

ROYAL BANK OF CANADA  
 Form FWP  
 January 31, 2019

Free Writing Prospectus  
 (To the Prospectus, the Prospectus Supplement and the Product Prospectus Supplement, each dated September 7, 2018)

Filed Pursuant to Rule 433  
 Registration No. 333-227001  
 January 31, 2019

\$  
 Capped Levered Market Plus Notes  
 Due February 4, 2020  
 Linked to the EURO STOXX 50® Index (as Adjusted by the Performance of the  
 Euro Relative to the U.S. Dollar)  
 Senior Global Medium Term Notes, Series H

Royal Bank of Canada

**General**

The Notes are designed for investors who seek a return of 3.0 times the appreciation of the level of the EURO STOXX 50® Index (the “Index,” or the SX5E), as adjusted by the performance of the euro relative to the U.S. dollar, subject to the Maximum Return set forth below. Investors should be willing to forgo interest and dividend payments and, if the level of the SX5E (as so adjusted) decreases, be willing to lose some or all of their principal.

- Senior unsecured obligations of Royal Bank of Canada maturing February 4, 2020.<sup>(a)(b)</sup>
- Minimum denominations of \$10,000 and integral multiples of \$1,000 in excess thereof.

The Notes are expected to price on or about January 31, 2019<sup>(b)</sup> (the “pricing date”) and are expected to be issued on or about February 6, 2019<sup>(b)</sup> (the “issue date”).

**Key Terms** Terms used in this free writing prospectus, but not defined herein, will have the meanings ascribed to them in the product prospectus supplement.

**Issuer:** Royal Bank of Canada

**Reference Asset:** EURO STOXX 50® Index (Bloomberg ticker symbol “SX5E”)

**Exchange Rate:** The euro/U.S. dollar exchange rate, determined as the number of U.S. dollars that can be purchased with one euro, as described in more detail below. See the section below, “Additional Information About the Exchange Rate.” The Exchange Rate will increase if the euro strengthens against the U.S. dollar, and will decrease if the U.S. dollar strengthens against the euro.

**Leverage Factor:** 3.0

If the Final Level is greater than or equal to the Initial Level (each determined as described below), you will receive a cash payment that provides you with a return equal to the Percentage Change multiplied by the Leverage Factor. Accordingly, if the Percentage Change is positive, your payment per \$1,000 in principal amount of the Notes will be calculated as follows:  
 $\$1,000 + [\$1,000 \times (\text{Percentage Change} \times \text{Leverage Factor})]$   
 However, the payment on the Notes will not exceed \$1,184.20 for each \$1,000 in principal amount.

**Payment at Maturity:** If the Final Level is less than the Initial Level, you will lose 1% of the principal amount of your Notes for every 1% that the Final Level is less than the Initial Level. Accordingly, if the Percentage Change is negative, your payment per \$1,000 in principal amount of the Notes will be calculated as follows:  
 $\$1,000 + [\$1,000 \times \text{Percentage Change}]$   
 If the Final Level is less than the Initial Level, you will lose 1% of the principal amount of your Notes for every 1% that the Percentage Change is less than 0%. Any payment on the Notes, including any repayment of principal, is subject to the creditworthiness of the Issuer and is not guaranteed by any third party.

**Percentage Change:** The change from the Initial Level to the Final Level, calculated as follows:  

$$\frac{\text{Final Level} - \text{Initial Level}}{\text{Initial Level}}$$

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Maximum Return: \$1,184.20 per \$1,000 in principal amount of the Notes.  
 Initial Level: The closing level of the SX5E on the pricing date multiplied by the Exchange Rate on that day.  
 Final Level: The arithmetic average of (a) the closing level of the SX5E multiplied by (b) the Exchange Rate, on each of the valuation dates.  
 Valuation Dates: January 24, 2020, January 27, 2020, January 28, 2020, January 29, 2020 and January 30, 2020<sup>(a)(b)</sup>  
 Maturity Date: February 4, 2020<sup>(a)(b)</sup>  
 Calculation Agent: RBC Capital Markets, LLC  
 CUSIP/ISIN: 78013XYL6 / US78013XYL62

Estimated Value: The initial estimated value of the Notes as of the date of this document is \$987.06 per \$1,000 in principal amount, which is less than the price to public. The final pricing supplement relating to the Notes will set forth our estimate of the initial value of the Notes as of the pricing date, which will not be more than \$20 less than this amount. The actual value of the Notes at any time will reflect many factors, cannot be predicted with accuracy, and may be less than this amount.

