

ROYAL BANK OF CANADA  
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January 02, 2019

December 2018

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Registration Statement No. 333-227001

PRICING SUPPLEMENT

Dated December 28, 2018

Filed Pursuant to Rule 424(b)(2)

STRUCTURED INVESTMENTS

Opportunities in U.S. and International Equities

\$8,019,960 PLUS Based on a Basket of Two Equity Indices and Six Exchange-Traded Funds due July 3, 2019

Performance Leveraged Upside Securities<sup>SM</sup>

Principal at Risk Securities

The PLUS are senior unsecured obligations of Royal Bank of Canada, do not pay interest, do not guarantee any return of principal at maturity and have the terms described in the accompanying prospectus supplement and prospectus, as supplemented or modified by this document. At maturity, if the value of the basket has increased, investors will receive the stated principal amount of their investment plus a return reflecting the leveraged upside performance of the basket, subject to the maximum payment at maturity. However, if the value of the basket has decreased, investors will lose 1% for every 1% decline. The PLUS are for investors who seek a return linked to the six basket components and who are willing to risk their principal and forgo current income and upside above the maximum payment at maturity in exchange for the leverage feature, which applies to a limited range of positive performance of the basket. Investors may lose their entire initial investment in the PLUS. The PLUS are senior notes issued as part of Royal Bank of Canada's Global Medium-Term Notes, Series H program. All payments on the PLUS are subject to the credit risk of Royal Bank of Canada.

#### SUMMARY TERMS

Issuer: Royal Bank of Canada

The basket is composed of two equity indices and six exchange-traded funds (each, a "basket component") weighted as set forth in the table below.

| Basket components   | Bloomberg symbols | Component weightings | Initial component values* |
|---|-------------------|----------------------|---------------------------|
| Russell 3000 <sup>®</sup> Value Index ("RAV")                                       | RAV               | 25%                  | 1,428.631                 |
| VanEck Vectors <sup>®</sup> Gold Miners ETF ("GDX")                                 | GDX               | 15%                  | \$20.60                   |
| Basket: EURO STOXX <sup>®</sup> Banks Index ("SX7E")                                | SX7E              | 10%                  | 86.76                     |
| iShares <sup>®</sup> MSCI Emerging Markets ETF ("EEM")                              | EEM               | 10%                  | \$39.24                   |
| iShares <sup>®</sup> MSCI Japan ETF ("EWJ")   | EWJ               | 10%                  | \$50.78                   |
| SPDR <sup>®</sup> S&P <sup>®</sup> Oil & Gas Exploration and Production ETF ("XOP") | XOP               | 10%                  | \$26.37                   |
| iShares <sup>®</sup> Nasdaq Biotechnology ETF ("IBB")                               | IBB               | 10%                  | \$94.84                   |
| iShares <sup>®</sup> U.S. Telecommunications ETF ("IYZ")                            | IYZ               | 10%                  | \$26.05                   |

\* The initial component value for each basket component was its official closing value on the pricing date.

Aggregate principal amount: \$8,019,960

Stated principal amount: \$10 per PLUS

Issue price: \$10 per PLUS

Pricing date: December 28, 2018

Original issue date: January 4, 2019 (three business days after the pricing date)

Maturity date: July 3, 2019, subject to adjustment as described in "Additional Terms of the PLUS" below.

|                              |  |                        |                    |
|------------------------------|--|------------------------|--------------------|
| Payment at maturity:         | If the final basket value is greater than the initial basket value,<br>\$10 + \$10 × leverage factor × basket return<br>In no event will the payment at maturity exceed the maximum payment at maturity.<br>If the final basket value is less than or equal to the initial basket value,<br>\$10 + \$10 × basket return<br>This amount will be less than or equal to the stated principal amount of \$10. You will lose some or all of the principal amount if the final basket value is less than the initial basket value. |                        |                    |
| Maximum payment at maturity: | \$10.90 per PLUS (109% of the stated principal amount)   |                        |                    |
| Leverage factor:             | 200%   |                        |                    |
| Basket return:               | (final basket value – initial basket value) / initial basket value   |                        |                    |
| Initial basket value:        | Set equal to 100 on the pricing date   |                        |                    |
| Final basket value:          | 100 × [1 + (sum of the basket component return multiplied by the respective component weighting for each basket component)]  |                        |                    |
| Basket component return:     | With respect to each basket component, (final component value – initial component value) / initial component value   |                        |                    |
| Final component value:       | The official closing value of the relevant basket component on the valuation date  |                        |                    |
| Valuation date:              | June 28, 2019, subject to adjustment for non-trading days and certain market disruption events<br>With respect to the RAV and the SX7E (each, an “Index” and together, the “Indices”), the closing level of the relevant Index; with respect to the GDX, the EEM, the EWJ, the XOP, the IBB and the IYZ (each, an “ETF” and together, the “ETFs”), the closing price of one share of the ETF multiplied by the adjustment factor   |                        |                    |
| Official closing value:      |  |                        |                    |
| Adjustment factor:           | With respect to each ETF, 1.0, subject to adjustment in the event of certain events affecting that ETF. See “Additional Terms of the PLUS—Adjustment factor” below.  |                        |                    |
| CUSIP/ISIN:                  | 78014H128 / US78014H1288   |                        |                    |
| Listing:                     | The PLUS will not be listed on any securities exchange.  |                        |                    |
| Agent:                       | RBC Capital Markets, LLC (“RBCCM”).  |                        |                    |
| Commissions and issue price: | Price to public  | Agent’s commissions    | Proceeds to issuer |
| Per PLUS                     | \$10.000   | \$0.125 <sup>(1)</sup> |                    |
|                              |  | \$0.050 <sup>(2)</sup> | \$9.825            |
| Total                        | \$8,019,960  | \$100,249.50           | \$7,879,610.70     |
|                              |  | \$40,099.80            |                    |

RBCCM, acting as agent for Royal Bank of Canada, will receive a fee of \$0.175 per \$10 stated principal amount<sup>(1)</sup> and will pay to Morgan Stanley Wealth Management (“MSWM”) a fixed sales commission of \$0.125 for each PLUS that MSWM sells. See “Supplemental Information Regarding Plan of Distribution; Conflicts of Interest.”

<sup>(2)</sup> Of the amount per \$10 stated principal amount received by RBCCM, acting as agent for Royal Bank of Canada, RBCCM will pay MSWM a structuring fee of \$0.05 for each PLUS.

The initial estimated value of the PLUS as of the pricing date is \$9.7304 per \$10.00 PLUS, which is less than the price to public. The market value of the PLUS at any time will reflect many factors, cannot be predicted with accuracy, and may be less than this amount.

An investment in the PLUS involves certain risks. See “Risk Factors” beginning on page 5 of this document, and “Risk Factors” beginning on page S-1 of the accompanying prospectus supplement and page 1 of the accompanying prospectus.

You should read this document together with the related prospectus supplement and prospectus, each of which can be accessed via the hyperlinks below, before you decide to invest.

Please also see “Additional Terms of the PLUS” in this document.

Prospectus Supplement dated September 7, 2018

Prospectus dated September 7, 2018

None of the Securities and Exchange Commission, any state securities commission or any other regulatory body has approved or disapproved of the PLUS or passed upon the adequacy or accuracy of this document. Any representation to the contrary is a criminal offense. The PLUS 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 PLUS are not subject to conversion into our common shares under subsection 39.2(2.3) of the Canada Deposit Insurance Corporation Act.

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PLUS Based on a Basket of Two Equity Indices and Six Exchange-Traded Funds due July 3, 2019  
Performance Leveraged Upside Securities<sup>SM</sup>  
Principal at Risk Securities

Investment Summary

Performance Leveraged Upside Securities

Principal at Risk Securities

The PLUS Based on a Basket of Two Equity Indices and Six Exchange-Traded Funds, due July 3, 2019 (the "PLUS") can be used:

§ As an alternative to direct exposure to the basket that enhances returns for a certain range of positive performance of the basket, subject to the maximum payment at maturity.

§ To enhance returns and potentially outperform the basket in a moderately bullish scenario.

§ To achieve similar levels of upside exposure to the basket as a direct investment, subject to the maximum payment at maturity, while using fewer dollars by taking advantage of the leverage factor.

The PLUS are exposed on a 1:1 basis to the negative performance of the basket.

Maturity: Approximately six months

Leverage factor: 200%

Maximum payment at maturity: \$10.90 per PLUS (109% of the stated principal amount)

Minimum payment at maturity: None. Investors may lose their entire initial investment in the PLUS.

Coupon: None

Component weighting: Unequal, as set forth on the cover page.

Key Investment Rationale

These PLUS offer leveraged exposure to the performance of the basket. In exchange for enhanced performance of 200% of the appreciation of the basket, investors forgo performance above the maximum payment at maturity of \$10.90 per PLUS. At maturity, if the value of the basket has increased, investors will receive the stated principal amount of their investment plus a return reflecting the leveraged upside performance of the basket, subject to the maximum payment at maturity. However, if the value of the basket has decreased, investors will lose 1% for every 1% decline. Investors may lose their entire initial investment in the PLUS.

**Leveraged Upside Performance** The PLUS offer investors an opportunity to capture enhanced returns relative to a direct investment in the basket within a certain range of positive performance.

**Upside Scenario** The value of the basket increases and, at maturity, we will pay the stated principal amount of \$10 plus 200% of the basket return, subject to the maximum payment at maturity of \$10.90 per PLUS (109% of the stated principal amount).

**Downside Scenario** The value of the basket declines and, at maturity, we will pay less than the stated principal amount by an amount that is proportionate to the percentage decrease in the value of the basket from the initial basket value. There is no minimum payment at maturity.

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#### Additional Information

You should read this document together with the prospectus dated September 7, 2018, as supplemented by the prospectus supplement dated September 7, 2018, relating to our Senior Global Medium-Term Notes, Series H, of which the PLUS are a part. This document, together with these documents, contains the terms of the PLUS and supersedes all other prior or contemporaneous oral statements as well as any other written materials, including preliminary or indicative pricing terms, correspondence, trade ideas, structures for implementation, sample structures, brochures or other educational materials of ours.

You should rely only on the information provided or incorporated by reference in this document, the prospectus and the prospectus supplement. We have not authorized anyone else to provide you with different information, and we take no responsibility for any other information that others may give you. We and MSWM are offering to sell the PLUS and seeking offers to buy the PLUS only in jurisdictions where it is lawful to do so. The information contained in this document and the accompanying prospectus supplement and prospectus is current only as of their respective dates.

If the information in this document differs from the information contained in the accompanying prospectus supplement or prospectus, you should rely on the information in this document.

You should carefully consider, among other things, the matters set forth in “Risk Factors” in this document and the accompanying prospectus supplement and prospectus, as the PLUS involve risks not associated with conventional debt securities. We urge you to consult your investment, legal, tax, accounting and other advisers before you invest in the PLUS.

You may access these documents on the SEC website at [www.sec.gov](http://www.sec.gov) as follows (or if such 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/1000275/000121465918005973/196181424b3.htm>

·Prospectus Supplement dated September 7, 2018:

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

Our Central Index Key on the SEC website is 1000275.

Please see the section “Documents Incorporated by Reference” on page i of the above prospectus for a description of our filings with the SEC that are incorporated by reference therein.

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How the PLUS Work

Payoff Diagram

The payoff diagram below illustrates the payment at maturity on the PLUS for a range of hypothetical percentage changes in the closing value of the basket. The graph is based on the following terms:

|                              |  |
|------------------------------|--|
| Stated principal amount:     | \$10 per PLUS  |
| Leverage factor:             | 200%   |
| Maximum payment at maturity: | \$10.90 per PLUS (109% of the stated principal amount) |
| Minimum payment at maturity: | None   |

PLUS Payoff Diagram

How it works

Upside Scenario. If the final basket value is greater than the initial basket value, then investors would receive the \$10 stated principal amount plus a return reflecting 200% of the appreciation of the basket over the term of the PLUS, subject to the maximum payment at maturity. Under the terms of the PLUS, an investor would realize the maximum payment at maturity at a final basket value of 104.50% of the initial basket value.

If the basket appreciates 2%, the investor would receive a 4% return, or \$10.40 per PLUS, or 104% of the stated principal amount.

