of the underlying commodities may not result in an increase in the levels of the Reference Indices. The levels of the Reference Indices may decrease while the spot prices of the underlying commodities remain stable or increase, or do not decrease to the same extent.

##### Higher Future Prices of Futures Contracts Included in a Reference Index Relative to Their Current Prices May Decrease the Payment at Maturity and the Value of the Notes.

In the case of a Reference Index comprised of futures contracts, as these contracts approach expiration, they are replaced by similar contracts that have a later expiration. This process is referred to as "rolling." Specifically, during the specified "roll period," the level of the Reference Index is calculated as if the near-dated futures contracts are sold and the proceeds from those sales are used to purchase longer-dated futures contracts of equivalent value. Differences in the prices of the contracts that are sold and the new contracts for more distant delivery that are purchased are called "roll yield."

If the market for these futures contracts is (putting aside other considerations) in "backwardation," where the prices for the exchange-traded futures contracts are lower in the distant delivery months than in the nearer delivery months, the sale of the near-dated contracts would take place at prices that are higher than the purchase prices of the longer-dated contracts, creating positive "roll yield." This would result in a greater quantity of longer-dated futures contracts being purchased for the same value. There is no indication that the markets for the commodities underlying any Reference Index will consistently be in backwardation or that there will be positive roll yield in the future performance of any Reference Index. Instead, the markets for the underlying commodities may trade in "contango." Contango markets are those in which the prices for the futures contracts are higher in the distant delivery months than in the nearer delivery months. In this case, the sale of the near-dated contracts would take place at prices that are lower than the purchase prices of the longer-dated contracts, creating negative roll yield and resulting in a smaller quantity of longer-dated futures contracts being purchased for the same value. The commodities underlying the Reference Indices may have historically traded in contango markets. Holding other factors constant, the presence of contango in the markets for the underlying commodities could result in negative

roll yield, which could decrease the levels of the Reference Index, the payment at maturity and the value of the notes. Commodities Prices Are Highly Volatile Due to Unpredictable Factors That Affect Supply and Demand.

Several factors, many of which are beyond our control, may influence the market value of the notes. Factors that may affect supply and demand of the underlying commodities or futures contracts comprising a Reference Index and, thus, the market value of the notes include (but are not limited to):

- political events;
- weather;
- agriculture;
- disease;
- labor activity;
- technological developments;
- direct government activity (such as embargoes); and
- other supply disruptions in major producing or consuming regions of the applicable commodity.

These factors may adversely affect the performance of the Reference Index or its underlying commodities or futures contracts and the market value of the notes. The market value of the notes will also be affected by, among other things:

- the trading prices of the applicable commodities;
- the trading prices of the applicable commodities futures; and
- the volatility of the applicable commodities and commodities futures (including the frequency and magnitude of price increases and decreases in those commodities or commodities futures).

Suspension or Disruptions of Market Trading in the Commodity and Related Futures Markets May Adversely Affect the Value of the Notes.

The commodity markets are subject to temporary distortions or other disruptions due to various factors, including the lack of liquidity in the markets, the participation of speculators and government regulation and intervention. Certain exchanges have regulations which limit the amount of fluctuations in futures contracts that may occur during a single trading day. These limits are generally referred to as “daily price fluctuation limits,” and the maximum or minimum price of a futures contract on any given day as a result of these limits is referred to as a “limit price.” Once the limit price has been reached in a particular futures contract, no trades may be made at a different price. Limit prices may have the effect of precluding trading in a particular futures contract or forcing the liquidation of futures contracts at disadvantageous times or prices. These circumstances could affect the level or value of a Reference Index or its underlying commodities or futures contracts and could therefore adversely affect the market value of the notes.



Indices Based in Part on Underlying Commodities That Trade on Foreign Exchanges May Be Subject to Additional Market Risks.

The regulations of the U.S. Commodity Futures Trading Commission (the “CFTC”) do not apply to trading on foreign exchanges, and trading on foreign exchanges may involve different and greater risks than trading on U.S. exchanges. Certain foreign markets may be more susceptible to disruption than U.S. exchanges due to the lack of a government-regulated clearinghouse system. Trading on foreign exchanges also involves certain other risks that are not applicable to trading on U.S. exchanges. Those risks include (but are not limited to):

- varying exchange rates;
  - varying quoting conventions or contract specifications on different exchanges;
- exchange controls;
- expropriation;
- burdensome or confiscatory taxation;
- moratoriums; and
- political or diplomatic events.

It may also be more costly and difficult for participants in those markets to enforce the laws or regulations of a foreign country or exchange, and it is possible that the foreign country or exchange may not have laws or regulations which adequately protect the rights and interests of investors in the applicable commodities.

The Notes Will Not Be Regulated by the U.S. Commodity Futures Trading Commission.

Unlike a direct investment in futures contracts related to the applicable commodities, your investment in the notes does not afford you the benefits of the regulatory protections of the CFTC. Although RBC Capital Markets, LLC is registered with the CFTC as a futures merchant, you will not benefit from the CFTC’s or any other non-U.S. regulators’ regulatory protections that are afforded to persons who trade in futures contracts through a registered futures merchant or operator.

Unlike an investment in notes linked to the performance of one or more commodities, an investment in a collective investment vehicle that invests in futures contracts on behalf of its participants may be regulated as a commodity pool and its operator may be required to be registered with and regulated by the CFTC as a “commodity pool operator” (a “CPO”). Because the notes will not be interests in a commodity pool, they will not be regulated by the CFTC as a commodity pool, we will not be registered with the CFTC as a CPO and you will not benefit from the CFTC’s or any non-U.S. regulatory authority’s regulatory protections afforded to persons who trade in futures contracts or who invest in regulated commodity pools.

An Investment in the Notes May Be Subject to Risks Associated with the Trading of Commodities on the London Metals Exchange (the "LME").

The market prices of some commodities underlying a Reference Index may be determined by reference to the settlement prices of futures contracts traded on the LME. The LME is a principals' market which operates in a manner more closely analogous to the over-the-counter physical commodity markets than the futures markets, and certain features of U.S. futures markets are not present in the context of LME trading. For example, there are no daily price limits on the LME, which would otherwise restrict the extent of daily fluctuations in the prices of LME contracts. In a declining market, therefore, it is possible that prices would continue to decline without limitation within a trading day or over a period of trading days. In addition, a contract may be entered into on the LME calling for delivery on any day from one day to three months following the date of such contract and for monthly delivery in any of the next 16 to 24 months (depending on the commodity) following such third month, in contrast to trading on futures exchanges, which call for delivery in stated delivery months. As a result, there may be a greater risk of a concentration of positions in LME contracts on particular delivery dates, which in turn could cause temporary aberrations in the prices of LME contracts for certain delivery dates. If such aberrations are occurring on a valuation date, the prices of the contracts used to determine the level or value of a Reference Index or its underlying commodities could be affected in a manner that adversely affects the payment at maturity.