<sup>(a)</sup> Subject to postponement if a market disruption event or a Currency Disrupted Day occurs, as described under “General Terms of the Notes—Market Disruption Events” in the product prospectus supplement and the section below, “Additional Information About the Exchange Rate.”

<sup>(b)</sup> Expected. In the event we make any change to the expected pricing date and issue date, the valuation dates and the maturity date will be changed so that the stated term of the Notes remains the same.

Investing in the Notes involves a number of risks. See “Selected Risk Considerations” beginning on page FWP-5 of this free writing prospectus, “Additional Risk Factors Specific to the Notes” beginning on page PS-4 of the product prospectus supplement, and “Risk Factors” beginning on page S-1 of the prospectus supplement and beginning on page 1 of the prospectus.

The Notes will not be listed on any U.S. securities exchange or quotation system. Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined that this free writing prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

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

	Price to Public <sup>1</sup>	Underwriting Commission <sup>2</sup>	Proceeds to Royal Bank of Canada
Per Note \$1,000	\$10.00		\$990.00
Total \$	\$		\$

<sup>1</sup> Certain fiduciary accounts purchasing the Notes will pay a purchase price of \$990.00 per Note, and the placement agents will forgo any fees with respect to sales made to those accounts. The price to the public for all other purchases of the Notes is 100%.

<sup>2</sup> JPMorgan Chase Bank, N.A., J.P. Morgan Securities LLC and their affiliates will act as placement agents for the Notes and will receive a fee from the Issuer that will not exceed \$10.00 per \$1,000 in principal amount of the Notes, but will forgo any fees for sales to certain fiduciary accounts.

RBC Capital Markets, LLC JPMorgan Chase Bank, N.A. J.P. Morgan Securities LLC  
 Placement Agents

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 free writing prospectus 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](http://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.

You may revoke your offer to purchase the Notes at any time prior to the pricing as described on the cover of this free writing prospectus. We reserve the right to change the terms of, or reject any offer to purchase the Notes prior to their issuance. In the event of any changes to the terms of the Notes, we will notify you and you will be asked to accept such changes in connection with your purchase. You may also choose to reject such changes, in which case we may reject your offer to purchase.

#### ADDITIONAL TERMS OF THE NOTES

You should read this free writing prospectus together with the prospectus dated September 7, 2018, as supplemented by the prospectus supplement dated September 7, 2018 and the product prospectus supplement dated September 7, 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 free writing prospectus will have the meanings given to them in the product prospectus supplement. In the event of any conflict, this free writing prospectus will control. In particular, please note that the return on the Notes will be determined in part based on the performance of the Exchange Rate. Accordingly, the Initial Level and the Final Level of the Reference Asset will be determined in a manner that is different from the manner contemplated by the product prospectus supplement, as set forth on the cover page of this document. You should read this free writing prospectus carefully.

This free writing prospectus, 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 and “Additional Risk Factors Specific to the Notes” in the product prospectus 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 Securities and Exchange Commission (the “SEC”) website at [www.sec.gov](http://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 ERN-EI-1 dated September 7, 2018:

<https://www.sec.gov/Archives/edgar/data/1000275/000114036118038044/form424b5.htm>

Our Central Index Key, or CIK, on the SEC website is 1000275. As used in this free writing prospectus, “Royal Bank”, “we,” “us,” or “our” refers to Royal Bank of Canada.

What Is the Total Return on the Notes at Maturity Assuming a Range of Performance for the Adjusted Level of the SX5E?

The following table illustrates the hypothetical total return at maturity on the Notes. The “total return,” as used in this free writing prospectus, is the number, expressed as a percentage, that results from comparing the payment at maturity per \$1,000 in principal amount of the Notes to \$1,000. The hypothetical total returns and examples set forth below reflect the Leverage Factor of 3.0 and assume a hypothetical Initial Level of 100.00, the Maximum Return of \$1,184.20 per \$1,000 in principal amount of the Notes, and hypothetical Final Levels, as set forth below. The actual Initial Level will be determined on the pricing date, and the actual Final Level will be determined based on the arithmetic average of the adjusted closing levels of the SX5E on each of the valuation dates (each in the manner described on the cover page). The hypothetical total returns and examples set forth below are for illustrative purposes only and may not be the actual total returns applicable to a purchaser of the Notes. The numbers appearing in the following table and examples have been rounded for ease of analysis. The examples below do not take into account any tax consequences from investing in the Notes.