If the basket appreciates 6%, the investor would receive only the maximum payment at maturity of \$10.90 per PLUS, or 109% of the stated principal amount.

Downside Scenario. If the final basket value is less than or equal to the initial basket value, the investor would receive an amount that is less than or equal to the \$10 stated principal amount, based on a 1% loss of principal for each 1% decline in the basket.

If the basket depreciates 30%, the investor would lose 30% of the investor's principal and receive only \$7.00 per PLUS at maturity, or 70% of the stated principal amount.

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Risk Factors

An investment in the PLUS is subject to the risks described below, as well as the risks described under “Risk Factors” in the accompanying prospectus supplement and prospectus. Investors in the PLUS are also exposed to further risks related to the issuer of the PLUS, Royal Bank of Canada, which are described in Royal Bank of Canada’s annual report on Form 40-F for its most recently completed fiscal year, filed with the SEC and incorporated by reference herein. See the categories of risks, identified and disclosed in the management’s discussion and analysis of financial condition and results of operations included in the annual report on Form 40-F for its most recently completed fiscal year. This section (and the management’s discussion and analysis section of the annual report on Form 40-F) describes the most significant risks relating to the PLUS. You should carefully consider whether the PLUS are suited to your particular circumstances.

The PLUS do not pay interest or guarantee return of principal. The terms of the PLUS differ from those of ordinary debt securities in that the PLUS do not pay interest or guarantee payment of the principal amount at maturity. If the § final basket value is less than the initial basket value, the payout at maturity will be an amount in cash that is less than the \$10 stated principal amount of each PLUS by an amount proportionate to the decrease in the value of the basket over the term of the PLUS, and may be zero.

The appreciation potential of the PLUS is limited by the maximum payment at maturity. The appreciation potential of the PLUS is limited by the maximum payment at maturity of \$10.90 per PLUS, or 109% of the stated principal amount. Although the leverage factor provides 200% exposure to any increase in the value of the basket as of the § valuation date above the initial basket value, because the payment at maturity will be limited to 109% of the stated principal amount, any increase in the final basket value over the initial basket value by more than 4.50% will not further increase the return on the PLUS.

The market price of the PLUS will be influenced by many unpredictable factors. Many factors will influence the § value of the PLUS in the secondary market and the price at which RBCCM may be willing to purchase or sell the PLUS in the secondary market, including:

- § the value, volatility and dividend yield, as applicable, of the basket components and the securities represented or held by the basket components;
- § interest and yield rates;
- § exchange rates between the U.S. dollar and the currencies in which the non-U.S. securities represented or held by the § SX7E, GDX, EEM and the EWJ are traded;
- § our creditworthiness, as represented by our credit ratings or as otherwise perceived in the market;
- § time remaining to maturity;
- § geopolitical conditions and economic, financial, political and regulatory or judicial events that affect the basket; and
- § any actual or anticipated changes in our credit ratings or credit spreads.

The values of the basket components may be, and have recently been, volatile, and we can give you no assurance that the volatility will lessen. You may receive less, and possibly significantly less, than the stated principal amount per PLUS if you sell your PLUS prior to maturity.

The PLUS are subject to the credit risk of Royal Bank of Canada, and any actual or anticipated changes to its credit ratings or credit spreads may adversely affect the market value of the PLUS. You are dependent on Royal Bank of Canada’s ability to pay all amounts due on the PLUS at maturity and therefore you are subject to the credit risk of § Royal Bank of Canada. If Royal Bank of Canada defaults on its obligations under the PLUS, your investment would § be at risk and you could lose some or all of your investment. As a result, the market value of the PLUS prior to maturity will be affected by changes in the market’s view of Royal Bank of Canada’s creditworthiness. Any actual or anticipated decline in Royal Bank of Canada’s credit ratings or increase in the credit spreads charged by the market for taking Royal Bank of Canada credit risk is likely to adversely affect the market value of the PLUS.

§ The amount payable on the PLUS is not linked to the value of the basket at any time other than the valuation date. § The final basket value will be based on the closing values of the basket components on the valuation date, subject





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to adjustment for non-trading days and certain market disruption events. Even if the value of the basket appreciates prior to the valuation date but then decreases on the valuation date to a value that is less than the initial basket value, the payment at maturity will be less, and may be significantly less, than it would have been had the payment at maturity been linked to the value of the basket prior to that decrease. Although the actual value of the basket on the maturity date or at other times during the term of the PLUS may be higher than the final basket value, the payment at maturity will be based solely on the closing value of the basket on the valuation date.

Changes in the values of the basket components may offset each other. Movements in the values of the basket components may not correlate with each other. At a time when the value of one or more of the basket components increases, the values of one or more of the other basket components may not increase as much or may even decline. § Therefore, in calculating the final basket value and the payment at maturity, increases in the value of one or more of the basket components may be moderated, or more than offset, by lesser increases or declines in the values of the other basket components. Furthermore, the basket components are not equally weighted. As a result, a percentage change in the final component value of the RAV and the GDX will have a greater impact on the final basket value than will a similar percentage change in the final component values of the other basket components.

The initial estimated value of the PLUS is less than the price to the public. The initial estimated value that is set forth on the cover page of this document does not represent a minimum price at which we, RBCCM or any of our affiliates would be willing to purchase the PLUS in any secondary market (if any exists) at any time. If you attempt to sell the PLUS prior to maturity, their market value may be lower than the price you paid for them and the initial estimated value. This is due to, among other things, changes in the value of the basket, the borrowing rate we pay to issue securities of this kind, and the inclusion in the price to the public of the agent's commissions and the estimated costs relating to our hedging of the PLUS. These factors, together with various credit, market and economic factors § over the term of the PLUS, are expected to reduce the price at which you may be able to sell the PLUS in any secondary market and will affect the value of the PLUS 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 PLUS prior to maturity may be less than your original purchase price, as any such sale price would not be expected to include the agent's commissions and the hedging costs relating to the PLUS. In addition to bid-ask spreads, the value of the PLUS determined for any secondary market price is expected to be based on the secondary rate rather than the internal funding rate used to price the PLUS and determine the initial estimated value. As a result, the secondary price will be less than if the internal funding rate was used. The PLUS are not designed to be short-term trading instruments. Accordingly, you should be able and willing to hold your PLUS to maturity.

Our initial estimated value of the PLUS is an estimate only, calculated as of the pricing date. The initial estimated value of the PLUS is based on the value of our obligation to make the payments on the PLUS, together with the mid-market value of the derivative embedded in the terms of the PLUS. See "Structuring the PLUS" below. Our § estimate is based on a variety of assumptions, including our credit spreads, expectations as to dividends, interest rates and volatility, and the expected term of the PLUS. These assumptions are based on certain forecasts about future events, which may prove to be incorrect. Other entities may value the PLUS or similar securities at a price that is significantly different than we do.

The value of the PLUS 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 PLUS in any secondary market, if any, should be expected to differ materially from the initial estimated value of your PLUS.

Adjustments to the basket components could adversely affect the value of the PLUS. The sponsors of the relevant Indices (the "index sponsors") and the investment advisors of the ETFs (the "investment advisors") may add, delete or § substitute the stocks represented or held by the basket components, or make other methodological changes. Further, the index sponsors and the investment advisors may discontinue or suspend calculation or publication of the applicable Indices or discontinue or suspend maintenance of the applicable ETFs at any time. Any of these actions could affect the value of and the return on the PLUS.

We have no affiliation with the index sponsors and the investment advisors and will not be responsible for any actions taken by them. We have no affiliation with the index sponsors and the investment advisors, and they will not be involved in the offering of the PLUS. Consequently, we have no control over their actions, including any actions § of the type that could affect the basket components, and therefore, the value of the basket components. The index sponsors and the investment advisors have no obligation of any sort with respect to the PLUS. Thus, they have no obligation to

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take your interests into consideration for any reason, including in taking any actions that might affect the value of the PLUS.

Investing in the PLUS is not equivalent to investing in the securities represented or held by the basket components. Investing in the PLUS is not equivalent to investing in the securities represented or held by any basket component. § Investors in the PLUS will not have voting rights or rights to receive dividends or other distributions or any other rights with respect to the securities represented or held by any basket component.

Each ETF and its underlying index are different. The performance of each ETF may not exactly replicate the performance of its underlying index, because each ETF will reflect transaction costs and fees that are not included in the calculation of its underlying index. It is also possible that the performance of an ETF may not fully replicate or § may in certain circumstances diverge significantly from the performance of its underlying index due to the temporary unavailability of certain securities in the secondary market, the performance of any derivative instruments contained in that ETF or due to other circumstances.

An investment in the PLUS is subject to management risk. Each ETF is not managed according to traditional methods of “active” investment management, which involve the buying and selling of securities based on economic, financial and market analysis and investment judgment. Instead, each ETF, utilizing a “passive” or indexing § investment approach, attempts to approximate the investment performance of its underlying index by investing in a portfolio of securities that generally replicates its underlying index. Therefore, unless a specific security is removed from its underlying index, the applicable ETF generally would not sell a security because the security’s issuer was in financial trouble. In addition, each ETF is subject to the risk that the investment strategy of its investment advisor may not produce the intended results.

The investment strategy represented by the RAV may not be successful. The RAV measures the performance of the stocks included in the Russell 3000<sup>®</sup> Index that its sponsor determines to be “value” stocks, as discussed in more detail below. However, stocks that are considered to be value stocks may not appreciate in value. In addition, stocks that are considered to be value stocks may have lower growth potential than other securities, which may cause the level of the RAV to decrease over the term of the PLUS. Moreover, even if a value strategy on the stocks included in the § Russell 3000<sup>®</sup> Index would generally be successful, the manner in which the RAV implements its strategy may prove to be unsuccessful. As described in more detail below, the methodology of the RAV has specified parameters that are used to determine whether a stock should be considered a “value” stock. These parameters may not effectively implement its value strategy, and there can be no assurance that it will select stocks that are value oriented, or that this methodology will not underperform any alternative value strategy. Moreover, an investment linked to the RAV may underperform an alternative investment linked to the Russell 3000<sup>®</sup> Index.

There are risks associated with investments in securities linked to the value of foreign equity securities. The SX7E, the GD<sup>X</sup>, the EEM and the EWJ include equity securities 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 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.

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The PLUS are subject to exchange rate risk. Because securities held by the SX7E, the GDX, the EEM and the EWJ are traded in currencies other than U.S. dollars, and the PLUS are denominated in U.S. dollars, the amount payable on the PLUS at maturity may be exposed to fluctuations in the exchange rate between the U.S. dollar and each of the § currencies in which those securities 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 PLUS at maturity. An investor's net exposure will depend on the extent to which the currencies in which the relevant securities are denominated either strengthen or weaken against the U.S. dollar and the relative weight of each security.

An investment in the PLUS is subject to risks associated with the European financial services industry. All of the equity securities comprising the SX7E are issued by companies in the European financial services sector. As a result, the equity securities that will determine the return on this index are concentrated in one sector. The profitability of these companies is largely dependent on the availability and cost of capital, and can fluctuate significantly, § particularly when market interest rates change. Credit losses resulting from financial difficulties of these companies' customers can negatively impact the sector. In addition, adverse economic, business, or political developments affecting the European and international markets, could have a major effect on the level of this index. As a result of these factors, the value of the PLUS may be subject to greater volatility and be more adversely affected by economic, political or regulatory events relating to the financial services sector.

An investment in the PLUS is subject to risks associated with the gold and silver mining industries. All or § substantially all of the stocks held by the GDX are issued by gold or silver mining companies. As a result, the stocks § that will determine the performance of the GDX are concentrated in one sector. Although an investment in the PLUS will not give holders any ownership or other direct interests in the stocks held by the GDX, the return on the PLUS will be subject to certain risks associated with a direct equity investment in gold or silver mining companies.