**Other Risk Factors Relating to the Reference Indices**

The relevant pricing supplement may set forth additional risk factors as to the Reference Indices that you should review prior to purchasing the notes.

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## GENERAL TERMS OF THE NOTES

Please note that in this section entitled “General Terms of the Notes,” references to “holders” mean those who own notes registered in their own names, on the books that we or the trustee maintain for this purpose, and not those who own beneficial interests in notes registered in street name or in notes issued in book-entry form through The Depository Trust Company (“DTC”) or another depository. Owners of beneficial interests in the notes should read the section entitled “Description of the Notes We May Offer—Legal Ownership” in the accompanying prospectus supplement and “Description of Debt Securities—Ownership and Book-Entry Issuance” in the accompanying prospectus.

In addition to the terms described in the “Summary” section above, the following general terms will apply to the notes, including your notes:

### Specified Currency

Unless otherwise specified in the relevant pricing supplement, all payments of principal and interest will be made in U.S. dollars (“\$”).

### Form and Denomination

The notes will be issued only in global form through DTC. Unless otherwise specified in the relevant pricing supplement, the denomination of each note will be \$1,000 and integral multiples in excess of \$1,000.

### No Listing

Your notes will not be listed on any securities exchange.

### Defeasance, Default Amount, Other Terms

Neither full defeasance nor covenant defeasance will apply to your notes. The following will apply to your notes:

the default amount will be payable on any acceleration of the maturity of your notes as described under “—Default Amount on Acceleration” below;

a business day for your notes will have the meaning described under “—Special Calculation Provisions—Business Day” below; and

a trading day for your notes will have the meaning described under “—Special Calculation Provisions—Trading Day” below.

Please note that the information about the settlement or pricing date, issue date, issue price discounts or commissions and net proceeds to Royal Bank in the relevant pricing supplement relates only to the initial issuance and sale of your notes. If you have purchased your notes in a market-making transaction after the initial issuance and sale, any such relevant information about the sale to you will be provided in a separate confirmation of sale.

### Reference Indices

In this product prospectus supplement, when we refer to a Reference Index, we mean the applicable Reference Index specified in the relevant pricing supplement, and when we refer to an Index Sponsor, we mean the applicable sponsor of the applicable Reference Index.

#### Automatic Call

If the Automatic Call feature is specified in the relevant pricing supplement as being “Applicable,” and on any call date specified in the applicable pricing supplement, the closing level of the applicable Reference Index is greater than or equal to the Call Level, then the notes will be automatically called. Any Automatic Call is subject to the provisions described below.

#### Payment at Maturity

At maturity, you will receive \$1,000 for each \$1,000 in principal amount of the notes, plus any accrued and unpaid interest unless, as determined by the calculation agent,

(i) the Final Level of any Reference Index is less than its Initial Level and

(ii) in the case of any Reference Index to which your notes are linked,

for Reference Indices subject to Intra-Day Monitoring:

Ø at any time during the Monitoring Period, the level of a Reference Index is less than the Barrier Level, or

for Reference Indices subject to Close of Day Monitoring:

Ø on any day during the Monitoring Period, the closing level of a Reference Index is less than the Barrier Level.

Alternatively, if the applicable Reference Index is monitored by a different method, that method will be specified in the relevant pricing supplement, as well as the conditions of payment at maturity.

If both of the above mentioned conditions are met, you will receive at maturity, instead of the principal amount of the notes, a cash amount (the “Redemption Amount”), as calculated below, based on the performance of the Lesser Performing Reference Index. You will also receive any accrued and unpaid interest.

The “Lesser Performing Reference Index” will be the Reference Index which has the lowest Percentage Change. The “Percentage Change,” expressed as a percentage, is calculated as follows:

#### Calculating the Redemption Amount

Unless otherwise specified in the relevant pricing supplement, the Redemption Amount for each \$1,000 in principal amount of the notes, if payable, will equal the sum of (i) the principal amount and (ii) the product of the principal amount and the Percentage Change of the Lesser Performing Reference Index.

In this case, the Redemption Amount will be less than the principal amount of your notes, and may be zero.

The “Initial Level” for each Reference Index will be specified in the relevant pricing supplement. Unless otherwise specified in the relevant pricing supplement, the “Final Level” for each Reference Index will be the closing level of the applicable Reference Index on the valuation date, or the arithmetic average of the closing levels of the Reference Indices on each of the valuation dates, or any other dates specified in the relevant pricing supplement, as applicable, subject to market disruption events as described below.

#### Valuation Date

Unless otherwise specified in the relevant pricing supplement, the valuation date (if there is only one valuation date applicable to the notes) or the final valuation date (if there is more than one valuation date applicable to the notes) will be the third trading day before the maturity date specified in the relevant pricing supplement. If the calculation agent determines that a market disruption event occurs or is continuing on any valuation date applicable to the notes, with respect to any Reference Index, its Final Level will be determined as described in “—Consequences of Market Disruption Events” below.

#### Maturity Date

Unless otherwise specified in the relevant pricing supplement, the maturity date will be the third scheduled business day following the valuation date or the final valuation date, as applicable, unless that date is not a business day, in which case the maturity date will be the next following business day. The maturity date will be postponed by the same number of trading days as the valuation date or the final valuation date, as applicable, if a market disruption event occurs or is continuing as described above as to any Reference Index. No interest will accrue past the maturity date specified in the relevant pricing supplement.

#### Unavailability of the Level of a Reference Index

If the applicable Index Sponsor discontinues publication of or otherwise fails to publish any Reference Index and the Index Sponsor or another entity publishes a successor or substitute index that the calculation agent determines, in its sole discretion, to be comparable to the discontinued Reference Index (such successor or substitute index being referred to in this section as a “successor index”), then any subsequent index level will be determined by reference to the published level of that successor index on the relevant date.

Upon any selection by the calculation agent of a successor index, the calculation agent will provide written notice to the trustee of the selection, and the trustee will furnish written notice thereof, to the extent the trustee is required to under the senior debt indenture, to each noteholder, or in the case of global notes, the depositary, as holder of the global notes.