Final Level	Percentage Change	Payment at Maturity	Total Return on the Notes
150.00	50.00%	\$1,184.20	18.42%
140.00	40.00%	\$1,184.20	18.42%
130.00	30.00%	\$1,184.20	18.42%
120.00	20.00%	\$1,184.20	18.42%
110.00	10.00%	\$1,184.20	18.42%
106.14	6.14%	\$1,184.20	18.42%
105.00	5.00%	\$1,150.00	15.00%
102.00	2.00%	\$1,060.00	6.00%
100.00	0.00%	\$1,000.00	0.00%
90.00	-10.00%	\$900.00	-10.00%
80.00	-20.00%	\$800.00	-20.00%
70.00	-30.00%	\$700.00	-30.00%
60.00	-40.00%	\$600.00	-40.00%
50.00	-50.00%	\$500.00	-50.00%
40.00	-60.00%	\$400.00	-60.00%
30.00	-70.00%	\$300.00	-70.00%
20.00	-80.00%	\$200.00	-80.00%
10.00	-90.00%	\$100.00	-90.00%
0.00	-100.00%	\$0.00	-100.00%

Hypothetical Examples of Amounts Payable at Maturity

The following examples illustrate how the payments set forth in the table above are calculated.

Example 1: The Final Level increases from the Initial Level to 105, resulting in a Percentage Change of 5.00%. Because the Percentage Change is positive, the investor receives a payment at maturity of \$1,150 per \$1,000 in principal amount of the Notes, calculated as follows:

$$\$1,000 + [\$1,000 \times (5.00\% \times 3)] = \$1,150.00$$

Example 2: The Final Level increases from the Initial Level to 115, resulting in a Percentage Change of 15.00%.

In this example, the Percentage Change multiplied by the Leverage Factor would result in a payment that is greater than the Maximum Return. Accordingly, the payment on the Notes would be \$1,184.20 per \$1,000 in principal amount, representing the Maximum Return.

Example 3: The Final Level decreases from the Initial Level to 500.00, resulting in a Percentage Change of -50.00%.

Because the Percentage Change is negative the investor will receive a payment at maturity of \$500.00 per \$1,000 in principal amount of the Notes, calculated as follows:

$$\$1,000 + [\$1,000 \times -50.00\%] = \$500.00$$

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### Selected Purchase Considerations

**Appreciation Potential** — The Notes provide the opportunity to enhance any positive increase in the adjusted level of the SX5E, by multiplying a positive Percentage Change by the Leverage Factor, up to the Maximum Return.

**No Protection Against Loss** — Payment at maturity of the principal amount of the Notes is not protected against a decrease in the Final Level as compared to the Initial Level. If the Final Level is less than the Initial Level, you will lose an amount equal to 1% of the principal amount of your Notes for every 1% that the Percentage Change is less than 0%. Because the Notes are our senior unsecured obligations, payment of any amount at maturity is subject to our ability to pay our obligations as they become due and is not guaranteed by any third party. For a description of the risks with respect to our credit, see “Selected Risk Considerations—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” in this free writing prospectus.

**Impact of the Exchange Rate** — Your return on the Notes is linked the performance of the SX5E, as adjusted by the Exchange Rate. Although the SX5E includes stocks that are traded in euro, the level of the SX5E is not adjusted based on the Exchange Rate. However, the Initial Level and the Final Level, for purposes of the Notes, will reflect the Exchange Rate. Any decrease in the number of U.S. dollars that may be purchased with one euro could reduce your return on the Notes. If the value of the U.S. dollar appreciates against the euro, you could lose some or all of your investment in the Notes, even if the unadjusted closing level of the SX5E has increased during the term of the Notes.

### Selected Risk Considerations

An investment in the Notes involves significant risks. Investing in the Notes is not equivalent to investing directly in the SX5E or in the euro. These risks are explained in more detail in the section “Additional Risk Factors Specific to the Notes,” beginning on page PS-4 of the product prospectus supplement. In addition to the risks described in the prospectus supplement and the product prospectus supplement, you should consider the following:

**Principal at Risk** — Investors in the Notes could lose all or a substantial portion of their principal amount if the level of the SX5E, as adjusted by the Exchange Rate, decreases. If the Percentage Change is negative, the payment that you will receive at maturity will represent a loss of 1% of your principal for each 1% that the Final Level is less than the Initial Level.