In addition, these companies are highly dependent on the price of gold or silver, as applicable. These prices fluctuate widely and may be affected by numerous factors. Factors affecting gold prices include economic factors, including, among other things, the structure of and confidence in the global monetary system, expectations of the future rate of inflation, the relative strength of, and confidence in, the U.S. dollar (the currency in which the price of gold is generally quoted), interest rates and gold borrowing and lending rates, and global or regional economic, financial, political, regulatory, judicial or other events. Gold prices may also be affected by industry factors such as industrial and jewelry demand, lending, sales and purchases of gold by the official sector, including central banks and other governmental agencies and multilateral institutions which hold gold, levels of gold production and production costs, and short-term changes in supply and demand because of trading activities in the gold market. Factors affecting silver prices include general economic trends, technical developments, substitution issues and regulation, as well as specific factors including industrial and jewelry demand, expectations with respect to the rate of inflation, the relative strength of the U.S. dollar (the currency in which the price of silver is generally quoted) and other currencies, interest rates, central bank sales, forward sales by producers, global or regional political or economic events, and production costs and disruptions in major silver producing countries such as Mexico and Peru. The supply of silver consists of a combination of new mine production and existing stocks of bullion and fabricated silver held by governments, public and private financial institutions, industrial organizations and private individuals. In addition, the price of silver has on occasion been subject to very rapid short-term changes due to speculative activities. From time to time, above-ground inventories of silver may also influence the market.

On the other hand, the GDX reflects the performance of shares of gold and silver mining companies and not gold bullion or silver bullion. The GDX may under- or over-perform gold bullion and/or silver bullion over the term of the PLUS.

§ The XOP is subject to risks relating to the energy sector. The issuers of the stocks held by the XOP develop and produce, among other things, crude oil and natural gas, and provide, among other things, drilling services and other services related to oil and gas production and distribution. Stock prices for these types of companies are affected by supply and demand both for their specific product or service and for oil and gas products in general. The price of oil and gas, exploration and production spending, government regulation, world events and economic conditions will

likewise affect the performance of these companies. Correspondingly, the stocks of companies in this sector are subject to swift price fluctuations caused by events relating to international politics, energy conservation, the success of exploration projects and tax and other governmental regulatory policies. Weak demand for the companies' products or services or for oil and gas products and services in general, as well as negative developments in these other areas, would adversely impact the value of the stocks held by the XOP, the market price of the XOP, and the value of the PLUS.

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Risks associated with the biotechnology and pharmaceutical industries. — The IBB invests in biotechnology and pharmaceutical companies. Market or economic factors impacting biotechnology and pharmaceutical companies and companies that rely heavily on the healthcare industry could have a major effect on the value of the IBB's investments. The healthcare sector may be affected by government regulations and government healthcare programs, increases or decreases in the cost of medical products and services and product liability claims, among other factors. § Many healthcare companies are heavily dependent on patent protection, and the expiration of a patent may adversely affect their profitability. Healthcare companies are subject to competitive forces that may result in price discounting, and may be thinly capitalized and susceptible to product obsolescence. Companies in the pharmaceuticals industry may be affected by industry competition, dependencies on a limited number of products, obsolescence of products, government approvals and regulations, loss or impairment of intellectual property rights and litigation regarding product liability.

An investment in the PLUS is subject to risks associated with the telecommunications industry. Because the IYZ is a basket component, the PLUS are subject to a variety of risks relating to the telecommunications sector in the U.S. For example, the U.S. telecommunications market is characterized by significant competition, and regulation by § various state and federal regulatory authorities. Companies in the telecommunications sector may encounter distressed cash flows due to the need to commit substantial capital to meet increasing competition, particularly in developing new products and services using new technology. Technological innovations may make the products and services of certain telecommunications companies obsolete.

Telecommunications providers are generally required to obtain franchises or licenses in order to provide services in a given location. Licensing and franchise rights in the telecommunications sector are limited, which may provide a disadvantage to some market participants. Limited availability of these rights, high barriers to market entry and regulatory oversight, among other factors, have led to consolidation of companies within the sector, which could lead to further regulation or other negative effects in the future. Any of these factors could have an adverse effect on the value of the PLUS.

The PLUS will not be listed on any securities exchange and secondary trading may be limited. The PLUS will not be listed on any securities exchange. Therefore, there may be little or no secondary market for the PLUS. RBCCM may, but is not obligated to, make a market in the PLUS, and, if it chooses to do so at any time, it may cease doing so. When it does make a market, it will generally do so for transactions of routine secondary market size at prices based on its estimate of the current value of the PLUS, taking into account its bid/offer spread, our credit spreads, market § volatility, the notional size of the proposed sale, the cost of unwinding any related hedging positions, the time remaining to maturity and the likelihood that it will be able to resell the PLUS. Even if there is a secondary market, it may not provide enough liquidity to allow you to trade or sell the PLUS easily. Because we do not expect that other broker-dealers will participate significantly in the secondary market for the PLUS, the price at which you may be able to trade your PLUS is likely to depend on the price, if any, at which RBCCM is willing to transact. If, at any time, RBCCM were to cease making a market in the PLUS, it is likely that there would be no secondary market for the PLUS. Accordingly, you should be willing to hold your PLUS to maturity.

Historical values of the basket components should not be taken as an indication of their respective future values during the term of the PLUS. The trading prices of the equity securities comprising the basket components will § determine the value of the relevant basket component at any given time. As a result, it is impossible to predict whether the value of any basket component will rise or fall. Trading prices of the equity securities comprising the basket components will be influenced by complex and interrelated political, economic, financial and other factors.

§ Hedging and trading activity by us and our subsidiaries could potentially adversely affect the value of the PLUS.

One or more of our subsidiaries and/or third-party dealers expect to carry out hedging activities related to the PLUS (and possibly to other instruments linked to the basket, the basket components, or the securities which they represent or hold), including trading in those securities as well as in other related instruments. Some of our subsidiaries also may trade those securities and other financial instruments related to the basket components on a regular basis as part of their general broker-dealer and other businesses. Any of these hedging or trading activities on or prior to the

pricing date could potentially have affected the initial component values and, therefore, could have increased the value at which the basket components must close on the valuation date so that investors do not suffer a loss on their initial investment in the PLUS. Additionally, such hedging or trading activities during the term of the PLUS, including on the valuation date, could adversely affect the value of the basket on the valuation date and, accordingly, the amount of cash an investor will receive at maturity, if any.

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Our business activities may create conflicts of interest. We and our affiliates may engage in trading activities related to the basket components, the securities represented or held by the basket components that are not for the account of holders of the PLUS or on their behalf. These trading activities may present a conflict between the holders' interest in § the PLUS and the interests we and our affiliates will have in proprietary accounts, in facilitating transactions, including options and other derivatives transactions, for our customers and in accounts under our management.

These trading activities could be adverse to the interests of the holders of the PLUS.

We and our affiliates may presently or from time to time engage in business with one or more of the issuers of the securities represented or held by the basket components. This business may include extending loans to, or making equity investments in, such companies or providing advisory services to such companies, including merger and acquisition advisory services. In the course of business, we and our affiliates may acquire non-public information relating to these companies, which we have no obligation to disclose to you and, in addition, one or more of our affiliates may publish research reports about these companies. Neither we nor the agent have made any independent investigation regarding any matters whatsoever relating to the issuers of the securities represented or held by the basket components.

Moreover, we and our affiliates may have published, and in the future expect to publish, research reports with respect to the basket components or the securities represented or held by the basket 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 PLUS. Any of these activities by us or one or more of our affiliates may affect the value of the basket components and, therefore, the market value of the PLUS.

The calculation agent, which is a subsidiary of the issuer, will make determinations with respect to the PLUS, which may create a conflict of interest. Our wholly owned subsidiary, RBCCM, will serve as the calculation agent. As the calculation agent, RBCCM determined the initial component value of each basket component and will determine the final component value and basket component return of each basket component, the final basket value, the basket return, and the amount of cash, if any, you will receive at maturity. Moreover, certain determinations made by § RBCCM, in its capacity as the calculation agent, may require it to exercise discretion and make subjective judgments, such as with respect to the occurrence or non-occurrence of market disruption events and the selection of a successor index or successor to any ETF or the calculation of the final component value in the event of a market disruption event or discontinuance of a basket component. These potentially subjective determinations may adversely affect the payout to you at maturity, if any. For further information regarding these types of determinations see "Additional Terms of the PLUS" below.

The antidilution adjustments that the calculation agent is required to make do not cover every event that could affect an ETF. RBCCM, as the calculation agent, will adjust the amount payable at maturity for certain events affecting an § ETF. However, the calculation agent will not make an adjustment for every event that could affect an ETF. If an event occurs that does not require the calculation agent to adjust the amount payable at maturity, the market price of the PLUS may be materially and adversely affected.

Significant aspects of the tax treatment of the PLUS are uncertain. The tax treatment of an investment in the PLUS is uncertain. We do not plan to request a ruling from the Internal Revenue Service (the "IRS") or from the Canada § Revenue Agency regarding the tax treatment of an investment in the PLUS, and the IRS, the Canada Revenue Agency or a court may not agree with the tax treatment described in this document.

The IRS has issued a notice indicating that it and the U.S. Treasury Department are actively considering whether, among other issues, a holder should be required to accrue interest over the term of an instrument such as the PLUS even though that holder will not receive any payments with respect to the PLUS until maturity and whether all or part of the gain a holder may recognize upon sale, exchange or maturity of an instrument such as the PLUS should be treated as ordinary income. The outcome of this process is uncertain and could apply on a retroactive basis.

Please read carefully the sections entitled "Canadian Federal Income Tax Consequences" and "Supplemental Discussion of U.S. Federal Income Tax Consequences" in this document, the section entitled "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.

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#### Additional Terms of the PLUS

Please read this information in conjunction with the summary terms on the front cover of this document.

#### Additional Provisions

With respect to any Index and any relevant successor index, a “market disruption event” means:

- a suspension, absence or material limitation of trading of equity securities then constituting 20% or more of the level of the Index (or the relevant successor index) on the relevant exchanges (as defined below) for such securities for more than two hours of trading during, or during the one hour period preceding the close of, the principal trading session on such relevant exchange; or
- a breakdown or failure in the price and trade reporting systems of any relevant exchange as a result of which the reported trading prices for equity securities then constituting 20% or more of the level of the Index (or the relevant successor index) during the one hour preceding the close of the principal trading session on such relevant exchange are materially inaccurate; or
- a suspension, absence or material limitation of trading on the primary exchange or market for trading in futures or options contracts related to the Index (or the relevant successor index) for more than two hours of trading during, or during the one hour period preceding the close of, the principal trading session on such exchange or market; or
- a decision to permanently discontinue trading in the relevant futures or options contracts; in each case as determined by the calculation agent in its sole discretion; and
- a determination by the calculation agent in its sole discretion that the event described above materially interfered with our ability or the ability of any of our affiliates to adjust or unwind all or a material portion of any hedge with respect to the PLUS.

Market  
disruption  
events with  
respect to an  
Index:

For purposes of determining whether a market disruption event with respect to an Index (or the relevant successor index) exists at any time, if trading in a security included in the Index (or the relevant successor index) is materially suspended or materially limited at that time, then the relevant percentage contribution of that security to the level of the Index (or the relevant successor index) will be based on a comparison of (a) the portion of the level of the Index (or the relevant successor index) attributable to that security relative to (b) the overall level of the Index (or the relevant successor index), in each case immediately before that suspension or limitation.

For purposes of determining whether a market disruption event with respect to an Index (or the relevant successor index) has occurred:

- a limitation on the hours or number of days of trading will not constitute a market disruption event if it results from an announced change in the regular business hours of the relevant exchange, or the primary exchange or market for trading in futures or options contracts related to the Index (or the relevant successor index);
- limitations pursuant to the rules of any relevant exchange similar to NYSE Rule 80B (or any applicable rule or regulation enacted or promulgated by any other self-regulatory organization or any government agency of scope similar to NYSE Rule 80B as determined by the calculation agent) on trading during

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significant market fluctuations will constitute a suspension, absence or material limitation of trading;

- a suspension of trading in futures or options contracts on the Index (or the relevant successor index) by the primary exchange or market trading in such contracts by reason of:

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

will, in each such case, constitute a suspension, absence or material limitation of trading in futures or options contracts related to the Index (or the relevant successor index); and

- a “suspension, absence or material limitation of trading” on any relevant exchange or on the primary exchange or market on which futures or options contracts related to the Index (or the relevant successor index) are traded will not include any time when such exchange or market is itself closed for trading under ordinary circumstances.