If a successor index is selected by the calculation agent, that successor index will be used as a substitute for the applicable Reference Index for all purposes, including for purposes of determining whether a market disruption event exists with respect to that index.

If any Index Sponsor discontinues publication of or otherwise fails to publish any Reference Index and that discontinuance is continuing during the Monitoring Period or on any valuation date and the calculation agent determines, in its sole discretion, that no successor index is available at that time, then the calculation agent will determine the level of the Reference Index for each relevant date in accordance with the formula for and method of calculating the index last in effect prior to the discontinuance, without rebalancing or substitution, using the level (or, if trading in the relevant underlying components of the index have been materially suspended or materially limited, its good faith estimate of the level that would have prevailed but for that suspension or limitation) at the time of the principal trading session of the relevant exchange or exchanges on that date of each component most recently comprising the index.

If at any time the method of calculating the level for any Reference Index or a successor index is changed in a material respect, or if any Reference Index or successor index is in any other way modified so that that index does not, in the opinion of the calculation agent, fairly represent the level of that index had those changes or modifications not been made, then, from and after that time, the calculation agent will, at the close of business in New York City on the relevant date, make such calculations and adjustments as, in the good faith judgment of the calculation agent, may be necessary in order to arrive at a level of an index comparable to that index as if those changes or modifications had not been made. Accordingly, if the method of calculating any Reference Index or a successor index is modified so that the value of that index is a fraction of what it would have been if it had not been modified (e.g., due to a split in the index), then the calculation agent will adjust the index in order to arrive at a value of that index as if it had not been modified (e.g., as if such split had not occurred).

Notwithstanding these alternative arrangements, discontinuance of the publication of any Reference Index may adversely affect the value of your notes.

#### Consequences of Market Disruption Events

If the calculation agent determines that, on a valuation date and/or, if the Automatic Call feature is specified in the relevant pricing supplement as being “Applicable,” on the Call Date, a market disruption event has occurred or is continuing with respect to a Reference Index, the determination of the Final Level for that affected Reference Index and/or, if applicable, the closing level of that affected Reference Index, may be postponed. If such a postponement occurs, the calculation agent will use the closing level of the affected Reference Index on the first subsequent trading day on which no market disruption event occurs or is continuing. However, in no event will the determination of the Final Level and/or, if applicable, the closing level of the affected Reference Index, be postponed by more than ten trading days.

If the determination of the Final Level and/or, if applicable, the closing level of the affected Reference Index, is postponed to the last possible day, but a market disruption event with respect to that Reference Index occurs or is continuing on that day, that day will be the date on which the Final Level and/or, if applicable, the closing level of the affected Reference Index, will be determined by the calculation agent. In such an event, the calculation agent will make a good faith estimate in its sole discretion of the Final Level for the affected Reference Index and/or, if applicable, the closing level of that affected Reference Index, that would have prevailed in the absence of the market disruption event.

#### Reference Indices That Are Equity Indices

A “market disruption event” with respect to a Reference Index that measures the performance of equity securities means any event, circumstance or cause which Royal Bank determines, and the calculation agent confirms, has or will have a material adverse effect on the ability of Royal Bank to perform its obligations under the notes or to hedge its position in respect of its obligations to make payment of amounts owing thereunder and more specifically includes the following events to the extent that they have such effect with respect to any Reference Index:

- a suspension, absence or limitation of trading in index components constituting 20% or more, by weight, of that index;

- a suspension, absence or limitation of trading in futures or options contracts relating to that index on their respective markets;

- any event that disrupts or impairs, as determined by the calculation agent, the ability of market participants to (i) effect transactions in, or obtain market values for, index components constituting 20% or more, by weight, of that index, or (ii) effect transactions in, or obtain market values for, futures or options contracts relating to that index on their respective markets;

- the closure on any day of the primary market for futures or options contracts relating to that index or index components constituting 20% or more, by weight, of that index on a scheduled trading day prior to the scheduled weekday closing time of that market (without regard to after hours or any other trading outside of the regular trading session hours) unless such earlier closing time is announced by the primary market at least one hour prior to the earlier of (i) the actual closing time for the regular trading session on such primary market on such scheduled trading day for such primary market and (ii) the submission deadline for orders to be entered into the relevant exchange system for execution at the close of trading on such scheduled trading day for such primary market;

- any scheduled trading day on which (i) the primary markets for index components constituting 20% or more, by weight, of that index or (ii) the exchanges or quotation systems, if any, on which futures or options contracts on that index are traded, fails to open for trading during its regular trading session; or

any other event, if the calculation agent determines in its sole discretion that the event interferes with our ability or the ability of any of our affiliates to unwind all or a portion of a hedge with respect to the notes that we or our affiliates have effected or may effect as described below under “Use of Proceeds and Hedging” in this product prospectus supplement.

#### Reference Indices That Are Commodity Indices

A “market disruption event” with respect to a Reference Index that measures the performance of commodities means any event, circumstance or cause which Royal Bank determines, and the calculation agent confirms, has or will have a material adverse effect on the ability of Royal Bank to perform its obligations under the notes or to hedge its position in respect of its obligations to make payment of amounts owing thereunder and more specifically includes the following events to the extent that they have such effect with respect to any Reference Index:

a suspension, absence or material limitation of trading in a material number of the commodities underlying the index for more than two hours or during the one-half hour before the close of trading in that market, as determined by the calculation agent in its sole discretion;

a suspension, absence or material limitation of trading in option or futures contracts relating to the commodities underlying the index, or a material number of the commodities underlying the index, in the primary market for those contracts for more than two hours of trading or during the one-half hour before the close of trading in that market, as determined by the calculation agent in its sole discretion;

one or more of the commodities indices is not published, as determined by the calculation agent in its sole discretion;  
or

any other event, if the calculation agent determines in its sole discretion that the event interferes with our ability or the ability of any of our affiliates to unwind all or a portion of a hedge with respect to the notes that we or our affiliates have effected or may effect as described below under “Use of Proceeds and Hedging” in this product prospectus supplement.

#### Interest Payments

Interest will accrue on the principal amount of your notes and will be calculated and paid as described in the accompanying prospectus with regard to fixed rate notes, as modified by the relevant pricing supplement. The “Interest Payment Dates” will be those specified in the relevant pricing supplement. As long as your notes are in global form, the regular record date for each Interest Payment Date will be the fifth preceding business day, unless otherwise specified in the relevant pricing supplement.

#### Automatic Call

If, on any call date specified in the applicable pricing supplement, the closing level of the applicable Reference Index is greater than or equal to the Call Level, then the notes will be automatically called.

