

RBC Capital Markets®

Filed Pursuant to Rule 424(b)(2) Registration Statement No. 333-227001

Preliminary Pricing Supplement

Subject to Completion: Dated August 29, 2019

To the Product Prospectus Supplement FIN-1 Dated September 20, 2018, and the Prospectus and Prospectus Supplement, each dated September 7, 2018

\$

Floating Rate Notes with Cap and Floor, Due September 6, 2024 Royal Bank of Canada

Royal Bank of Canada is offering the Floating Rate Notes with Cap and Floor (the "Notes") described below.

The CUSIP number for the Notes is 78014RBB5.

The Notes will pay interest quarterly, on the 6th day of March, June, September and December of each year, commencing on December 6, 2019 and ending on the Maturity Date. Interest will accrue at a rate equal to 3 Month U.S. dollar LIBOR + 0.40%, subject to the Cap and the Floor.

The Cap will be 4.00% per annum.

The Floor will be 1.50% per annum.

The Notes will not be listed on any U.S. securities exchange.

The Notes will be bail-inable notes (as defined in the accompanying prospectus supplement dated September 7, 2018) and subject to conversion in whole or in part – by means of a transaction or series of transactions and in one or more steps – into common shares of the Bank or any of its affiliates under subsection 39.2(2.3) of the Canada Deposit Insurance Corporation Act (the "CDIC Act") and to variation or extinguishment in consequence, and subject to the application of the laws of the Province of Ontario and the federal laws of Canada applicable therein in respect of the operation of the CDIC Act with respect to the Notes.

Investing in the Notes involves a number of risks. See "Risk Factors" beginning on page S-1 of the prospectus supplement dated September 7, 2018, "Additional Risk Factors Specific to the Notes" beginning on page PS-5 of the product prospectus supplement FIN-1 dated September 20, 2018 and "Additional Risk Factors" on page P-6 of this pricing supplement.

The Notes will not constitute deposits insured by the Canada Deposit Insurance Corporation, the U.S. Federal Deposit Insurance Corporation (the "FDIC") or any other Canadian or U.S. government agency or instrumentality.

Neither the Securities and Exchange Commission (the "SEC") nor any state securities commission has approved or disapproved of these securities or determined that this pricing supplement is truthful or complete. Any representation to the contrary is a criminal offense.

RBC Capital Markets, LLC will offer the Notes at varying public offering prices related to prevailing market prices, and will purchase the Notes from us on the Issue Date at a purchase price that is expected to be between 99.50% and 100% of the principal amount. See "Supplemental Plan of Distribution (Conflicts of Interest)" below.

We will deliver the Notes in book-entry only form through the facilities of The Depository Trust Company on September 6, 2019, against payment in immediately available funds.

RBC Capital Markets, LLC

Royal Bank of Canada

SUMMARY

The information in this "Summary" section is qualified by the more detailed information set forth in this pricing supplement, the product prospectus supplement FIN-1, the prospectus supplement, and the prospectus.

Royal Bank of Canada ("Royal Bank") Issuer:

Underwriter: RBC Capital Markets, LLC

Currency: U.S. Dollars

\$1,000 and minimum denominations of \$1,000 in excess of \$1,000 Minimum Investment:

Pricing Date: September 4, 2019 Issue Date: September 6, 2019 September 6, 2024 Maturity Date:

Interest Rate: 3 Month U.S. dollar LIBOR + 0.40%, subject to the Cap and the Floor.

3 Month U.S. dollar LIBOR, as reported on Reuters Page LIBOR01 or any successor page Reference Rate:

Determination of For additional information as to the determination of the Reference Rate and the calculation of interest,

see the discussion below in the section "Determination of 3 Month LIBOR," and the section "Description of

the Notes We May Offer-Interest Rates-Floating-Rate Notes-LIBOR Notes" in the accompanying

prospectus supplement.

Spread: 0.40%

Cap: 4.00% per annum Floor: 1.50% per annum

30/360 Day Count Fraction:

Type of Note: Floating Rate Notes with Cap and Floor

Interest Payment

Dates:

LIBOR:

Quarterly, in arrears, on the 6th day of March, June, September and December of each year, commencing on December 6, 2019 and ending on the Maturity Date. If any Interest Payment Date is not a New York business day, interest will be paid on the next New York business day as further discussed beginning on page S-20 of the prospectus supplement, without adjustment for period end dates and no additional

interest will be paid in respect of the postponement.