“Relevant exchange” means, with respect to an Index or any relevant successor index, the primary exchange or market of trading for any security (or any combination thereof) then included in the Index or such successor index, as applicable.

Adjustment  
factor:

With respect to each ETF, 1.0, subject to adjustment. If an ETF is subject to a stock split or reverse stock split, then once such split has become effective, the adjustment factor will be adjusted to equal the product of the prior adjustment factor and the number of shares issued in such stock split or reverse stock split with respect to one share of that ETF. No such adjustment to the adjustment factor will be required unless such adjustment would require a change of at least 0.1% in the amount being adjusted as then in effect. Any number so adjusted will be rounded to the nearest one hundred-thousandth with five one millionths being rounded upward.

Closing price  
of an ETF:

The closing price for one share of an ETF (or one unit of any other security for which a closing price must be determined with respect to this basket component) on any trading day means:

- if the shares of that ETF (or any such other security) are listed or admitted to trading on a national securities exchange, the last reported sale price, regular way, of the principal trading session on such day on the principal U.S. securities exchange registered under the Exchange Act on which the shares of that ETF (or any such other security) are listed or admitted to trading, or
- if the shares of that ETF (or any such other security) are not listed or admitted to trading on any national securities exchange but are included in the OTC Bulletin Board Service (the OTC Bulletin Board) operated by the Financial Industry Regulatory Authority (FINRA), the last reported sale price of the principal trading session on the OTC Bulletin Board on such day.

If the shares of an ETF (or any such other security) are listed or admitted to trading on any national securities exchange but the last reported sale price, as applicable, is not available pursuant to the preceding sentence, then the closing price for one share of that ETF (or one unit of any such other security) on any trading day will mean the last reported sale price of the principal trading session on the over-the-counter market or the OTC Bulletin Board on such day.

If the last reported sale price for an ETF (or any such other security) is not available pursuant to either of the two preceding sentences, then the closing price for any trading day will be the mean, as determined by the calculation agent, of the firm bid prices for that ETF (or any such other security) obtained from as many recognized dealers in such

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security, but not exceeding three, as will make such bid prices available to the calculation agent. Bids of the Issuer or any of its affiliates may be included in the calculation of such mean, but only to the extent that any such bid is the highest of the bids obtained. The term “OTC Bulletin Board” will include any successor service thereto, or, if applicable, the OTC Reporting Facility operated by FINRA.

If, for any basket component (an “affected basket component”), (i) a market disruption event occurs on the valuation date or (ii) that day is determined by the calculation agent not to be a trading day by reason of an extraordinary event, occurrence, declaration, or otherwise, the calculation agent will determine the official closing value of the basket component for the valuation date, and as a result, the final basket value, as follows:

Postponement of the valuation date:

- The official closing value of each basket component that is not an affected basket component will be its official closing value on the valuation date.
- The official closing value of each basket component that is an affected basket component for the valuation date will be deemed to be the official closing value of the basket component on the immediately succeeding trading day during which no market disruption event shall have occurred or is continuing to occur; provided that the final basket value will be determined (or, if not determinable, estimated) by the calculation agent in a manner which the calculation agent considers commercially reasonable under the circumstances on a date no later than the fifth scheduled trading day after the scheduled valuation date, regardless of the occurrence of a market disruption event on that day.

Market disruption events with respect to an ETF: With respect to an ETF, a market disruption event, as determined by the calculation agent in its sole discretion, means the occurrence or existence of any of the following events:

- a suspension, absence or material limitation of trading in the shares of that ETF on its primary market 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;
- a suspension, absence or material limitation of trading in option or futures contracts relating to that ETF, if available, 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; or
- the shares of that ETF do not trade on the NYSE Arca, the Nasdaq Global Market or what was the primary market for the shares of that ETF, as determined by the calculation agent in its sole discretion;
- any other event, if the calculation agent determines in its sole discretion that the event materially interferes with our ability or the ability of any of our affiliates or hedge counterparties to unwind all or a material portion of a hedge with respect to the PLUS that such party or its respective hedge counterparties have effected or may effect as described below under “Use of Proceeds and Hedging.”

The following events will not be market disruption events:

- a limitation on the hours or number of days of trading in the shares of that ETF on its primary market, but only if the limitation results from an announced change in the regular business hours of the relevant market; and
- a decision to permanently discontinue trading in the option or futures contracts relating to the shares of that ETF.

For this purpose, a “suspension, absence or material limitation of trading” in the primary



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securities market on which option or futures contracts relating to the shares of an ETF, if available, are traded will not include any time when that market is itself closed for trading under ordinary circumstances. In contrast, a suspension or limitation of trading in option or futures contracts relating to the shares of an ETF, if available, in the primary market for those contracts, by reason of any of:

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

will constitute a suspension or material limitation of trading in option or futures contracts, as the case may be, relating to the shares of that ETF in the primary market for those contracts.

Indices. If an index sponsor discontinues publication of the relevant Index and an 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 Index (such index being referred to herein as a “successor index”), then the closing level of the Index on the valuation date will be determined by reference to the level of such successor index at the close of trading on the relevant exchange for the successor index on such day.

Upon any selection by the calculation agent of a successor index, the calculation agent will cause written notice to be promptly furnished to the trustee, to us and to the holders of the PLUS.

If an index sponsor discontinues publication of the relevant Index prior to, and that discontinuation is continuing on the valuation date, and the calculation agent determines, in its sole discretion, that no successor index is available at that time or the calculation agent has previously selected a successor index and publication of that successor index is discontinued prior to, and that discontinuation is continuing on, the valuation date, then the calculation agent will determine the closing level of the Index for that date. The closing level of the Index will be computed by the calculation agent in accordance with the formula for and method of calculating the Index or successor index, as applicable, last in effect prior to the discontinuation, using the closing price (or, if trading in the relevant securities has been materially suspended or materially limited, the calculation agent’s good faith estimate of the closing price that would have prevailed but for the suspension or limitation) at the close of the principal trading session on that date of each security most recently included in the Index or successor index, as applicable.

Discontinuation  
of/adjustments to  
the basket  
components:

If at any time the method of calculating an Index or a successor index, or the level thereof, is changed in a material respect, or if an Index or a successor index is in any other way modified so that the Index or successor index does not, in the opinion of the calculation agent, fairly represent the level of the Index or successor index had those changes or modifications not been made, then the calculation agent will, at the close of business in New York City on the date on which the closing level of the Index is to be determined, make any calculations and adjustments as, in the good faith judgment of the calculation agent, may be necessary in order to arrive at a level of a stock index comparable to the Index or successor index, as the case may be, as if those changes or modifications had not been made, and calculate the closing level of the Index with reference to the Index or such successor index, as adjusted. Accordingly, if the method of calculating the Index or a successor index is modified so that the level of the Index or such successor index is a fraction of what it would have been if there had been no such modification (e.g., due to a split in the Index), then the calculation agent will adjust its calculation of the Index or such successor index in order to arrive at a level of the Index or such successor index as if





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there had been no such modification (e.g., as if such split had not occurred).

Notwithstanding these alternative arrangements, discontinuation the publication of or modification of any Index or successor index, as applicable, may adversely affect the value of the PLUS.

ETFs. If an ETF is discontinued and the sponsor or another entity establishes or designates a successor or substitute fund that the calculation agent determines, in its sole discretion, to be comparable to that ETF (the successor fund), then the calculation agent will substitute the successor fund for that ETF and determine the closing price of that ETF on the valuation date as described above under “—Closing price of an ETF.”

If an ETF is discontinued and:

- the calculation agent does not select a successor fund, or
- the successor fund is no longer traded or listed on any of the relevant trading days,

the calculation agent will compute a substitute price for that ETF in accordance with the procedures last used to calculate the price of that ETF before any discontinuation but using only those securities that were held by that ETF prior to such discontinuation. If a successor fund is selected or the calculation agent calculates a price as a substitute for that ETF as described below, the successor fund or price will be used as a substitute for that ETF for all purposes going forward, including for purposes of determining whether a market disruption event exists, even if that ETF is re-established, unless the calculation agent in its sole discretion decides to use the re-established ETF.

If an ETF is discontinued before the valuation date and the calculation agent determines that no successor fund is available at that time, then on each trading day until the earlier to occur of:

- the determination of the final component value, or
- a determination by the calculation agent that a successor fund is available,

the calculation agent will determine the price that would be used in computing the closing price of that ETF as described in the preceding paragraph as if that day were a trading day. The calculation agent will cause notice of each price to be published not less often than once each month in The Wall Street Journal, another newspaper of general circulation or a website or webpage available to holders of the PLUS, and arrange for information with respect to these prices to be made available by telephone.

Notwithstanding these alternative arrangements, discontinuation of the operation of an ETF would be expected to adversely affect the value of, liquidity of and trading in the PLUS.

**Business day:** A business day means a Monday, Tuesday, Wednesday, Thursday or Friday that is not a day on which banking institutions in New York City generally are authorized or obligated by law, regulation or executive order to close.

**Trading day:** With respect to an Index, the trading day means a day, as determined by the calculation agent, on which trading is generally conducted on (i) the relevant exchanges for securities comprising the Index or the successor index and (ii) the exchanges on which futures or options contracts related to the Index or the successor index are traded, other than a day on which trading on such relevant exchange or exchange on which such futures or options contracts are traded is scheduled to close prior to its regular weekday closing time.

With respect to an ETF, a trading day means any day on which the exchange and each

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related exchange are scheduled to be open for their respective regular trading sessions.

The exchange means the primary organized exchange or quotation system for trading an ETF, any successor to such exchange or quotation system or any substitute exchange or quotation system to which trading in such shares has temporarily relocated (provided that the calculation agent has determined that there is comparable liquidity relative to such shares on that temporary substitute exchange or quotation system as on the original exchange).

A related exchange means each exchange or quotation system on which futures or options contracts relating to an ETF are traded, any successor to such exchange or quotation system or any substitute exchange or quotation system to which trading in the futures or options contracts relating to that ETF has temporarily relocated (provided that the calculation agent has determined that there is comparable liquidity relative to the futures or options contracts relating to that ETF on that temporary substitute exchange or quotation system as on the original related exchange).

**Default interest upon acceleration:** In the event we fail to make a payment on the maturity date, any overdue payment in respect of such payment on the PLUS will bear interest until the date upon which all sums due are received by or on behalf of the relevant holder, at a rate per annum which is the rate for deposits in U.S. dollars for a period of three months which appears on the Reuters Screen LIBOR page as of 11:00 a.m. (London time) on the first business day following such failure to pay. Such rate shall be determined by the calculation agent. If interest is required to be calculated for a period of less than one year, it will be calculated on the basis of a 360-day year consisting of the actual number of days in the period.

**Events of default and acceleration:** If the maturity of the PLUS is accelerated upon an event of default under the Indenture, the amount payable upon acceleration will be determined by the calculation agent. Such amount will be calculated as if the date of declaration of acceleration were the valuation date.

**Minimum ticketing size:** \$1,000 / 100 PLUS

**Additional amounts:** We will pay any amounts to be paid by us on the PLUS 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 PLUS, 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 PLUS 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;
- (ii) is subject to such taxes by reason of its being connected presently or formerly with Canada or any province or territory thereof otherwise than by reason of the holder’s activity in connection with

purchasing the PLUS, the holding of the PLUS or the receipt of payments thereunder;  
(iii) 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

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Bank of Canada (generally a person will be a “specified shareholder” for this purpose if that person, either alone or together with persons with whom the person does not deal at arm’s length, owns 25% or more of (a) our voting shares, or (b) the fair market value of all of our issued and outstanding shares); (iv) presents such security for payment (where presentation is required) more than 30 days after the relevant date (except to the extent that the holder thereof would have been entitled to such Additional Amounts on presenting a security for payment on the last day of such 30 day period); for this purpose, the “relevant date” in relation to any payments on any security means:

- a. the due date for payment thereof, or
- b. if the full amount of the monies payable on such date has not been received by the trustee on or prior to such due date, the date on which the full amount of such monies has been received and notice to that effect is given to holders of the PLUS in accordance with the Indenture;
- (v) 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 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
- (vi) is subject to deduction or withholding on account of any tax, assessment, or other governmental charge that is imposed or withheld by reason of the application of Section 1471 through 1474 of the United States Internal Revenue Code of 1986, as amended (the “Code”) (or any successor provisions), any regulation, pronouncement, or agreement thereunder, official interpretations thereof, or any law implementing an intergovernmental approach thereto, whether currently in effect or as published and amended from time to time.