#### Payment if Called

If the notes are automatically called, then, on the Call Settlement Date, for each \$1,000 in principal amount, you will receive \$1,000 plus any accrued and unpaid interest to but excluding the Call Settlement Date.

#### Call Date

The “Call Date” will be the date on which the closing level of the applicable Reference Index is greater than or equal to the Call Level, unless the calculation agent determines that a market disruption event occurs or is continuing on that day. If the calculation agent determines that a market disruption event occurs or is continuing on

a Call Date with respect to any Reference Index, its closing level will be determined as described in “—Consequences of Market Disruption Events” above.

#### Call Settlement Date

Unless otherwise specified in the relevant pricing supplement, the “Call Settlement Date” will be the third business day after the Call Date. The Call Settlement Date will be postponed by the same number of business days as the Call Date, if the Call Date is postponed due to a market disruption event.

#### Call Level

The “Call Level” for each applicable Reference Index will be as specified in the relevant pricing supplement.

#### Payment of Additional Amounts

We will pay any amounts to be paid by us on the notes 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 notes, 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 note or of a right to receive payments in respect thereto (a “Payment Recipient”), which we refer to as an “Excluded Holder,” in respect of any taxes imposed because the beneficial owner or Payment Recipient:

- (i) is someone 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;
  - is subject to such taxes by reason of its being connected presently or formerly with Canada or any province or
- (ii) territory thereof otherwise than by reason of the holder’s activity in connection with purchasing the notes, the holding of notes or the receipt of payments thereunder;
  - is, or does not deal at arm’s length with a person who is, a “specified shareholder” (within the meaning of subsection 18(5) of the Income Tax Act (Canada)) of Royal Bank of Canada (generally a person will be a “specified
- (iii) shareholder” for this purpose if that person, either alone or together with persons with whom the person does not deal at arm’s length, owns 25% or more of (a) our voting shares, or (b) the fair market value of all of our issued and outstanding shares);
  - presents such note for payment (where presentation is required) more than 30 days after the relevant date (except
- (iv) to the extent that the holder thereof would have been entitled to such Additional Amounts on presenting a note for payment on the last day of such 30 day period); for this purpose, the “relevant date” in relation to any payments on any note means:
  - a. the due date for payment thereof, 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 notes in accordance with the senior indenture;



- could lawfully avoid (but has not so avoided) such withholding or deduction by complying, or requiring that any agent comply with, any statutory requirements necessary to establish qualification for an exemption from
- (v) 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
- is subject to deduction or withholding on account of any tax, assessment, or other governmental charge that is imposed or withheld by reason of the application of Section 1471 through 1474 of the United States Internal
- (vi) Revenue Code of 1986, as amended (the “Code”) (or any successor provisions), any regulation, pronouncement, or agreement thereunder, official interpretations thereof, or any law implementing an intergovernmental approach thereto, whether currently in effect or as published and amended from time to time.

For the 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 notes.

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 notes (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 notes, 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 “Supplemental Discussion of Canadian Tax Consequences.”

#### Default Amount on Acceleration

Unless otherwise specified in the relevant pricing supplement, in case an event of default with respect to the notes shall have occurred and be continuing, the amount declared due and payable on the notes upon any acceleration of the notes will be determined by the calculation agent and will be an amount in cash equal to the amount payable 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 notes is accelerated because of an event of default, 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 the depository, of the amount due with respect to the notes as promptly as possible and in no event later than two business days after the date of acceleration.

#### Manner of Payment

Any payment on the notes at maturity will be made to accounts designated by you and approved by us, or at the office of the trustee in New York City, but only when the notes are surrendered to the trustee at that office. We also may make any payment in accordance with the applicable procedures of the depository.

#### Modified Business Day

As described in the accompanying prospectus, any payment on your note that would otherwise be due on a day that is not a business day may instead be paid on the next day that is a business day, with the same effect as if paid on the original due date. For your note, however, the term business day may have a different meaning than it does for other Series H medium-term notes. We discuss this term under “—Special Calculation Provisions” below.

#### Role of Calculation Agent

The calculation agent will make all determinations regarding the Initial Level and the Final Level of each Reference Index, discontinuances and adjustments to any Reference Index, market disruption events, successor indices, business days, trading days, modified business days, the default amount and the amounts payable on your notes. Absent manifest error, all determinations of the calculation agent will be final and binding on you and us, without any liability on the part of the calculation agent.

Our subsidiary, RBC Capital Markets, LLC, is currently serving as the calculation agent for the notes. We may change the calculation agent for your notes at any time and the calculation agent may resign as calculation agent at any time upon 60 days' written notice to Royal Bank.

#### Special Calculation Provisions

##### Business Day

When we refer to a business day with respect to your notes, we mean a day that is a business day of the kind described in the accompanying prospectus, unless otherwise specified in the relevant pricing supplement. If the relevant pricing supplement specifies a different meaning for the term business day, we will use that modified definition in determining each Interest Payment Date as well as the maturity date for your notes, all as described in this product prospectus supplement.

##### Trading Day

When we refer to a trading day with respect to your notes, we mean a day on which the principal trading market for each Reference Index to which your notes are linked is open for trading, unless otherwise specified in the relevant pricing supplement.

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#### HYPOTHETICAL RETURNS ON YOUR NOTES

The relevant pricing supplement may include a table or chart showing hypothetical Redemption Amounts that could be paid on your notes at maturity, based on a range of hypothetical Final Levels and on various key assumptions shown in the relevant pricing supplement.

Any table or chart showing hypothetical payments will be provided for purposes of illustration only. It should not be viewed as an indication or prediction of future investment results. Rather, it is intended merely to illustrate the impact that various hypothetical levels of the Reference Indices on the valuation date(s) could have on the payments to be made on the notes, as calculated in the manner described in the relevant pricing supplement and assuming all other variables remained constant. The hypothetical payments listed in the relevant pricing supplement will be entirely hypothetical. They will be based on levels for the Reference Indices that may not be achieved on the relevant valuation date(s) and on assumptions that may prove to be erroneous.

As calculated in the relevant pricing supplement, the hypothetical payments on your notes at maturity may bear little or no relationship to the actual market value of your notes on that date or at any other time, including any time you might wish to sell your notes. In addition, you should not view the hypothetical payments to be made on the notes as an indication of the possible financial return on an investment in your notes, since the financial return will be affected by various factors, including taxes, that the hypothetical information does not take into account. Moreover, whatever the financial return on your notes might be, it may bear little relation to—and may be much less than—the financial return that you might achieve were you to invest in the Reference Indices or their components directly. Among other things, the financial return on the Reference Indices or their components would not be limited by the principal amount of your notes and an investment in the Reference Indices or their components is likely to have tax consequences that are different from an investment in your notes.