Interest Periods: Each period from and including an Interest Payment Date (or, for the first period, the Settlement Date) to

P-2

but excluding the next following Interest Payment Date.

Dates:

Interest Determination The Reference Rate is set two London business days prior to the start of the applicable Interest Period.

Not Applicable. The Notes are not redeemable prior to maturity. Redemption:

Floating Rate Notes with Cap and Floor

RBC Capital Markets, LLC

Royal Bank of Canada

Survivor's Option: Not Applicable.

Canadian Bail-in The Notes are bail-inable notes. See "Specific Terms of the Notes—Agreement with Respect to the

Exercise of Canadian Bail-in Powers.' **Powers**

Acknowledgment:

U.S. Tax Treatment:

a qualified floating rate for U.S. federal income tax purposes. Under this characterization, the Notes may be issued with de minimis OID. Please see the discussion in the accompanying prospectus dated September 7, 2018 under the section entitled "Tax Consequences—United States Taxation" and specifically the discussion under "Tax Consequences—United States Taxation—Original Issue Discount—Variable Rate Debt Securities," and in the product prospectus supplement FIN-1 dated September 20, 2018 (including the opinion of our counsel Morrison & Foerster LLP) under "Supplemental Discussion of U.S. Federal Income Tax Consequences" and specifically the discussion under "Supplemental Discussion of U.S. Federal Income Tax Consequences—Supplemental U.S. Tax Considerations—Where the term of your notes will exceed one year—Fixed Rate Notes, Floating Rate Notes, Inverse Floating Rate Notes, Step Up Notes, Leveraged Notes, Range Accrual Notes, Dual Range Accrual Notes and Non-Inversion Range Accrual Notes," and "Supplemental Discussion of U.S. Federal Income Tax Consequences—Supplemental U.S. Tax Considerations—Where the term of your notes will exceed one year—Sale, Redemption or Maturity of Notes that Are Not Treated as Contingent Payment Debt Instruments," which apply to your Notes.

We intend to take the position that the Notes will be treated as variable rate debt instruments providing for

Calculation Agent: RB

RBC Capital Markets, LLC.

Listing:

The Notes will not be listed on any securities exchange.

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 prospectus

dated September 7, 2018).

Terms Incorporated in the Master Note:

All of the terms appearing above the item captioned "Listing" on pages P-2 and P-3 of this pricing supplement and the applicable terms appearing under the caption "General Terms of the Notes" in the product prospectus supplement FIN-1 dated September 20, 2018, as modified by this pricing supplement.

P-3

RBC Capital Markets, LLC

Floating Rate Notes with Cap and Floor

Royal Bank of Canada

ADDITIONAL TERMS OF YOUR NOTES

You should read this pricing supplement together with the prospectus dated September 7, 2018, as supplemented by the prospectus supplement dated September 7, 2018 and the product prospectus supplement FIN-1 dated September 20, 2018, relating to our Senior Global Medium-Term Notes, Series H, of which these Notes are a part. Capitalized terms used but not defined in this pricing supplement will have the meanings given to them in the product prospectus supplement FIN-1. In the event of any conflict, this pricing supplement will control. *The Notes vary from the terms described in the product prospectus supplement FIN-1 in several important ways. You should read this pricing supplement carefully.*

This pricing supplement, together with the documents listed below, contains the terms of the Notes and supersedes all prior or contemporaneous oral statements as well as any other written materials including preliminary or indicative pricing terms, correspondence, trade ideas, structures for implementation, sample structures, brochures or other educational materials of ours. You should carefully consider, among other things, the matters set forth in "Risk Factors" in the prospectus supplement dated September 7, 2018, "Additional Risk Factors Specific to the Notes" in the product prospectus supplement FIN-1 dated September 20, 2018 and "Additional Risk Factors" in this pricing supplement, as the Notes involve risks not associated with conventional debt securities. We urge you to consult your investment, legal, tax, accounting and other advisors before you invest in the Notes. You may access these documents on the SEC website at www.sec.gov as follows (or if that address has changed, by reviewing our filings for the relevant date on the SEC website):

Prospectus dated September 7, 2018:

https://www.sec.gov/Archives/edgar/data/1000275/000121465918005973/l96181424b3.htm

Prospectus Supplement dated September 7, 2018:

https://www.sec.gov/Archives/edgar/data/1000275/000121465918005975/f97180424b3.htm

Product Prospectus Supplement FIN-1 dated September 20, 2018:

https://www.sec.gov/Archives/edgar/data/1000275/000114036118038802/form424b5.htm

Our Central Index Key, or CIK, on the SEC website is 1000275. As used in this pricing supplement, the "Company," the "Bank," "we," "us," or "our" refers to Royal Bank of Canada.