For 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 PLUS at maturity.

We will also make such withholding or deduction and remit the full amount deducted or withheld to the relevant authority in accordance with applicable law. We will furnish to the trustee, within 30 days after the date the payment of any taxes is due pursuant to applicable law, certified copies of tax receipts evidencing that such payment has been made or other evidence of such payment satisfactory to the trustee. We will indemnify and hold harmless each holder of the PLUS (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 PLUS, and (y) any taxes levied or imposed and paid by such holder with respect to any reimbursement under (x) above, but excluding any such taxes on such holder’s net income or capital.

For additional information, see the section entitled “Tax Consequences—Canadian Taxation” in the accompanying prospectus.

Form of the PLUS: Book-entry

Trustee: The Bank of New York Mellon

Calculation agent: RBCCM. The calculation agent will make all determinations regarding the PLUS. 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. You will not be entitled to any compensation from us for any loss suffered as a result of any of the above determinations or confirmations by the calculation agent.

Contact: MSWM clients may contact their local MSWM branch office or our principal executive offices at 1585 Broadway, New York, New York 10036 (telephone number 1-(866)-477-4776). All other clients may contact their local brokerage representative. Third-party distributors may contact Morgan Stanley Structured Investment Sales at 1-(800)-233-1087.

Validity of the PLUS: In the opinion of Norton Rose Fulbright Canada LLP, the issue and sale of the PLUS has been duly authorized by all necessary corporate action of the Bank in conformity with the Indenture,

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Principal at Risk Securities

and when the PLUS have been duly executed, authenticated and issued in accordance with the Indenture and delivered against payment therefor, the PLUS will be validly issued and, to the extent validity of the PLUS is a matter governed by the laws of the Province of Ontario or Québec, or the laws of Canada applicable therein, and will be valid obligations of the Bank, subject to equitable remedies which may only be granted at the discretion of a court of competent authority, subject to applicable bankruptcy, to rights to indemnity and contribution under the PLUS or the Indenture which may be limited by applicable law; to insolvency and other laws of general application affecting creditors' rights, to limitations under applicable limitations statutes, and limitations as to the currency in which judgments in Canada may be rendered, as prescribed by the Currency Act (Canada). This opinion is given as of the date hereof and is limited to the laws of the Provinces of Ontario and Québec and the federal laws of Canada applicable thereto. In addition, this opinion is subject to customary assumptions about the Trustee's authorization, execution and delivery of the Indenture and the genuineness of signatures and certain factual matters, all as stated in the letter of such counsel dated September 7, 2018, which has been filed as Exhibit 5.1 to Royal Bank's Form 6-K filed with the SEC dated September 7, 2018.

In the opinion of Morrison & Foerster LLP, when the PLUS have been duly completed in accordance with the Indenture and issued and sold as contemplated by the prospectus supplement and the prospectus, the PLUS will be valid, binding and enforceable obligations of Royal Bank, entitled to the benefits of the Indenture, subject to applicable bankruptcy, insolvency and similar laws affecting creditors' rights generally, concepts of reasonableness and equitable principles of general applicability (including, without limitation, concepts of good faith, fair dealing and the lack of bad faith). This opinion is given as of the date hereof and is limited to the laws of the State of New York. This opinion is subject to customary assumptions about the Trustee's authorization, execution and delivery of the Indenture and the genuineness of signatures and to such counsel's reliance on the Bank and other sources as to certain factual matters, all as stated in the legal opinion dated September 7, 2018, which has been filed as Exhibit 5.2 to the Bank's Form 6-K dated September 7, 2018.

Terms  
incorporated  
in the master  
note:

All of the terms in "Summary Terms" (except the item captioned "Commissions and issue price") and the terms above the item captioned "Contact" in "Additional Terms of the PLUS" of this pricing supplement, and the section "Supplemental Discussion of U.S. Federal Income Tax Consequences."

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Principal at Risk Securities

Information About the Basket Components

All disclosures contained in this document regarding the basket components, including, without limitation, their make-up, method of calculation, and changes in their components, have been derived from publicly available sources. The information reflects the policies of, and is subject to change by, the applicable index sponsor or investment advisor. Each of these entities has no obligation to continue to publish, and may discontinue publication of, the applicable basket component. The consequences of an index sponsor or an investment advisor discontinuing publication or making other changes to a basket component are discussed above in the section entitled "Discontinuation of/adjustments to the basket components" or "adjustment factor," as applicable. Neither we nor RBCCM accepts any responsibility for the calculation, maintenance or publication of any basket component or any successor index or successor to any ETF.

Information provided to or filed with the SEC by each ETF, including its most recent prospectus and its periodic reports, can be inspected and copied at the public reference facilities maintained by the SEC or through the SEC's website at [www.sec.gov](http://www.sec.gov). We are not incorporating by reference into this document any of those documents.

The selection of the basket components is not a recommendation to invest in any basket component. Neither we nor any of our affiliates make any representation to you as to the future performance of any basket component.

The Russell 3000<sup>®</sup> Value Index

The RAV was developed by Russell Investments ("Russell") before FTSE International Limited and Russell combined in 2015 to create FTSE Russell, which is wholly owned by London Stock Exchange Group. The RAV is a subset of the Russell 3000<sup>®</sup> Index (the "RUA"). The RUA measures the performance of the largest 3,000 U.S. companies, representing approximately 98% of the investable U.S. equity market. The RAV consists of the securities included in the RUA that are deemed to exhibit "value" characteristics. The RAV is determined, comprised, and calculated by FTSE Russell without regard to the PLUS.

Selection of Value Stocks

FTSE Russell uses a "non-linear probability" method to assign stocks to its growth and value style indexes. The term "probability" is used to indicate the degree of certainty that a stock is "value" or "growth" based on its relative book-to-price (B/P) ratio, I/B/E/S forecast medium-term growth (two years) and sales per share historical growth (five year). This method allows stocks to be represented as having both growth and value characteristics, while preserving the additive nature of the indexes.

The process for assigning growth and value weights is applied separately to the stocks in the RUA. The stocks in the RUA are ranked by their adjusted book-to-price ratio (B/P), their I/B/E/S forecast medium-term growth (two years) and sales per share historical growth (five years). These rankings are converted to standardized units and combined to produce a Composite Value Score ("CVS"). Stocks are then ranked by their CVS, and a probability algorithm is applied to the CVS distribution to assign growth and value weights to each stock. In general, stocks with a lower CVS are considered growth, stocks with a higher CVS are considered value, and stocks with a CVS in the middle range are considered to have both growth and value characteristics, and are weighted proportionately in the growth and value index. Stocks are always fully represented by the combination of their growth and value weights, e.g., a stock that is given a 20% weight in a Russell value index will have an 80% weight in the same Russell growth index.

Stock A, in the figure below, is a security with 20% of its available shares assigned to the value index and the remaining 80% assigned to the growth index. The growth and value probabilities will always sum to 100%. Hence, the sum of a stock's market capitalization in the growth and value index will always equal its market capitalization in the RUA.

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In the figure above, the quartile breaks are calculated such that approximately 25% of the available market capitalization lies in each quartile. Stocks at the median are divided 50% in each style index. Stocks below the first quartile are 100% in the growth index. Stocks above the third quartile are 100% in the value index. Stocks falling between the first and third quartile breaks are in both indices to varying degrees depending on how far they are above or below the median and how close they are to the first or third quartile breaks. Roughly 70% of the available market capitalization is classified as all growth or all value. The remaining 30% have some portion of their market value in either the value or growth index, depending on their relative distance from the median value score. Note that there is a small position cutoff rule. If a stock's weight is more than 95% in one style index, its weight is increased to 100% in the index. This rule eliminates many small weightings and makes passive management easier.

#### Selection of Stocks Underlying the RUA

All companies eligible for inclusion in the RUA must be classified as a U.S. company under FTSE Russell's country-assignment methodology. If a company is incorporated, has a stated headquarters location, and trades in the same country (American Depositary Receipts and American Depositary Shares are not eligible), then the company is assigned to its country of incorporation. If any of the three factors are not the same, FTSE Russell defines three Home Country Indicators ("HCIs"): country of incorporation, country of headquarters, and country of the most liquid exchange (as defined by a two-year average daily dollar trading volume) ("ADDTV") from all exchanges within a country. Using the HCIs, FTSE Russell compares the primary location of the company's assets with the three HCIs. If the primary location of its assets matches any of the HCIs, then the company is assigned to the primary location of its assets. If there is insufficient information to determine the country in which the company's assets are primarily located, FTSE Russell will use the primary country from which the company's revenues are primarily derived for the comparison with the three HCIs in a similar manner. FTSE Russell uses the average of two years of assets or revenues data to reduce potential turnover. If conclusive country details cannot be derived from assets or revenues data, FTSE Russell will assign the company to the country of its headquarters, which is defined as the address of the company's principal executive offices, unless that country is a Benefit Driven Incorporation "BDI" country, in which case the company will be assigned to the country of its most liquid stock exchange. BDI countries include: Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, Bermuda, Bonaire, British Virgin Islands, Cayman Islands, Channel Islands, Cook Islands, Curacao, Faroe Islands, Gibraltar, Guernsey, Isle of Man, Jersey, Liberia, Marshall Islands, Panama, Saba, Sint Eustatius, Sint Maarten, and Turks and Caicos Islands. For any companies incorporated or headquartered in a U.S. territory, including countries such as Puerto Rico, Guam, and U.S. Virgin Islands, a U.S. HCI is assigned.

All securities eligible for inclusion in the RUA must trade on a major U.S. exchange. Stocks must have a closing price at or above \$1.00 on their primary exchange on the last trading day in May to be eligible for inclusion during annual reconstitution. However, in order to reduce unnecessary turnover, if an existing member's closing price is less than \$1.00 on the last day of May, it will be considered eligible if the average of the daily closing prices (from its primary exchange) during the month of May is equal to or greater than \$1.00. Initial public offerings are added each quarter and must have a closing price at or above \$1.00 on the last day of their eligibility period in order to qualify for index inclusion. If an existing stock does not trade on the "rank day" (typically the last trading day in May, but a confirmed timetable is announced each spring), but does have a closing price at or above \$1.00 on another eligible U.S. exchange, that stock will be eligible for inclusion.

An important criterion used to determine the list of securities eligible for the RUA is total market capitalization, which is defined as the market price as of the rank day in May for those securities being considered at annual reconstitution times the total number of shares outstanding. Where applicable, common stock, non-restricted exchangeable shares and partnership units/membership interests are used to determine market capitalization. Any other form of shares such as preferred stock, convertible preferred stock, redeemable shares, participating preferred stock, warrants, rights, installment receipts or trust receipts, are excluded from the calculation. If multiple share classes of common stock exist, they are combined to determine total shares outstanding. In cases where the common stock share classes act independently of each other (e.g., tracking stocks), each class is considered for inclusion separately. If multiple share classes exist, the pricing vehicle will be designated as the share class with the highest two year trading volume as of



the rank day in May.

Companies with a total market capitalization of less than \$30 million are not eligible for the RUA. Similarly, companies with only 5% or less of their shares available in the marketplace are not eligible for the RUA. Royalty trusts, limited liability companies, closed-end investment companies (companies that are required to report Acquired Fund Fees and Expenses, as defined by the SEC, including business development companies), blank check companies, special purpose acquisition companies, and limited partnerships are also ineligible for inclusion. Exchange traded funds and mutual funds are also excluded. Bulletin board, pink sheets, and over-the-counter (“OTC”) traded securities are not eligible for inclusion.

Annual reconstitution is a process by which the RUA is completely rebuilt. Based on closing levels of the company’s common stock on its primary exchange on the rank day of May of each year, FTSE Russell reconstitutes the composition of the RUA using the then existing market capitalizations of eligible companies. Reconstitution of the RUA occurs on the last Friday in June or, when the last Friday in June is the 29th or 30th, reconstitution occurs on the prior Friday. In addition, FTSE Russell adds initial public offerings to the RUA on a quarterly basis based on total market capitalization ranking within the market-adjusted capitalization breaks established during the most recent reconstitution.