We describe various risk factors that may affect the market value of your notes, and the unpredictable nature of that market value, under “Additional Risk Factors Specific to Your Notes” above.

We cannot predict the levels of the Reference Indices or, therefore, the Final Level or any Redemption Amount for your notes. Moreover, the assumptions we make in connection with any hypothetical information in the relevant pricing supplement may not reflect actual events. Consequently, that information may give little or no indication of any Redemption Amount that may be paid in respect of your notes at maturity, nor should it be viewed as an indication of the financial return on your notes or of how that return might compare to the financial return on an investment directly in the Reference Indices or their components.

#### USE OF PROCEEDS AND HEDGING

We will use the net proceeds we receive from the sale of the notes for the purposes we describe in the accompanying prospectus supplement under “Use of Proceeds.” We or our affiliates may also use those proceeds in transactions intended to hedge our obligations under the notes as described below.

In anticipation of the sale of the notes, we or our affiliates expect to enter into hedging transactions involving purchases of securities, commodities, indices or other assets included in or represented by the Reference Indices and/or listed and/or over-the-counter derivative instruments linked to the Reference Indices prior to or on the pricing date. From time to time, we or our affiliates may enter into additional hedging transactions or unwind those we have entered into. In this regard, we or our affiliates may:

- acquire or dispose of the Reference Indices or their components;
- acquire or dispose of long or short positions in listed or over-the-counter derivative instruments related to the levels or values of the Reference Indices or their components; or
- any combination of the above two.

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

We or our affiliates may close out our or their hedge on or before the valuation date(s). That step may involve sales or purchases of the Reference Indices or their components or over-the-counter derivative instruments linked to those assets.

The hedging activity discussed above may adversely affect the market value of the notes from time to time. See “Additional Risk Factors Specific to Your Notes—Trading and Other Transactions by Royal Bank or its Affiliates Relating to a Reference Index or its Components, Futures, Options, Exchange-Traded Funds or Other Derivative Products May Adversely Affect the Market Value of the Notes” and “—The Business Activities of Royal Bank or Its Affiliates May Create Conflicts of Interest” in this product prospectus supplement for a discussion of these adverse effects.

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**HISTORICAL REFERENCE INDEX LEVEL INFORMATION**

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

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**SUPPLEMENTAL DISCUSSION OF CANADIAN TAX CONSEQUENCES**

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 notes. It does not purport to be a complete analysis of all tax considerations relating to the notes. Prospective purchasers of the notes 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 notes and receiving payments under the notes. 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 note 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, 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 note because it does not take into account the terms of any particular note or the tax consequences of investing in or holding any particular note unless the pricing supplement applicable to your notes indicates that you may rely on the following disclosure and expressly states that you may rely on the opinion of Morrison & Foerster LLP. Any note that you purchase may have terms that would result in a tax treatment that is significantly different from the treatment described below. Consequently, any tax disclosure relevant to any note you may purchase will be set forth only in the pricing supplement relating to your note, and, unless the pricing 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 note. In addition, this tax disclosure assumes the following for all notes issued off of this product prospectus supplement: (i) no issuer of any of the component stocks underlying any particular Reference Index is treated as a “passive foreign investment company” within the meaning of Section 1297 of the Internal Revenue Code of 1986, as amended (the “Code”), or a “United States real property holding corporation” within the meaning of Section 897 of the Code; (ii) interest will be paid at least annually and at equal intervals; (iii) the Interest Payment (as defined in the relevant pricing supplement) will not be below the market rate for non-contingent debt with terms similar to the notes; (iv) there is a significant possibility of a significant loss of principal on an investment in the notes; (v) initial purchasers will acquire the notes for an amount equal to their principal amount; and (vi) there is a reasonable likelihood that the Final Level will be greater than or equal to the Initial Level with respect to all Reference Indices. Moreover, in all cases, you should consult with your own tax advisor concerning the consequences of investing in and holding any particular note you propose to purchase. Further, this discussion does not address the tax consequences applicable to any holders under Section 451(b) of the Code. 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.

You should consult your tax advisor concerning the U.S. federal income tax and other tax consequences of your investment in the notes in your particular circumstances, including the application of state, local or other tax laws and the possible effects of changes in federal or other tax laws.

We intend to treat coupon payments as U.S. source income for U.S. federal income tax purposes.

We will not attempt to ascertain whether any of the component stocks underlying any particular Reference Index would be treated as a “passive foreign investment company” within the meaning of Section 1297 of the Code, or a “U.S. real property holding corporation” within the meaning of Section 897 of the Code. If any of the component stocks underlying any particular Reference Index were so treated, certain adverse U.S. federal income tax consequences could possibly apply to a holder. You should refer to any available information filed with the SEC and other authorities by the issuer of any of the component stocks underlying any particular Reference Index and consult your tax advisor regarding the possible consequences to you in this regard.

NO STATUTORY, JUDICIAL OR ADMINISTRATIVE AUTHORITY DIRECTLY DISCUSSES HOW THE NOTES 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 NOTES 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 NOTES, INCLUDING THE APPLICATION OF STATE, LOCAL OR OTHER TAX LAWS AND THE POSSIBLE EFFECTS OF CHANGES IN FEDERAL OR OTHER TAX LAWS.

The U.S. federal income tax treatment of your investment in the notes will depend on whether (i) the term of your notes will exceed one year, or (ii) the term of your notes will not exceed one year, without regard to the effect of an extension in the event of a market disruption event. Accordingly, we set forth a separate subsection for each of the situations described in the previous sentence.

#### Where the Term of Your Notes Will Exceed One Year

##### General

In the opinion of our counsel, Morrison & Foerster LLP, it would be reasonable to treat your notes as an investment unit consisting of (i) a non-contingent debt instrument issued by us to you (the "Debt Portion") and (ii) a put option with respect to the Reference Indices written by you and purchased by us (the "Put Option"). The balance of this disclosure assumes this treatment is proper and will be respected for U.S. federal income tax purposes.

##### Treatment as an Investment Unit

If your notes are properly treated as an investment unit consisting of a Debt Portion and Put Option, it is likely that the Debt Portion of your notes would be treated as having been issued for the principal amount of the notes (if you are an initial purchaser) and that interest payments on the notes would be treated in part as payments of interest and in part as payments for the Put Option. Amounts treated as interest would be included in income in accordance with your regular method of accounting for interest for U.S. federal income tax purposes. Amounts treated as payment for the Put Option would be deferred and accounted for upon the sale, call or maturity of the notes, as discussed below.