Royal Bank of Canada has filed a registration statement (including a product prospectus supplement, a prospectus supplement, and a prospectus) with the SEC for the offering to which this terms supplement relates. Before you invest, you should read those documents and the other documents relating to this offering that we have filed with the SEC for more complete information about us and this offering. You may obtain these documents without cost by visiting EDGAR on the SEC website at www.sec.gov. Alternatively, Royal Bank of Canada, any agent or any dealer participating in this offering will arrange to send you the product prospectus supplement, the prospectus supplement and the prospectus if you so request by calling toll-free at 1-877-688-2301.

P-4

RBC Capital Markets, LLC

Floating Rate Notes with Cap and Floor

Royal Bank of Canada

ADDITIONAL RISK FACTORS

The Notes involve risks not associated with an investment in ordinary floating rate notes. This section describes the most significant risks relating to the terms of the Notes. For additional information as to the risks related to an investment in the Notes, please see the accompanying product prospectus supplement FIN-1 dated September 20, 2018 and the prospectus supplement and prospectus, each dated September 7, 2018. You should carefully consider whether the Notes are suited to your particular circumstances before you decide to purchase them. Accordingly, prospective investors should consult their financial and legal advisors as to the risks entailed by an investment in the Notes and the suitability of the Notes in light of their particular circumstances.

The Amount of Interest Payable on the Notes Is Capped. The interest rate on the Notes for each quarterly interest period is capped for that period at the interest rate set forth on the cover of this pricing supplement. Thus, you will not benefit from three-month U.S. dollar LIBOR being greater than the difference between the Cap and the Spread in any quarterly Interest Period.

Investors Are Subject to Our Credit Risk, and Our Credit Ratings and Credit Spreads May Adversely Affect the Market Value of the Notes. Investors are dependent on Royal Bank's ability to pay all amounts due on the Notes on interest payment dates and at maturity, and, therefore, investors are subject to the credit risk of Royal Bank and to changes in the market's view of Royal Bank's creditworthiness. Any decrease in Royal Bank's credit ratings or increase in the credit spreads charged by the market for taking Royal Bank's credit risk is likely to adversely affect the market value of the Notes.

The Notes May Be Adversely Affected by Changes in LIBOR Reporting Practices or the Method in Which LIBOR Is Determined. On July 27, 2017, the Financial Conduct Authority (the "FCA") announced its intention to phase out LIBOR rates by the end of 2021. It is not possible to predict the further effect of the FCA Rules (as defined in the accompanying prospectus supplement), any changes in the methods by which the LIBOR is determined, or any other reforms to LIBOR that may be enacted in the U.K., the EU and elsewhere, each of which may adversely affect the trading market for the Notes. Any such developments may cause LIBOR to perform differently than in the past, or cease to exist. In addition, any other legal or regulatory changes made by the FCA, ICE Benchmark Administration Limited, the European Money Markets Institute (formerly Euribor-EBF), the European Commission or any other successor governance or oversight body, or future changes adopted by such body, in the method by which LIBOR is determined or the transition from LIBOR to a successor benchmark may result in, among other things, a sudden or prolonged increase or decrease in LIBOR, a delay in the publication of LIBOR, trigger changes in the rules or methodologies in LIBOR discouraging market participants from continuing to administer or to participate in LIBOR's determination, and, in certain situations, could result in LIBOR no longer being determined and published. Accordingly, such proposals for reform and changes could have a material adverse effect on the value of and return on the Notes (including potential rates of interest thereon).

If a published 3-month U.S. dollar LIBOR rate is unavailable after 2021, the Reference Rate on the Notes will be determined using the alternative methods set forth in the accompanying prospectus supplement under "Description of the Notes We May Offer—Interest Rates—Floating-Rate Notes—LIBOR Notes." Any of these alternative methods may result in interest payments that are lower than or that do not otherwise correlate over time with the payments that would have been made on the Notes if 3-month U.S. dollar LIBOR was available in its current form. Further, the same costs and risks

Floating Rate Notes with Cap and Floor

Royal Bank of Canada

that may lead to the discontinuation or unavailability of 3-month U.S. dollar LIBOR may make one or more of the alternative methods impossible or impracticable to determine. If, as set forth below and in the accompanying prospectus supplement under "Description of the Notes We May Offer—Interest Rates—Floating-Rate Notes—LIBOR Notes," a published 3-month U.S. dollar LIBOR rate is unavailable and banks are unwilling to provide quotations for the calculation of LIBOR, the alternative method sets the interest rate for an Interest Period as the same rate as the immediately preceding interest period, which could remain in effect for the remaining term of the Notes, and the value of the Notes may be adversely affected.