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After membership is determined, a security's shares are adjusted to include only those shares available to the public. This is often referred to as "free float." The purpose of the adjustment is to exclude from market calculations the capitalization that is not available for purchase and is not part of the investable opportunity set.

License Agreement

FTSE Russell and Royal Bank of Canada have entered into a non-exclusive license agreement providing for the license to Royal Bank of Canada, and certain of its affiliates, in exchange for a fee, of the right to use indices owned and published by FTSE Russell in connection with some securities, including the PLUS.

FTSE Russell does not guarantee the accuracy and/or the completeness of the RAV or any data included in the RAV and has no liability for any errors, omissions, or interruptions in the RAV. FTSE Russell makes no warranty, express or implied, as to results to be obtained by the calculation agent, holders of the PLUS, or any other person or entity from the use of the RAV or any data included in the RAV in connection with the rights licensed under the license agreement described in this document or for any other use. FTSE Russell makes no express or implied warranties, and hereby expressly disclaims all warranties of merchantability or fitness for a particular purpose with respect to the RAV or any data included in the RAV. Without limiting any of the above information, in no event will FTSE Russell have any liability for any special, punitive, indirect or consequential damages, including lost profits, even if notified of the possibility of these damages.

The PLUS are not sponsored, endorsed, sold or promoted by FTSE Russell. FTSE Russell makes no representation or warranty, express or implied, to the owners of the PLUS or any member of the public regarding the advisability of investing in securities generally or in the PLUS particularly or the ability of the RAV to track general stock market performance or a segment of the same. FTSE Russell's publication of the RAV in no way suggests or implies an opinion by FTSE Russell as to the advisability of investment in any or all of the stocks upon which the RAV is based. FTSE Russell's only relationship to Royal Bank of Canada is the licensing of certain trademarks and trade names of FTSE Russell and of the RAV, which is determined, composed and calculated by FTSE Russell without regard to Royal Bank of Canada or the PLUS. FTSE Russell is not responsible for and has not reviewed the PLUS nor any associated literature or publications and FTSE Russell makes no representation or warranty express or implied as to their accuracy or completeness, or otherwise. FTSE Russell reserves the right, at any time and without notice, to alter, amend, terminate or in any way change the RAV. FTSE Russell has no obligation or liability in connection with the administration, marketing or trading of the PLUS.

"Russell 3000<sup>®</sup>", "Russell 3000<sup>®</sup> Value Index" and "Russell 3000<sup>®</sup> Growth Index" are registered trademarks of FTSE Russell in the U.S. and other countries.

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The VanEck Vectors<sup>®</sup> Gold Miners ETF

The GDX is an investment portfolio maintained, managed and advised by Van Eck. The VanEck Vectors<sup>TM</sup> ETF Trust is a registered open-end investment company that consists of numerous separate investment portfolios, including the GDX.

The GDX is an exchange traded fund that trades on NYSE Arca under the ticker symbol “GDX.”

The GDX seeks to provide investment results that correspond generally to the price and yield performance, before fees and expenses, of the Underlying Index. The Underlying Index was developed by the NYSE Amex and is calculated, maintained and published by NYSE Arca. The Underlying Index is a modified market capitalization-weighted index comprised of publicly traded companies involved primarily in mining for gold or silver.

The GDX utilizes a “passive” or “indexing” investment approach in attempting to track the performance of the Underlying Index. The GDX will invest in all of the securities which comprise the Underlying Index. The GDX will normally invest at least 95% of its total assets in common stocks that comprise the Underlying Index.

The PLUS are not sponsored, endorsed, sold or promoted by Van Eck. Van Eck makes no representations or warranties to the owners of the PLUS or any member of the public regarding the advisability of investing in the PLUS. Van Eck has no obligation or liability in connection with the operation, marketing, trading or sale of the PLUS.

The NYSE Arca Gold Miners Index

The NYSE Arca Gold Miners Index is a modified market capitalization weighted index comprised of securities issued by publicly traded companies involved primarily in the mining of gold or silver. The underlying index was developed by the NYSE Amex and is calculated, maintained and published by NYSE Arca.

Eligibility Criteria for Index Components

The underlying index includes common stocks, ADRs or GDRs of selected companies that are involved in mining for gold and silver and that are listed for trading and electronically quoted on a major stock market that is accessible by foreign investors. Generally, this includes exchanges in most developed markets and major emerging markets, and includes companies that are cross-listed, i.e., both U.S. and Canadian listings. NYSE Arca will use its discretion to avoid exchanges and markets that are considered “frontier” in nature or have major restrictions to foreign ownership. The underlying index includes companies that derive at least 50% of their revenues from gold mining and related activities (40% for companies that are already included in the underlying index). Also, the underlying index will maintain an exposure to companies with a significant revenue exposure to silver mining in addition to gold mining, which will not exceed 20% of the underlying index weight at each rebalance.

Currently, only companies with a market capitalization of greater than \$750 million that have an average daily trading volume of at least 50,000 shares and an average daily value traded of at least \$1 million over the past three months are eligible for inclusion in the underlying index. Starting in December 2013, for companies already included in the underlying index, the market capitalization requirement at each rebalance will be \$450 million, the average daily volume requirement will be at least 30,000 shares over the past three months and the average daily value traded requirement will be at least \$600,000 over the past three months.

NYSE Arca has the discretion to not include all companies that meet the minimum criteria for inclusion.

Calculation of the Underlying Index

The underlying index is calculated by NYSE Arca on a price return basis. The calculation is based on the current modified market capitalization divided by a divisor. The divisor was determined on the initial capitalization base of the underlying index and the base level and may be adjusted as a result of corporate actions and composition changes, as described below. The level of the underlying index was set at 500.00 on December 20, 2002 which is the index base date. The underlying index is calculated using the following formula:

Where:

t = day of calculation;

N = number of constituent equities in the underlying index;

Qi,t = number of shares of equity i on day t;

Mi,t = multiplier of equity i;



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$C_{i,t}$  = price of equity  $i$  on day  $t$ ; and  
DIV = current index divisor on day  $t$ .

Underlying Index Maintenance

The underlying index is reviewed quarterly to ensure that at least 90% of the underlying index weight is accounted for by index components that continue to meet the initial eligibility requirements. NYSE Arca may at any time and from time to time change the number of securities comprising the group by adding or deleting one or more securities, or replacing one or more securities contained in the group with one or more substitute securities of its choice, if in NYSE Arca's discretion such addition, deletion or substitution is necessary or appropriate to maintain the quality and/or character of the underlying index. Components will be removed from the underlying index during the quarterly review if either (1) the market capitalization falls below \$450 million or (2) the traded average daily shares for the previous three months is less than 30,000 shares and the average daily traded value for the previous three months is less than \$600,000.

At the time of the quarterly rebalance, the component security weights (also referred to as the multiplier or share quantities of each component security) will be modified to conform to the following asset diversification requirements:

- (1) the weight of any single component security may not account for more than 20% of the total value of the underlying index;  
the component securities are split into two subgroups—large and small, which are ranked by market capitalization weight in the underlying index. Large securities are defined as having a starting index weight greater than or equal to 5%. Small securities are defined as having a starting index weight below 5%; and
- (2) the final aggregate weight of those component securities which individually represent more than 4.5% of the total value of the underlying index may not account for more than 45% of the total index value.

The weights of the components securities (taking into account expected component changes and share adjustments) are modified in accordance with the underlying index's diversification rules.

Diversification Rule 1: If any component stock exceeds 20% of the total value of the underlying index, then all stocks greater than 20% of the underlying index are reduced to represent 20% of the value of the underlying index. The aggregate amount by which all component stocks are reduced is redistributed proportionately across the remaining stocks that represent less than 20% of the index value. After this redistribution, if any other stock then exceeds 20%, the stock is set to 20% of the index value and the redistribution is repeated.

Diversification Rule 2: The components are sorted into two groups, large are components with a starting index weight of 5% or greater and small are components with a weight of under 5% (after any adjustments for Diversification Rule 1). The large group will represent in the aggregate 45% and the small group will represent 55% in the aggregate of the final index weight. This will be adjusted through the following process: The weight of each of the large stocks will be scaled down proportionately (with a floor of 5%) so that the aggregate weight of the large components will be reduced to represent 45% of the underlying index. If any large component stock falls below a weight equal to the product of 5% and the proportion by which the stocks were scaled down following this distribution, then the weight of the stock is set equal to 5% and the components with weights greater than 5% will be reduced proportionately. The weight of each of the small components will be scaled up proportionately from the redistribution of the large components. If any small component stock exceeds a weight equal to the product of 4.5% and the proportion by which the stocks were scaled down following this distribution, then the weight of the stock is set equal to 4.5%. The redistribution of weight to the remaining stocks is repeated until the entire amount has been redistributed.

Changes to the underlying index composition and/or the component security weights in the underlying index are determined and announced prior to taking effect. These changes typically become effective after the close of trading on the third Friday of each calendar quarter month in connection with the quarterly index rebalance. The share quantities of each component security in the index portfolio remains fixed between quarterly reviews except in the event of certain types of corporate actions such as stock splits, reverse stock splits, stock dividends, or similar events. The share quantities used in the underlying index calculation are not typically adjusted for shares issued or

repurchased between quarterly reviews. However, in the event of a merger between two components, the share quantities of the surviving entity may be adjusted to account for any stock issued in the acquisition. NYSE Arca may substitute securities or change the number of securities included in the underlying index, based on changing conditions in the industry or in the event of certain types of corporate actions, including mergers, acquisitions, spin-offs, and reorganizations. In the event of component or share quantity changes to the index portfolio, the payment of dividends other than ordinary cash dividends, spin-offs, rights offerings, re-capitalization, or other corporate actions affecting a component security of the underlying index, the index divisor may be adjusted to ensure that there are no changes to the index level as a result of nonmarket forces.

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#### The EURO STOXX<sup>®</sup> Banks Index

The SX7E was created by STOXX Limited, which is owned by Deutsche Börse AG. Publication of the Index began on June 15, 1998, based on an initial index value of 100 at December 31, 1991. The SX7E is reported daily on the Bloomberg Professional<sup>®</sup> service under the symbol "SX7E." Additional information about the SX7E and its methodology is available on the STOXX Limited website. Information on that website is not included or incorporated by reference in this document.

#### Index Composition and Maintenance

The SX7E is one of the 19 EURO STOXX<sup>®</sup> Supersector indices that compose the STOXX<sup>®</sup> Europe 600 Index. The STOXX<sup>®</sup> Europe 600 Index contains the 600 largest stocks traded on the major exchanges of 18 European countries and are organized into the following 19 Supersectors: automobiles & parts; banks; basic resources; chemicals; construction & materials; financial services; food & beverage; health care; industrial goods & services; insurance; media; oil & gas; personal & household goods; real estate; retail; technology; telecommunications; travel & leisure; and utilities. The SX7E includes companies in the banks supersector, which tracks companies providing a broad range of financial services, including retail banking, loans and money transmissions. The SX7E currently includes 27 stocks. The SX7E is weighted by free float market capitalization. Each component's weight is capped at 30% of the SX7E's total free float market capitalization. Free float weights are reviewed quarterly. The composition of each of the EURO STOXX<sup>®</sup> Supersector index is reviewed quarterly, based on the closing stock data on the last trading day of the month following the implementation of the last quarterly index review, and changes to the component stocks are implemented quarterly. Index components are also adjusted for corporate actions.

#### Calculation of the SX7E

The SX7E is calculated with the "Laspeyres formula," which measures the aggregate price changes in the component stocks against a fixed base quantity weight. The formula for calculating the SX7E value can be expressed as follows: The "free float market capitalization of the SX7E" is equal to the sum of the products of the closing price, number of shares outstanding, free float factor and weighting cap factor for each component stock as of the time the SX7E is being calculated.

The SX7E is also subject to a divisor, which is adjusted to maintain the continuity of the SX7E values across changes due to corporate actions, such as the deletion and addition of stocks, the substitution of stocks, stock dividends, and stock splits.