**The Notes Do Not Pay Interest and Your Return May Be Lower than the Return on a Conventional Debt Security of Comparable Maturity** — There will be no periodic interest payments on the Notes as there would be on a conventional fixed-rate or floating-rate debt security having the same maturity. The return that you will receive on the Notes, which could be negative, may be less than the return you could earn on other investments. Even if your return is positive, your return may be less than the return you would earn if you bought one of our conventional senior interest bearing debt securities.

**Your Potential Payment at Maturity Is Limited** - The Notes will provide less opportunity to participate in the appreciation of the SX5E, as adjusted by the Exchange Rate, than an investment in a security providing full participation in that appreciation, because the return on the Notes will not exceed the Maximum Return. Accordingly, your return on the Notes may be less than your return would be if you made an investment in a security directly linked to the positive performance of the SX5E, as so adjusted.

**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 our senior unsecured debt securities. As a result, your receipt of the amount due on the maturity date is dependent upon our ability to repay our obligations at that time. This will be the case even if the level of the SX5E increases after the pricing date. No assurance can be given as to what our financial condition will be at the maturity of the Notes.

**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. RBCCM and our other affiliates may make a market for the Notes; however, they are not required to do so. RBCCM or any other affiliate of ours may stop 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.

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**You Will Not Have Any Rights to the Securities Included in the SX5E** — As a holder of the Notes, you will not have voting rights or rights to receive cash dividends or other distributions or other rights that holders of securities included in the SX5E would have.

**You Will Not Have Any Rights to Receive Euro** — The Notes are denominated in, and will be payable in, U.S. dollars. Even though the return on the Notes will depend in part on the Exchange Rate, you will not be entitled to receive any euro.

**The Notes Are Subject to Non-U.S. Securities Markets Risks** — An investment in securities linked to the SX5E involves risks associated with the Eurozone. The prices of such securities may be affected by political, legal, economic, financial and social factors in the home country of each such company and related international markets, including changes in governmental, economic and fiscal policies, currency exchange laws or other laws or restrictions, which could affect the value of the Notes. The foreign securities tracked by the SX5E may have less liquidity and could be more volatile than many of the securities traded in U.S. or other longer-established securities markets. Direct or indirect government intervention to stabilize the relevant foreign securities markets, as well as cross shareholdings in foreign companies, may affect trading levels or prices and volumes in those markets. The other special risks associated with foreign securities may include, but are not limited to: less liquidity and smaller market capitalizations; less rigorous regulation of securities markets; governmental interference; currency fluctuations; higher inflation; and social, economic and political uncertainties. Also, there is generally less publicly available information about foreign companies than about U.S. companies that are subject to the reporting requirements of the SEC, and foreign companies are subject to accounting, auditing and financial reporting standards and requirements different from those applicable to U.S. reporting companies. These factors may adversely affect the performance of the SX5E and, as a result, the value of the Notes.

**The Notes Are Linked to the Exchange Rate, and Are Therefore Subject to Foreign Currency Exchange Rate Risk** — The payment amount on the Notes will be calculated in part based upon the Exchange Rate. As a result, investors in the Notes will be exposed to currency exchange rate risk. If the U.S. dollar strengthens against the euro (which would cause the Exchange Rate to decrease), the amount payable, if any, at maturity of the Notes may be reduced.

Foreign currency exchange rates vary over time, and may vary considerably during the term of the Notes. Changes in a particular exchange rate result from the interaction of many factors directly or indirectly affecting economic and political conditions.

Of particular importance are:

- existing and expected rates of inflation;
- existing and expected interest rate levels;
- the balance of payments in the European Union and the United States and between each of them and their major trading partners;
- the extent of governmental surpluses or deficits in the relevant countries; and
- other financial, economic, military and political factors in the European Union and the United States.

All of these factors are, in turn, sensitive to the monetary, fiscal and trade policies pursued by the governments of the European Union and the United States and other countries important to international trade and finance.

**Changes in the Level of the SX5E and Exchange Rate May Offset Each Other** — The Notes are linked to the level of the SX5E, as adjusted by the Exchange Rate. Price movements in the SX5E and movements in the Exchange Rate may not correlate with each other. Therefore, in calculating the Final Level, increases in the level of the SX5E may be moderated, or more than offset, by decreases in the Exchange Rate. Similarly, at a time when the Exchange Rate increases, the level of the SX5E may decrease. Therefore, in calculating the Final Level, increases in the Exchange Rate may be moderated, or more than offset, by decreases in the level of the SX5E.