If you were to receive a cash payment of the full principal amount of your notes upon the call or maturity of your notes, such payment would likely be treated as (i) payment in full of the principal amount of the Debt Portion (which would not result in the recognition of gain or loss if you are an initial purchaser of your notes) and (ii) the lapse of the Put Option which would likely result in your recognition of short-term capital gain in an amount equal to the amount paid to you for the Put Option and deferred as described above. If you were to receive a cash payment upon the maturity of your notes (excluding cash received as a coupon) of less than the full principal amount of your notes, such payment would likely be treated as (i) payment in full of the principal amount of the Debt Portion (which would not result in the recognition of gain or loss if you are an initial purchaser of your notes) and (ii) the cash settlement of the Put Option pursuant to which you paid to us an amount equal to the excess of the principal amount of your notes over the amount that you received upon the maturity of your notes (excluding cash received as a coupon) in order to settle the Put Option. If the aggregate amount paid to you for the Put Option and deferred as described above is greater than the amount you are deemed to have paid to us to settle the Put Option, you will likely recognize short-term capital gain in an amount that is equal to such excess. Conversely, if the amount paid to you for the Put Option and deferred as described above is less than the amount you are deemed to have paid to us to settle the Put Option, you will likely recognize short-term capital loss in an amount that is equal to such difference. The deductibility of capital losses is subject to limitations.

Upon the sale of your notes, you would be required to apportion the value of the amount you receive between the Debt Portion and Put Option on the basis of the values thereof on the date of the sale. You would recognize gain or loss with respect to the Debt Portion in an amount equal to the difference between (i) the amount apportioned to the Debt Portion and (ii) your adjusted U.S. federal income tax basis in the Debt Portion (which would generally be equal to the principal amount of your notes if you are an initial purchaser of your notes). Except to the extent attributable to accrued but unpaid interest with respect to the Debt Portion, such gain or loss would be long-term capital gain or loss if your holding period is greater than one year. The amount of cash that you receive



that is apportioned to the Put Option (together with any amount of premium received in respect thereof and deferred as described above) would be treated as short-term capital gain. If the value of the Debt Portion on the date of the sale of your notes is in excess of the amount you receive upon such sale, you would likely be treated as having made a payment (to the purchaser in the case of a sale) equal to the amount of such excess in order to extinguish your rights and obligations under the Put Option. In such a case, you would likely recognize short-term capital gain or loss in an amount equal to the difference between the premium you previously received in respect of the Put Option and the amount of the deemed payment made by you to extinguish the Put Option. The deductibility of capital losses is subject to limitations.

If you are a secondary purchaser of your notes, you would be required to allocate your purchase price for your notes between the Debt Portion and Put Option based on the respective fair market values of each on the date of purchase. If, however, the portion of your purchase price allocated to the Debt Portion is at a discount from, or is in excess of, the principal amount of your notes, you may be subject to the market discount or amortizable bond premium rules described in the accompanying prospectus under “Tax Consequences—United States Taxation—Market Discount” and “Tax Consequences—United States Taxation—Debt Securities Purchased at a Premium” with respect to the Debt Portion. The portion of your purchase price that is allocated to the Put Option would likely be offset for tax purposes against amounts you subsequently receive with respect to the Put Option (including amounts received upon a sale of the notes that are attributable to the Put Option), thereby reducing the amount of gain or increasing the amount of loss you would recognize with respect to the Put Option or with respect to the sale of any Reference Index you receive upon the exercise of the Put Option. If, however, the portion of your purchase price allocated to the Debt Portion as described above is in excess of your purchase price for your notes, you would likely be treated for tax purposes as having received a payment for the Put Option (which will be deferred as described above) in an amount equal to such excess.

#### Alternative Characterizations

There is no judicial or administrative authority discussing how your notes should be treated for U.S. federal income tax purposes. Therefore, other treatments would also be reasonable and the Internal Revenue Service might assert that treatment other than that described above is more appropriate.

For example, it is possible that your note could be treated as a single debt instrument subject to the special tax rules governing contingent payment debt instruments. If your note is so treated, you would be required to accrue interest income over the term of your note based upon the yield at which we would issue a non-contingent fixed-rate debt instrument with other terms and conditions similar to your note. You would recognize gain or loss upon the sale, call or maturity of your note in an amount equal to the difference, if any, between the amount you receive at such time and your adjusted basis in your note. In general, your adjusted basis in your note would be equal to the amount you paid for your note, increased by the amount of interest you previously accrued with respect to your note. Any gain you recognize upon the sale, call or maturity of your note would generally be ordinary income and any loss recognized by you at such time would generally be ordinary loss to the extent of interest you included in income in the current or previous taxable years with respect to your note, and thereafter would be capital loss. The deductibility of capital losses is subject to limitations.

If your note is treated as a contingent payment debt instrument and you purchase your note in the secondary market at a price that is at a discount from, or in excess of, the adjusted issue price of your note, such excess or discount would not be subject to the generally applicable market discount or amortizable bond premium rules described in the accompanying prospectus but rather would be subject to special rules set forth in U.S. Treasury Department regulations governing contingent payment debt instruments. Accordingly, if you purchase your note in the secondary market, you should consult your tax advisor as to the possible application of such rules to you.

In addition, the Internal Revenue Service has released a notice that may affect the taxation of holders of “prepaid forward contracts” and similar instruments. According to the notice, the Internal Revenue Service and the U.S. Treasury Department are actively considering whether the holder of such instruments should be required to accrue ordinary income on a current basis. While it is not clear whether the notes would be viewed as similar to such instruments, it is possible that any future guidance could materially and adversely affect the tax consequences of an investment in the notes, possibly with retroactive effect.



Because of the absence of authority regarding the appropriate tax characterization of your note, it is possible that the Internal Revenue Service could seek to characterize your note in a manner that results in tax consequences to you that are different from those described above. For example, it is possible that you may be required to include the entire coupon into income when it is received. It is also possible that your note may be characterized in whole or in part as a notional principal contract or as a different type of derivative contract. You should consult your tax advisor as to the tax consequences of possible alternative characterizations of your note for U.S. federal income tax purposes.

Where the Term of the Notes Will Not Exceed One Year Without Regard to the Effect of an Extension in the Event of a Market Disruption Event

#### General

In the opinion of our counsel, Morrison & Foerster LLP, it would be reasonable to treat your notes as an investment unit consisting of (i) a non-contingent debt instrument subject to the rules governing short-term debt instruments (as described under “Tax Consequences—United States Taxation—Original Issue Discount—Short-Term Debt Securities” in the accompanying prospectus) issued by us to you (the “Short-Term Debt Portion”) and (ii) a Put Option.