#### License Agreement

We have entered into a non-exclusive license agreement with STOXX providing for the license to us and certain of our affiliated or subsidiary companies, in exchange for a fee, of the right to use indices owned and published by STOXX (including the SX7E) in connection with certain securities, including the PLUS.

The license agreement between us and STOXX requires that the following language be stated in this document: STOXX has no relationship to us, other than the licensing of the SX7E and the related trademarks for use in connection with the PLUS. STOXX does not:

- sponsor, endorse, sell, or promote the PLUS;
- recommend that any person invest in the PLUS or any other securities;
- have any responsibility or liability for or make any decisions about the timing, amount, or pricing of the PLUS;
- have any responsibility or liability for the administration, management, or marketing of the PLUS; or
- consider the needs of the PLUS or the holders of the PLUS in determining, composing, or calculating the SX7E, or have any obligation to do so.

STOXX will not have any liability in connection with the PLUS. Specifically:

- STOXX does not make any warranty, express or implied, and disclaims any and all warranty concerning: the results to be obtained by the PLUS, the holders of the PLUS or any other person in connection with the use of the SX7E or the data included in these Indices;
- the accuracy or completeness of the SX7E and their data;
- the merchantability and the fitness for a particular purpose or use of the SX7E and their data;





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·STOXX will have no liability for any errors, omissions, or interruptions in the SX7E or their data; and under no circumstances will STOXX be liable for any lost profits or indirect, punitive, special, or consequential damages or losses, even if STOXX knows that they might occur.

The licensing agreement between us and STOXX is solely for their benefit and our benefit, and not for the benefit of the holders of the PLUS or any other third parties.

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The iShares<sup>®</sup> MSCI Emerging Markets ETF

The shares of the Fund are issued by iShares, Inc. (“iShare<sup>®</sup>”), a registered investment company, which consists of numerous separate investment portfolios, including the iShares<sup>®</sup> MSCI Emerging Markets ETF (the “EEM”). The Fund seeks investment results that correspond generally to the price and yield performance, before fees and expenses, of the MSCI Emerging Markets Index (the “underlying index”). BlackRock Fund Advisors (“BFA”) serves as the investment advisor to the EEM. The Fund typically earns income dividends from securities included in the underlying index. These amounts, net of expenses and taxes (if applicable), are passed along to the EEM’s shareholders as “ordinary income.” In addition, the EEM realizes capital gains or losses whenever it sells securities. Net long-term capital gains are distributed to shareholders as “capital gain distributions.” However, because the PLUS are linked only to the share price of the EEM, you will not be entitled to receive income, dividend, or capital gain distributions from the EEM or any equivalent payments.

Information provided to or filed with the SEC by iShares<sup>®</sup> under the Securities Exchange Act of 1934 and the Investment Company Act of 1940 can be located at the SEC’s facilities or through the SEC’s website, [www.sec.gov](http://www.sec.gov). We have not independently verified the accuracy or completeness of the information or reports prepared by iShares<sup>®</sup>. The selection of the EEM is not a recommendation to buy or sell the shares of the EEM. Neither we nor any of our affiliates make any representation to you as to the performance of the shares of the EEM.

“iShare<sup>®</sup>” and BlackRoc<sup>®</sup> are registered trademarks of BlackRock, Inc. (“BlackRock<sup>®</sup>”). BlackRock<sup>®</sup> has licensed certain trademarks and trade names of BlackRock<sup>®</sup> for our use. The PLUS are not sponsored, endorsed, sold, or promoted by BlackRock<sup>®</sup>, or by iShares<sup>®</sup>. Neither BlackRock<sup>®</sup> nor iShares<sup>®</sup> make any representations or warranties to the owners of the PLUS or any member of the public regarding the advisability of investing in the PLUS. Neither BlackRock<sup>®</sup> nor iShares<sup>®</sup> shall have any obligation or liability in connection with the registration, operation, marketing, trading, or sale of the PLUS or in connection with our use of information about the iShares<sup>®</sup> funds.

The EEM

The EEM trades on the NYSE Arca under the ticker symbol “EEM.” BFA employs a technique known as representative sampling to track the underlying index. The EEM generally invests at least 90% of its assets in the securities of the underlying index and in American Depositary Receipts or Global Depositary Receipts based on the securities of the underlying index. The EEM may invest the remainder of its assets in securities not included in the underlying index, but which BFA believes will help the EEM track the underlying index, or in futures contracts, options on futures contracts, other types of options and swaps related to the underlying index, as well as cash and cash equivalents, including shares of money market funds affiliated with BFA or its affiliates. BFA will waive portfolio management fees in an amount equal to the portfolio management fees of such other iShares funds for any portion of the EEM’s assets invested in shares of such other funds.

Investment Objective and Strategy

The EEM seeks to provide investment results that correspond generally to the price and yield performance, before fees and expenses, of publicly traded securities in emerging markets, as represented by the underlying index. The EEM’s investment objective and the underlying index may be changed at any time without shareholder approval.

The return on the PLUS is linked to the performance of the EEM, and not to the performance of the underlying index on which the EEM is based. Although the EEM seeks results that correspond generally to the performance of the underlying index, the EEM follows a strategy of “representative sampling,” which means the EEM’s holdings do not identically correspond to the holdings and weightings of the underlying index, and may significantly diverge from the underlying index. Although the EEM generally invests at least 90% of its assets in some of the same securities as those contained in the underlying index and in depositary receipts representing the same securities as those contained in the underlying index, it does not hold all of the securities underlying the underlying index and may invest the remainder in securities that are not contained in the underlying index, or in other types of investments. Currently, the EEM holds substantially fewer securities than the underlying index. Additionally, when the EEM purchases securities not held by the underlying index, the EEM may be exposed to additional risks, such as counterparty credit risk or liquidity risk, to which the underlying index components are not exposed. Therefore, the EEM will not directly track

the performance of the underlying index and there may be significant variation between the performance of the EEM and the underlying index on which it is based.

**Representative Sampling**

BFA uses a representative sampling strategy to track the underlying index. Representative sampling is an indexing strategy that involves investing in a representative sample of securities that collectively has an investment profile similar to the underlying index. The securities selected are expected to have, in the aggregate, investment characteristics (based on factors such as market capitalization and industry weightings), fundamental characteristics (such as return variability and yield) and liquidity measures similar to those of the underlying index. Exchange traded funds may or may not hold all of the securities that are included in the underlying index.

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PLUS Based on a Basket of Two Equity Indices and Six Exchange-Traded Funds due July 3, 2019  
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Principal at Risk Securities

#### Correlation

The underlying index is a theoretical financial calculation, while the EEM is an actual investment portfolio. The performance of the EEM and the index will vary somewhat due to transaction costs, foreign currency valuations, asset valuations, corporate actions (such as mergers and spin-offs), timing variances and differences between the EEM's portfolio and the index resulting from legal restrictions (such as diversification requirements that apply to the EEM but not to the index) or representative sampling. A figure of 100% would indicate perfect correlation. Any correlation of less than 100% is called "tracking error." The EEM, using representative sampling, can be expected to have a greater tracking error than a fund using a replication indexing strategy. "Replication" is a strategy in which a fund invests in substantially all of the securities in its underlying index in approximately the same proportions as in the underlying index.

#### Share Prices

The approximate value of one share of the EEM is disseminated every fifteen seconds throughout the trading day by the national securities exchange on which the EEM is listed or by other information providers or market data vendors. This approximate value should not be viewed as a "real-time" update of the net asset value, because the approximate value may not be calculated in the same manner as the net asset value, which is computed once a day. The approximate value generally is determined by using current market quotations and/or price quotations obtained from broker-dealers that may trade in the portfolio securities held by the EEM. The EEM is not involved in, or responsible for, the calculation or dissemination of the approximate value and makes no warranty as to its accuracy.

#### The Underlying Index

The information below is included only to give insight to the underlying index, the performance of which the EEM attempts to reflect. The PLUS are linked to the performance of the EEM and not to the underlying index. We have derived all information contained in this document regarding the underlying index, including, without limitation, its make-up, method of calculation and changes in its components, from publicly available information. The underlying index is a stock index calculated, published and disseminated daily by MSCI, Inc. ("MSCI"), a majority-owned subsidiary of Morgan Stanley, through numerous data vendors, on the MSCI website and in real time on Bloomberg Financial Markets and Reuters Limited. Neither MSCI nor Morgan Stanley has any obligation to continue to calculate and publish, and may discontinue calculation and publication of the underlying index

The MSCI Emerging Markets Index is intended to measure equity market performance in the global emerging markets. The MSCI Emerging Markets Index is a free float-adjusted market capitalization index with a base date of December 31, 1987 and an initial value of 100. The MSCI Emerging Markets Index is calculated daily in U.S. dollars and published in real time every 60 seconds during market trading hours. The MSCI Emerging Markets Index currently consists of the following 24 emerging market country indices: Brazil, Chile, China, Colombia, Czech Republic, Greece, Egypt, Hungary, India, Indonesia, South Korea, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Qatar, Russia, South Africa, Taiwan, Thailand, Turkey and United Arab Emirates. According to MSCI, beginning in June 2018, MSCI began to include Chinese A Shares in this index. The MSCI Emerging Markets Index is part of the MSCI Regional Equity Indices series and is an MSCI Global Investable Market Index, which is a family within the MSCI International Equity Indices.

#### General – MSCI Indices

MSCI provides global equity indices intended to measure equity performance in international markets and the MSCI International Equity Indices are designed to serve as global equity performance benchmarks. In constructing these indices, MSCI applies its index construction and maintenance methodology across developed, emerging, and frontier markets.

MSCI enhanced the methodology used in its MSCI International Equity Indices. The MSCI Standard and MSCI Small Cap Indices, along with the other MSCI equity indices based on them, transitioned to the global investable market indices methodology described below. The transition was completed at the end of May 2008. The Enhanced MSCI Standard Indices are composed of the MSCI Large Cap and Mid Cap Indices. The MSCI Global Small Cap Index transitioned to the MSCI Small Cap Index resulting from the Global Investable Market Indices methodology and

contains no overlap with constituents of the transitioned MSCI Standard Indices. Together, the relevant MSCI Large Cap, Mid Cap, and Small Cap Indices will make up the MSCI investable market index for each country, composite, sector, and style index that MSCI offers.

Constructing the MSCI Global Investable Market Indices. MSCI undertakes an index construction process, which involves:

- defining the equity universe;
- determining the market investable equity universe for each market;
- determining market capitalization size segments for each market;
- applying index continuity rules for the MSCI Standard Index;
  - creating style segments within each size segment within each market; and
- classifying securities under the Global Industry Classification Standard (the “GICS”).

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PLUS Based on a Basket of Two Equity Indices and Six Exchange-Traded Funds due July 3, 2019  
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Principal at Risk Securities

Defining the Equity Universe. The equity universe is defined by:

Identifying Eligible Equity Securities: the equity universe initially looks at securities listed in any of the countries in the MSCI Global Index Series, which will be classified as either Developed Markets (“DM”) or Emerging Markets (“EM”). All listed equity securities, including Real Estate Investment Trusts, are eligible for inclusion in the equity universe. Conversely, mutual funds, ETFs, equity derivatives and most investment trusts are not eligible for inclusion in the equity universe.

Classifying Eligible Securities into the Appropriate Country: each company and its securities (i.e., share classes) are classified in only one country.

Effective with the November 2015 semi-annual index review, companies traded outside of their country of classification (i.e., “foreign listed companies”) became eligible for inclusion in the MSCI Country Investable Market Indexes along with the applicable MSCI Global Index. In order for a MSCI Country Investable Market Index to be eligible to include foreign listed companies, it must meet the Foreign Listing Materiality Requirement. To meet the Foreign Listing Materiality Requirement, the aggregate market capitalization of all securities represented by foreign listings should represent at least (i) 5% of the free float-adjusted market capitalization of the relevant MSCI Country Investable Market Index and (ii) 0.05% of the free-float adjusted market capitalization of the MSCI ACWI Investable Market Index.