**Many Economic and Market Factors Will Impact the Value of the Notes** — In addition to the level of the SX5E and the Exchange Rate on any day, the value of the Notes will be affected by a number of economic and market factors that may either offset or magnify each other, including:

- the actual and expected volatility of the SX5E and the Exchange Rate;



- the time to maturity of the Notes;
- the dividend rate on the securities included in the SX5E;
- interest and yield rates in the market generally;
- a variety of economic, financial, political, regulatory or judicial events; and
- our creditworthiness, including actual or anticipated downgrades in our credit ratings.

**The Estimated Initial Value of the Notes Will Be Less than the Price to the Public** — The estimated initial value that will be set forth in the final pricing supplement for the Notes does not represent a minimum price at which we, RBCCM or any of our affiliates would be willing to purchase the Notes in any secondary market (if any exists) at any time. If you attempt to sell the Notes prior to maturity, their market value may be lower than the price you paid for them and the estimated initial value. This is due to, among other things, changes in the level of the SX5E and/or the Exchange Rate, the borrowing rate we pay to issue securities of this kind, and the inclusion in the price to the public of the underwriting discount and the costs relating to our hedging of the Notes. These factors, together with various credit, market and economic factors over the term of the Notes, are expected to reduce the price at which you may be able to sell the Notes in any secondary market and will affect the value of the Notes in complex and unpredictable ways. Assuming no change in market conditions or any other relevant factors, the price, if any, at which you may be able to sell your Notes prior to maturity may be less than your original purchase price. The Notes are not designed to be short-term trading instruments. Accordingly, you should be able and willing to hold your Notes to maturity.

**The Estimated Initial Value of the Notes That We Will Provide in the Final Pricing Supplement Will Be an Estimate Only, Calculated as of the Pricing Date** — The value of the Notes at any time after the pricing date will vary based on many factors, including changes in market conditions, and cannot be predicted with accuracy. As a result, the actual value you would receive if you sold the Notes in any secondary market, if any, should be expected to differ materially from the estimated initial value of your Notes.

**We and Our Affiliates May Have Adverse Economic Interests to the Holders of the Notes** — We, RBCCM and our other respective affiliates trade the securities represented by the SX5E, and other financial instruments related to the SX5E, on a regular basis, for their accounts and for other accounts under our or their management. We may also conduct trades relating to the Exchange Rate. We, RBCCM and our other affiliates may also issue or underwrite or assist unaffiliated entities in the issuance or underwriting of other securities or financial instruments that relate to the SX5E and/or the Exchange Rate. To the extent that we or any of our affiliates serves as issuer, agent or underwriter for such securities or financial instruments, our or their interests with respect to such products may be adverse to those of the holders of the Notes. Any of these trading activities could potentially affect the performance of the SX5E and/or the Exchange Rate and, accordingly, could affect the value of the Notes, and the amounts, if any, payable on the Notes.

We or our affiliates may currently or from time to time engage in business with the issuers of the securities represented by the SX5E, including extending loans to, or making equity investments in, or providing advisory services to them, including merger and acquisition advisory services. In the course of this business, we or our affiliates may acquire non-public information about these companies, and we will not disclose any such information to you. None of us or our affiliates makes any representation or warranty to any purchaser of the Notes with respect to any matters whatsoever relating to our business with the issuer of any security included in the SX5E or future price movements of any such security.

Additionally, we or our affiliates may serve as issuer, agent or underwriter for additional issuances of securities with returns linked or related to changes in the level the SX5E and/or the Exchange Rate. By introducing competing products into the marketplace in this manner, we could adversely affect the value of the Notes.

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

**Inconsistent Research** — We or our affiliates may issue research reports on securities that are, or may become, components of the SX5E. We may also publish research from time to time on financial markets and other matters, including the Exchange Rate, that may influence the levels of the SX5E or the value of the

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Notes, or express opinions or provide recommendations that may be inconsistent with the purchasing or holding the Notes or with the investment view implicit in the Notes, the SX5E or the Exchange Rate. You should make your own independent investigation of the merits of investing in the Notes and the SX5E.