#### Treatment as an Investment Unit

If your notes are properly treated as an investment unit consisting of a Short-Term Debt Portion and Put Option, it is likely that the Short-Term Debt Portion of your notes would be treated as having been issued for the principal amount of the notes and that interest payments on the notes would be treated in part as payments of interest and in part as payments for the Put Option. Amounts treated as interest would be subject to the rules governing short-term debt instruments (as described under “Tax Consequences—United States Taxation—Original Issue Discount—Short-Term Debt Securities” in the accompanying prospectus). Amounts treated as payment for the Put Option would be deferred and accounted for upon sale, call or maturity of the notes, as discussed below.

If you were to receive a cash payment of the full principal amount of your notes upon the call or maturity of your notes, such payment would likely be treated as (i) payment in full of the principal amount of the Short-Term Debt Portion (which would not result in the recognition of gain or loss if you are an initial purchaser of your notes) and (ii) the lapse of the Put Option which would likely result in your recognition of short-term capital gain in an amount equal to the amount paid to you for the Put Option and deferred as described above. If you were to receive a cash payment upon the maturity of your notes (excluding cash received as a coupon) of less than the full principal amount of your notes, such payment would likely be treated as (i) payment in full of the principal amount of the Short-Term Debt Portion (which would not result in the recognition of gain or loss if you are an initial purchaser of your notes) and (ii) the cash settlement of the Put Option pursuant to which you paid to us an amount equal to the excess of the principal amount of your notes over the amount that you received upon the maturity of your notes (excluding cash received as a coupon) in order to settle the Put Option. If the aggregate amount paid to you for the Put Option and deferred as described above is greater than the amount you are deemed to have paid to us to settle the Put Option, you will likely recognize short-term capital gain in an amount that is equal to such excess. Conversely, if the amount paid to you for the Put Option and deferred as described above is less than the amount you are deemed to have paid to us to settle the Put Option, you will likely recognize short-term capital loss in an amount that is equal to such difference. The deductibility of capital losses is subject to limitations.

Upon the sale of your notes, you would be required to apportion the value of the amount you receive between the Short-Term Debt Portion and Put Option on the basis of the values thereof on the date of the sale. You would recognize gain or loss with respect to the Short-Term Debt Portion in an amount equal to the difference between (i) the amount apportioned to the Short-Term Debt Portion and (ii) your adjusted U.S. federal income tax basis in the Debt Portion. Except to the extent attributable to accrued but unpaid interest with respect to the Short-Term Debt Portion, such gain or loss would be short-term capital gain or loss. If you are a cash basis taxpayer and do not elect to accrue interest currently, your adjusted basis in your notes should generally be the purchase price of your notes. If you are an accrual basis holder, or a cash basis holder that elects to accrue interest on your notes currently, your adjusted basis in your notes should generally be the purchase price of your notes increased by the

amount of accrued interest and decreased by any interest that is paid in respect of the Short-Term Debt Portion. The deductibility of capital losses is subject to limitations.

Upon the sale of your notes, the amount of cash that you receive that is apportioned to the Put Option (together with any amount of premium received in respect thereof and deferred as described above) would be treated as short-term capital gain. If the value of the Short-Term Debt Portion on the date of the sale of your notes is in excess of the amount you receive upon such sale, you would likely be treated as having made a payment (to the purchaser in the case of a sale) equal to the amount of such excess in order to extinguish your rights and obligations under the Put Option. In such a case, you would likely recognize short-term capital gain or loss in an amount equal to the difference between the premium you previously received in respect of the Put Option and the amount of the deemed payment made by you to extinguish the Put Option.

If you are a secondary purchaser of your notes, you would be required to allocate your purchase price for your notes between the Short-Term Debt Portion and Put Option based on the respective fair market values of each on the date of purchase. If the portion of your purchase price allocated to the Short-Term Debt Portion is in excess of the principal amount of your notes, you may be subject to the amortizable bond premium rules described in the accompanying prospectus under “Tax Consequences—United States Taxation—Debt Securities Purchased at a Premium” with respect to the Short-Term Debt Portion. If the portion of your purchase price allocated to the Short-Term Debt Portion is at a discount from the principal amount of the notes, special market discount rules applicable to short-term debt instruments may apply. You should consult your tax advisor with respect to such rules in such case. The portion of your purchase price that is allocated to the Put Option would likely be offset for tax purposes against amounts you subsequently receive with respect to the Put Option (including amounts received upon a sale of the notes that are attributable to the Put Option), thereby reducing the amount of gain or increasing the amount of loss you would recognize with respect to the Put Option or with respect to the sale of any stock you receive upon the exercise of the Put Option. If, however, the portion of your purchase price allocated to the Short-Term Debt Portion as described above is in excess of your purchase price for your notes, you would likely be treated for tax purposes as having received a payment for the Put Option (which will be deferred as described above) in an amount equal to such excess.

#### Alternative Characterizations

There is no judicial or administrative authority discussing how your notes should be treated for U.S. federal income tax purposes. Therefore, other treatments would also be reasonable and the Internal Revenue Service might assert that treatment other than that described above is more appropriate. For example, the Internal Revenue Service might assert that your notes should be treated as a single debt instrument as described in “Tax Consequences—United States Taxation” in the accompanying prospectus. Pursuant to such characterization, the notes would generally be subject to the rules concerning short-term debt instruments as described under the heading “Tax Consequences—United States Taxation—Original Issue Discount—Short-Term Debt Securities” in the accompanying prospectus. It is also possible that you may be required to include the entire coupon in income when it is received. Further, your note may be characterized in whole or in part as a notional principal contract or as a different type of derivative contract. In addition, if the term of your notes may exceed one year in the event of a market disruption event, your notes may be treated as notes with a term in excess of one year. In such case, your notes would be subject to the rules described under “Where the Term of Your Notes Will Exceed One Year” above.

In addition, the Internal Revenue Service has released a notice that may affect the taxation of holders of “prepaid forward contracts” and similar instruments. According to the notice, the Internal Revenue Service and the U.S. Treasury Department are actively considering whether the holder of such instruments should be required to accrue ordinary income on a current basis. While it is not clear whether the notes would be viewed as similar to such instruments, it is possible that any future guidance could materially and adversely affect the tax consequences of an investment in the notes, possibly with retroactive effect. You should consult your tax advisor as to the tax consequences of possible alternative characterizations of your note for U.S. federal income tax purposes.