P-6

RBC Capital Markets, LLC

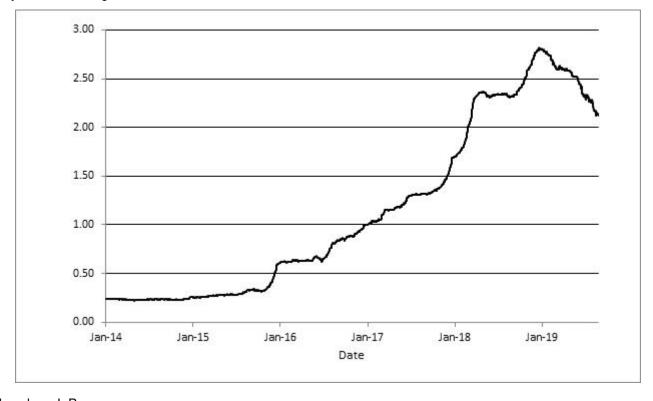
Floating Rate Notes with Cap and Floor

Royal Bank of Canada

HISTORICAL REFERENCE RATE INFORMATION

Historically, the Reference Rate has experienced significant fluctuations. Any historical upward or downward trend in the level of the Reference Rate during any period shown below is not an indication that the interest payable on the Notes is more or less likely to increase or decrease at any time during the term of the Notes.

The Reference Rate was 2.117% on August 27, 2019. The graph below sets forth the historical performance of the Reference Rate from January 1, 2014 to August 27, 2019.



Source: Bloomberg L.P.

PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS

Floating Rate Notes with Cap and Floor Royal Bank of Canada

DETERMINATION OF 3 MONTH LIBOR

As discussed in the prospectus supplement, 3 Month LIBOR will be determined as follows:

- 3 Month LIBOR will be the offered rate appearing on the Reuters Page LIBOR01 as of 11:00 A.M., London time, on the relevant interest determination date, for deposits in U.S. dollars beginning on the relevant interest reset date.
- If the rate described above does not appear on that page, then 3 Month LIBOR will be determined on the basis of the rates, at approximately 11:00 A.M., London time, on the relevant interest determination date, at which deposits of the following kind are offered to prime banks in the London interbank market by four major banks in that market selected by the calculation agent: 3 month deposits in U.S. dollars, beginning on the relevant interest reset date, and in a representative amount. The calculation agent will request the principal London office of each of these banks to provide a quotation of its rate. If at least two quotations are provided, 3 Month LIBOR for the relevant interest determination date will be the arithmetic mean of the quotations.
- If fewer than two quotations are provided as described above, 3 Month LIBOR for the relevant interest reset date will be the arithmetic mean of the rates for loans of the following kind to leading European banks quoted, at approximately 11:00 A.M., in New York, New York, on that interest determination date, by three major banks in that financial center selected by the calculation agent: 3 month loans in U.S. dollars, beginning on the relevant interest reset date and in a representative amount.
- If fewer than three banks selected by the calculation agent are quoting as described above, 3 Month LIBOR for the new interest period will be the rate in effect for the prior interest period.

Notwithstanding the foregoing, if we, in consultation with the calculation agent, determine that 3 Month LIBOR has been permanently discontinued, the calculation agent will use, as a substitute for LIBOR and for each future interest determination date, an alternative rate. As part of such substitution, the calculation agent will, after consultation with us, make such adjustments to the alternative rate or the spread thereon, as well as the business day convention, interest determination dates and related provisions and definitions, in each case that are consistent with accepted market practice for the use of such alternative rate for debt obligations such as the Notes; provided however that if the calculation agent determines, and following consultation with us, that there is no clear market consensus as to whether any rate has replaced 3 Month LIBOR in customary market usage, we will appoint in our sole discretion an investment bank of national standing in the United States (which may be one of our affiliates) to determine an appropriate alternative rate, and the decision of such investment bank will be binding on us, the calculation agent and the holders of the Notes. If, however, the calculation agent determines that 3 Month LIBOR has been discontinued, but for any reason an alternative rate has not been determined, 3 Month LIBOR will be equal to such rate on the interest determination date when LIBOR was last available on the Reuters LIBOR01 Page, as determined by the calculation agent.