Market Disruption Events or Unavailability of the Level of the SX5E or the Exchange Rate and Adjustments — The payment at maturity, the valuation dates and the Reference Asset are subject to adjustment as described in the product prospectus supplement, and in the section below, “Additional Information About the Exchange Rate.” For a description of what constitutes a market disruption event as well as the consequences of that market disruption event and the unavailability of the level of the SX5E on the valuation dates, see “General Terms of the Notes—Unavailability of the Level of the Reference Asset” and “—Market Disruption Events” in the product prospectus supplement. The calculation agent will have significant discretion in determining if any of the events discussed in these sections has occurred, which may impact the payments on the Notes.

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Additional Information About the Exchange Rate

On the pricing date and on each valuation date, the Exchange Rate will be the official mid-WM Reuters fixing at 4:00 pm London Time (Bloomberg: WMCO or any successor page) on that day, expressed as the number of U.S. dollars that may be purchased with one euro.

A “Currency Business Day” is a day, other than a Saturday or Sunday, on which the Exchange Rate is published as described in the preceding paragraph.

A “Currency Disrupted Day” is day that is not a Currency Business Day with respect to the Exchange Rate or a day on which a market disruption event occurs or is continuing with respect to the Exchange Rate. A “market disruption event” will be deemed to occur as to the Exchange Rate if the calculation agent determines that its ability to determine the Exchange Rate is materially and adversely impacted by reason of an extraordinary event, occurrence, declaration, or otherwise, or if the Exchange Rate is not quoted on the specified page at the specified time on the applicable Currency Business Day.

If on any valuation date (other than the final valuation date), a market disruption event occurs (as defined in the product prospectus supplement) as to the SX5E or if that day is a Currency Disrupted Day, the level of the SX5E and the Exchange Rate for that valuation date will be determined on the next scheduled valuation date on which a market disruption event does not occur and that is not a Currency Disrupted Date. For example, if a market disruption event occurs or is continuing on the first and second scheduled valuation dates, but not on the third scheduled valuation date, then the closing level of the SX5E and the Exchange Rate on the third scheduled valuation date will also be deemed to be the closing level of the SX5E and the Exchange Rate (as applicable) on the first and second scheduled valuation dates. If no further scheduled valuation dates occur after a valuation date on which a market disruption event occurs or is continuing or that is a Currency Disrupted Day, or if a market disruption event occurs or is continuing on the final valuation date or if the final valuation date is a Currency Disrupted Day, then the closing level of the SX5E and the Exchange Rate for that valuation date will be determined (or, if not determinable, estimated by the calculation agent in a manner which is considered to be commercially reasonable under the circumstances) by the calculation agent on that final valuation date, regardless of the occurrence or continuation of a market disruption event on that day or if that day is a Currency Disrupted Day. In such an event, the calculation agent will make a good faith estimate in its sole discretion of the closing level of the SX5E or the Exchange Rate, as applicable, that would have prevailed in the absence of the market disruption event or Currency Disrupted Day.

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Historical Information

The Index. The following graph sets forth the historical performance of the SX5E from January 1, 2014 to January 30, 2019. On January 30, 2019, the closing level of the SX5E was 3,161.74.

We obtained the closing levels below from Bloomberg L.P. We have not independently verified the accuracy or completeness of the information obtained from Bloomberg L.P. The historical levels should not be taken as an indication of future performance, and no assurance can be given as to the closing level of the SX5E on the valuation dates. We cannot give you assurance that the performance of the SX5E will result in the return of any of your initial investment.

PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS.

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The Exchange Rate. The following graph sets forth the historical performance of the Exchange Rate from January 1, 2014 to January 30, 2019. On January 30, 2019, the Exchange Rate was 1.1480.

We obtained the information below from Bloomberg L.P. We have not independently verified the accuracy or completeness of the information obtained from Bloomberg L.P. The historical levels of the Exchange Rate should not be taken as an indication of future performance, and no assurance can be given as to the Exchange Rate on the valuation dates. In addition, the historical exchange rates in the graph below were determined using the rates reported by Bloomberg L.P., and may not be indicative of the Exchange Rate that would be derived from the applicable Reuters page in the manner set forth above.

PAST PERFORMANCE IS NOT INDICATIVE OF FUTURE RESULTS

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About the SX5E

We have derived all information contained in this document regarding the Index, including, without limitation, its make up, method of calculation, and changes in its components, from publicly available sources. The information reflects the policies of, and is subject to change by, the index sponsor. The index sponsor, which o