#### Backup Withholding and Information Reporting

Payments made with respect to the notes and proceeds from the call, sale or maturity of the notes 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 notes. You are a non-U.S. holder if you are a beneficial owner of a note and are for U.S. federal income tax purposes a non-resident alien individual, a foreign corporation, or a foreign estate or trust.

As discussed above, the U.S. federal income tax treatment of the notes is uncertain and Royal Bank and its affiliates will withhold U.S. federal income tax at a 30% rate (or at a lower rate under an applicable income tax treaty) in respect of interest payments made on the notes to a non-U.S. holder unless such payments are effectively connected with the conduct by the non-U.S. holder of a trade or business in the United States (in which case, to avoid withholding, the non-U.S. holder will be required to provide a Form W-8ECI). We will not pay any additional amounts in respect of such withholding. To claim benefits under an income tax treaty, a non-U.S. holder must obtain a taxpayer identification number and certify as to its eligibility under the appropriate treaty's limitations on benefits article, if applicable (which certification may generally be made on a Form W-8BEN or W-8BEN-E, or a substitute or successor form). In addition, special rules may apply to claims for treaty benefits made by corporate non-U.S. holders. A non-U.S. holder that is eligible for a reduced rate of U.S. federal withholding tax pursuant to an income tax treaty may obtain a refund of any excess amounts withheld by filing an appropriate claim for refund with the Internal Revenue Service. The availability of a lower rate of withholding or an exemption from withholding under an applicable income tax treaty will depend on the proper characterization of the interest payments under U.S. federal income tax laws and whether such treaty rate or exemption applies to such interest payments. No assurance can be provided on the proper characterization of the interest payments for U.S. federal income tax purposes and, accordingly, no assurance can be provided on the availability of benefits under any income tax treaty. Non-U.S. holders must consult their tax advisors in this regard.

If you do not hold your notes through an account with Royal Bank or its affiliates, the institution through which you hold the notes may determine to withhold U.S. federal income tax in respect of interest payments made on the notes as described above.

You will generally not be subject to U.S. federal income or withholding tax on any gain upon the sale or maturity of the notes, provided that (i) you comply with applicable certification requirements, which certification may be made on an Form W-8BEN or W-8BEN-E (or a substitute or successor form) on which you certify, under penalties of perjury, that you are not a U.S. person and provide your name and address, (ii) your gain is not effectively connected with your conduct of a U.S. trade or business, and (iii) if you are a non-resident alien individual, you are not present in the U.S. for 183 days or more during the taxable year of the sale or maturity of the notes. In the case of (ii) above, you generally would be subject to U.S. federal income tax with respect to any income or gain in the same manner as if you were a U.S. holder and, if you are a corporation, you 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 your 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 you may be subject to information reporting and to backup withholding unless you comply with applicable certification and identification requirements as to your foreign status.

A "dividend equivalent" payment is treated as a dividend from sources within the U.S. 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 notes 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 notes to become subject to withholding tax, or if we or the institution through which you hold the notes determine withholding is appropriate under current law, we or such institution will withhold tax at the applicable statutory rate. We will not be required to pay any additional amounts in respect of such withholding. Prospective investors should consult their own tax advisors in this regard.

#### Foreign Account Tax Compliance Act

The Foreign Account Tax Compliance Act (“FATCA”) imposes a 30% U.S. withholding tax on certain U.S. source payments, including interest (and original issue discount), dividends, 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 substantial information regarding U.S. 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 notes 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 Internal Revenue Service have announced that withholding on payments of gross proceeds from a sale or redemption of the notes will only apply to payments made after December 31, 2018. If we determine withholding is appropriate with respect to the notes, 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 notes.

#### 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 notes.

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 Internal Revenue 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 Internal Revenue 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 notes 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 Internal Revenue Code may arise, for example, if notes 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 notes 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 notes, or exercising any rights related thereto, to represent that (a) such purchase, holding and exercise of the notes will not result in a non-exempt prohibited transaction under ERISA or the Internal Revenue 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 notes, 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 notes, 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 notes and the transactions contemplated with respect to the notes.

If you are an insurance company or the fiduciary of a pension plan or an employee benefit plan, and propose to invest in the notes, you should consult your legal counsel.



#### SUPPLEMENTAL PLAN OF DISTRIBUTION

With respect to each note to be issued, Royal Bank will agree to sell to RBC Capital Markets, LLC, and RBC Capital Markets, LLC will agree to purchase from Royal Bank, the principal amount of the note specified, at the price specified under “Proceeds to Royal Bank” in the relevant pricing supplement. RBC Capital Markets, LLC intends to resell each note it purchases at the original issue price specified in the relevant pricing supplement. In the future, RBC Capital Markets, LLC or another of our affiliates may repurchase and resell the notes in market-making transactions, with resales being made at prices related to prevailing market prices at the time of resale or at negotiated prices. For more information about the plan of distribution, the distribution agreement and possible market-making activities, see “Supplemental Plan of Distribution” in the accompanying prospectus supplement.

No Prospectus (as defined in Directive 2003/71/EC (as amended, the “Prospectus Directive”)) will be prepared in connection with these notes. Accordingly, these notes may not be offered to the public in any member state of the European Economic Area (the “EEA”), and any purchaser of these notes who subsequently sells any of these notes 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 notes 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 notes to be offered so as to enable an investor to decide to purchase or subscribe the notes, 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 notes or otherwise making them available to retail investors in the EEA has been prepared, and therefore, offering or selling the notes or otherwise making them available to any retail investor in the EEA may be unlawful under the PRIIPs Regulation.

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No dealer, salesman or other person has been authorized to give any information or to make any representation not contained in this product prospectus supplement or the accompanying prospectus or prospectus supplement and, if given or made, such information or representation must not be relied upon as having been authorized by Royal Bank of Canada or RBC Capital Markets, LLC. This product prospectus supplement, the accompanying prospectus and prospectus supplement do not constitute an offer to sell or a solicitation of an offer to buy any securities other than the securities described in this product prospectus supplement nor do they constitute an offer to sell or a solicitation of an offer to buy the securities in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction. The delivery of this product prospectus supplement, the accompanying prospectus and prospectus supplement at any time does not imply that the information they contain is correct as of any time subsequent to their respective dates.

Royal Bank of Canada  
Senior Global Medium-Term Notes, Series H  
Cash Settled Reverse Convertible Notes Linked to the Lesser Performing of Two or More Indices  
October 19, 2018

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