For purposes of the prior paragraph, the term "alternative rate" means the alternative reference rate selected by the central bank, reserve bank, monetary authority or any similar institution (including any committee or working group thereof) in the jurisdiction of the applicable index currency that is consistent with accepted market practice in the event that 3 Month LIBOR is permanently discontinued.

For additional information about the calculation of interest on the Notes, please see the section of the prospectus supplement, "Description of the Notes We May Offer—Interest Rates—Floating-Rate Notes—LIBOR Notes."

P-8

RBC Capital Markets, LLC

Floating Rate Notes with Cap and Floor

Royal Bank of Canada

AGREEMENT WITH RESPECT TO THE EXERCISE OF CANADIAN BAIL-IN POWERS

By its acquisition of the Notes, each holder or beneficial owner is deemed to (i) agree to be bound, in respect of that Note, by the CDIC Act, including the conversion of that Note, in whole or in part – by means of a transaction or series of transactions and in one or more steps – into common shares of the Bank or any of its affiliates under subsection 39.2(2.3) of the CDIC Act and the variation or extinguishment of that Note in consequence, and by the application of the laws of the Province of Ontario and the federal laws of Canada applicable therein in respect of the operation of the CDIC Act with respect to that Note; (ii) attorn and submit to the jurisdiction of the courts in the Province of Ontario with respect to the CDIC Act and those laws; and (iii) acknowledge and agree that the terms referred to in paragraphs (i) and (ii), above, are binding on that holder or beneficial owner despite any provisions in the indenture or that Note, any other law that governs that Note and any other agreement, arrangement or understanding between that holder or beneficial owner and the Bank with respect to that Note.

Holders and beneficial owners of any Note will have no further rights in respect of that Note to the extent that Note is converted in a bail-in conversion, other than those provided under the bail-in regime, and by its acquisition of an interest in any Note, each holder or beneficial owner of that Note is deemed to irrevocably consent to the converted portion of the principal amount of that Note and any accrued and unpaid interest thereon being deemed paid in full by the Bank by the issuance of common shares of the Bank (or, if applicable, any of its affiliates) upon the occurrence of a bail-in conversion, which bail-in conversion will occur without any further action on the part of that holder or beneficial owner or the trustee; provided that, for the avoidance of doubt, this consent will not limit or otherwise affect any rights that holders or beneficial owners may have under the bail-in regime.

See "Description of Notes We May Offer? Special Provisions Related to Bail-inable Notes" in the accompanying prospectus supplement dated September 7, 2018 for a description of provisions applicable to the Notes as a result of Canadian bail-in powers.

P-9

RBC Capital Markets, LLC

Floating Rate Notes with Cap and Floor

Royal Bank of Canada

SUPPLEMENTAL PLAN OF DISTRIBUTION (CONFLICTS OF INTEREST)

Delivery of the Notes will be made against payment for the Notes on September 6, 2019, which is the second (2nd) business day following the Pricing Date (this settlement cycle being referred to as "T+2"). See "Plan of Distribution" in the prospectus supplement dated September 7, 2018. For additional information as to the relationship between us and RBC Capital Markets, LLC, please see the section "Plan of Distribution—Conflicts of Interest" in the prospectus dated September 7, 2018.

After the initial offering of the Notes, the price to the public may change.

We may use this pricing supplement in the initial sale of the Notes. In addition, RBC Capital Markets, LLC or another of our affiliates may use this pricing supplement in a market-making transaction in the Notes after their initial sale. *Unless we or our agent informs the purchaser otherwise in the confirmation of sale, this pricing supplement is being used in a market-making transaction.*

RBCCM and each dealer through which we may offer the Notes has not offered, sold or otherwise made available and will not offer, sell or otherwise make available any Notes to, any retail investor in the European Economic Area ("EEA"). For these purposes, the expression "offer" includes the communication in any form and by any means of sufficient information on the terms of the offer and the 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 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 Regulation (EU) (2017/1129) (the "Prospectus Regulation"). Consequently, no key information document required by Regulation (EU) No 1286/2014 (as amended, the "PRIIPs Regulation") for offering or selling the 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.

P-10

RBC Capital Markets, LLC