Determining the Market Investable Equity Universes. A market investable equity universe for a market is derived by applying investability screens to individual companies and securities in the equity universe that are classified in that market. A market is equivalent to a single country, except in DM Europe, where all DM countries in Europe are aggregated into a single market for index construction purposes. Subsequently, individual DM Europe country indices within the MSCI Europe Index are derived from the constituents of the MSCI Europe Index under the global investable market indices methodology.

The investability screens used to determine the investable equity universe in each market are as follows:

Equity Universe Minimum Size Requirement: this investability screen is applied at the company level. In order to be included in a market investable equity universe, a company must have the required minimum full market capitalization.

Equity Universe Minimum Free Float–Adjusted Market Capitalization Requirement: this investability screen is applied at the individual security level. To be eligible for inclusion in a market investable equity universe, a security must have a free float–adjusted market capitalization equal to or higher than 50% of the equity universe minimum size requirement.

DM and EM Minimum Liquidity Requirement: this investability screen is applied at the individual security level. To be eligible for inclusion in a market investable equity universe, a security must have adequate liquidity. The twelve-month and three-month Annual Traded Value Ratio (“ATVR”), a measure that screens out extreme daily trading volumes and takes into account the free float–adjusted market capitalization size of securities, together with the three-month frequency of trading are used to measure liquidity. A minimum liquidity level of 20% of three- and twelve-month ATVR and 90% of three-month frequency of trading over the last four consecutive quarters are required for inclusion of a security in a market investable equity universe of a DM, and a minimum liquidity level of 15% of three- and twelve-month ATVR and 80% of three-month frequency of trading over the last four consecutive quarters are required for inclusion of a security in a market investable equity universe of an EM.

Global Minimum Foreign Inclusion Factor Requirement: this investability screen is applied at the individual security level. To be eligible for inclusion in a market investable equity universe, a security’s Foreign Inclusion Factor (“FIF”) must reach a certain threshold. The FIF of a security is defined as the proportion of shares outstanding that is available for purchase in the public equity markets by international investors. This proportion accounts for the available free float of and/or the foreign ownership limits applicable to a specific security (or company). In general, a security must have an FIF equal to or larger than 0.15 to be eligible for inclusion in a market investable equity universe.

**Minimum Length of Trading Requirement:** this investability screen is applied at the individual security level. For an initial public offering (“IPO”) to be eligible for inclusion in a market investable equity universe, the new issue must have started trading at least three months before the implementation of a semi-annual index review (as described below). This requirement is applicable to small new issues in all markets. Large IPOs are not subject to the minimum length of trading requirement and may be included in a market investable equity universe and the Standard Index outside of a Quarterly or Semi-Annual Index Review.

**Minimum Foreign Room Requirement:** this investability screen is applied at the individual security level. For a security that is subject to a foreign ownership limit to be eligible for inclusion in a market investable equity universe, the proportion of shares still available to foreign investors relative to the maximum allowed (referred to as “foreign room”) must be at least 15%.

**Defining Market Capitalization Size Segments for Each Market.** Once a market investable equity universe is defined, it is segmented into the following size-based indices:

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- Investable Market Index (Large + Mid + Small);
- Standard Index (Large + Mid);
- Large Cap Index;
- Mid Cap Index; or
- Small Cap Index.

Creating the size segment indices in each market involves the following steps:

- defining the market coverage target range for each size segment;
- determining the global minimum size range for each size segment;
- determining the market size segment cutoffs and associated segment number of companies;
- assigning companies to the size segments; and
- applying final size–segment investability requirements.

Index Continuity Rules for the Standard Indices. In order to achieve index continuity, as well as to provide some basic level of diversification within a market index, and notwithstanding the effect of other index construction rules described in this section, a minimum number of five constituents will be maintained for a DM Standard Index and a minimum number of three constituents will be maintained for an EM Standard Index.

Creating Style Indices within Each Size Segment. All securities in the investable equity universe are classified into value or growth segments using the MSCI Global Value and Growth methodology.

Classifying Securities under the Global Industry Classification Standard. All securities in the global investable equity universe are assigned to the industry that best describes their business activities. To this end, MSCI has designed, in conjunction with S&P Dow Jones Indexes, the GICS. Under the GICS, each company is assigned to one sub–industry according to its principal business activity. Therefore, a company can belong to only one industry grouping at each of the four levels of the GICS.

#### Index Maintenance

The MSCI Global Investable Market Indices are maintained with the objective of reflecting the evolution of the underlying equity markets and segments on a timely basis, while seeking to achieve index continuity, continuous investability of constituents and replicability of the indices, index stability and low index turnover. In particular, index maintenance involves:

(i) Semi–Annual Index Reviews (“SAIRs”) in May and November of the Size Segment and Global Value and Growth Indices which include:

- updating the indices on the basis of a fully refreshed equity universe;
- taking buffer rules into consideration for migration of securities across size and style segments; and
- updating FIFs and Number of Shares (“NOS”).

(ii) Quarterly Index Reviews in February and August of the Size Segment Indices aimed at:

- including significant new eligible securities (such as IPOs that were not eligible for earlier inclusion) in the index;
- allowing for significant moves of companies within the Size Segment Indices, using wider buffers than in the SAIR; and
- reflecting the impact of significant market events on FIFs and updating NOS.

(iii) Ongoing Event–Related Changes: changes of this type are generally implemented in the indices as they occur. Significantly large IPOs are included in the indices after the close of the company’s tenth day of trading.

None of us, RBCCM or any of our other affiliates accepts any responsibility for the calculation, maintenance, or publication of, or for any error, omission, or disruption in, the index or any successor to the index.



PLUS Based on a Basket of Two Equity Indices and Six Exchange-Traded Funds due July 3, 2019  
Performance Leveraged Upside Securities<sup>SM</sup>  
Principal at Risk Securities

The iShares<sup>®</sup> MSCI Japan ETF

The EWJ is intended to track the investment results of the MSCI Japan Index. The EWJ trades on the NYSE Arca, Inc. under the ticker symbol “EWJ.” As of November 30, 2018, the MSCI Japan Index included 322 constituents, and covered approximately 85% of the free float-adjusted market capitalization in Japan. The EWJ is maintained and managed by BFA. BFA uses a “passive” or indexing approach to try to achieve the EWJ’s investment objective. As of December 13, 2018, the top five economic sectors represented by the EWJ were: industrials, consumer discretionary, financials, information technology and consumer staples.

For additional information relating to the iShares<sup>®</sup> funds and the MSCI indices, please see the preceding section, relating to the iShares<sup>®</sup> Emerging Markets ETF.

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Principal at Risk Securities

#### SPDR<sup>®</sup> S&P<sup>®</sup> Oil & Gas Exploration & Production ETF

The XOP is an investment portfolio maintained and managed by SSFM. The XOP trades on the NYSE Arca under the ticker symbol "XOP." The inception date of the XOP is June 19, 2006. Prior to January 8, 2007, the XOP was known as the SPDR<sup>®</sup> Oil & Gas Exploration & Production ETF.

Information provided to or filed with the SEC by the SPDR<sup>®</sup> Series Trust ("SPDR") under the Securities Exchange Act of 1934 can be located by reference to its Central Index Key, or CIK, 1064642 through the SEC's website at <http://www.sec.gov>. Additional information about SSFM and the XOP may be obtained from other sources including, but not limited to, press releases, newspaper articles and other publicly disseminated documents. We have not made any independent investigation as to the accuracy or completeness of such information.

The XOP seeks to provide investment results that correspond generally to the price and yield performance, before fees and expenses, of the S&P<sup>®</sup> Oil & Gas Exploration & Production Select Industry<sup>®</sup> Index. The underlying index represents the oil and gas exploration and production sub-industry portion of the S&P Total Market Index ("S&P TMI"), an index that measures the performance of the U.S. equity market. The XOP is composed of companies that are in the oil and gas sector exploration and production.

The XOP utilizes a sampling strategy, which means that it is not required to purchase all of the securities represented in its underlying index. Instead, it may purchase a subset of the securities in the underlying index in an effort to hold a portfolio of securities with generally the same risk and return characteristics of the underlying index. Under normal market conditions, the XOP will invest at least 80% of its total assets in common stocks that comprise the underlying index.

The information above was compiled from the SPDR<sup>®</sup> website. We have not independently investigated the accuracy of that information. Information contained in the SPDR<sup>®</sup> website is not incorporated by reference in, and should not be considered a part of, this document.

#### The S&P<sup>®</sup> Oil & Gas Exploration & Production Select Industry<sup>®</sup> Index

We have derived all information contained in this document regarding the underlying index, including, without limitation, its make-up, method of calculation and changes in its components, from publicly available information. Such information reflects the policies of, and is subject to change by, S&P.

The underlying index is an equal-weighted index that is designed to measure the performance of the oil and gas exploration and production sub-industry portion of the S&P TMI. The S&P TMI includes all U.S. common equities listed on the NYSE (including NYSE Arca), the NYSE American, the Nasdaq Global Select Market, and the Nasdaq Capital Market.

To be eligible for inclusion in the underlying index, companies must be in the S&P TMI and must be included in the relevant Global Industry Classification Standard (GICS) sub-industry. The GICS was developed to establish a global standard for categorizing companies into sectors and industries. In addition to the above, companies must satisfy one of the three following combined size and liquidity criteria:

- float-adjusted market capitalization above US\$500 million and float-adjusted liquidity ratio above 90%;
- float-adjusted market capitalization above US\$400 million and float-adjusted liquidity ratio above 150%; or
- for current constituents, float adjusted market capitalization above US\$300 million and float-adjusted liquidity ratio greater than or equal to 50%.

All U.S. companies satisfying these requirements are included in the underlying index. The total number of companies in the underlying index should be at least 35. If there are fewer than 35 stocks, stocks from a supplementary list of highly correlated sub-industries that meet the market capitalization and liquidity thresholds above are included in order of their float-adjusted market capitalization to reach 35 constituents. Minimum market capitalization requirements may be relaxed to ensure there are at least 22 companies in the underlying index as of each rebalancing effective date.

Eligibility factors include:

Market Capitalization: Float-adjusted market capitalization should be at least US\$400 million for inclusion in the underlying index. Existing index components must have a float-adjusted market capitalization of US\$300 million to remain in the underlying index at each rebalancing.

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PLUS Based on a Basket of Two Equity Indices and Six Exchange-Traded Funds due July 3, 2019  
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Liquidity: The liquidity measurement used is a liquidity ratio, defined as dollar value traded over the previous 12 months divided by the float-adjusted market capitalization as of the underlying index rebalancing reference date. Stocks having a float-adjusted market capitalization above US\$500 million must have a liquidity ratio greater than 90% to be eligible for addition to the underlying index. Stocks having a float-adjusted market capitalization between US\$400 and US\$500 million must have a liquidity ratio greater than 150% to be eligible for addition to the underlying index. Existing index constituents must have a liquidity ratio greater than 50% to remain in the underlying index at the quarterly rebalancing. The length of time to evaluate liquidity is reduced to the available trading period for IPOs or spin-offs that do not have 12 months of trading history.

Takeover Restrictions: At the discretion of S&P, constituents with shareholder ownership restrictions defined in company bylaws may be deemed ineligible for inclusion in the underlying index. Ownership restrictions preventing entities from replicating the index weight of a company may be excluded from the eligible universe or removed from the underlying index.

Turnover: S&P believes turnover in index membership should be avoided when possible. At times, a company may appear to temporarily violate one or more of the addition criteria. However, the addition criteria are for addition to the underlying index, not for continued membership. As a result, an index constituent that appears to violate the criteria for addition to the underlying index will not be deleted unless ongoing conditions warrant a change in the composition of the underlying index.

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PLUS Based on a Basket of Two Equity Indices and Six Exchange-Traded Funds due July 3, 2019  
Performance Leveraged Upside Securities<sup>SM</sup>  
Principal at Risk Securities

iShares<sup>®</sup> Nasdaq Biotechnology ETF

iShares consists of numerous separate investment portfolios (the “iShares Funds”), including the IBB. The IBB seeks investment results that correspond generally to the price and yield performance, before fees and expenses, of the Underlying Index. The IBB typically earns income from dividends from securities held by the IBB. These amounts, net of expenses and taxes (if applicable), are passed along to the IBB’s shareholders as “ordinary income.” In addition, the IBB realizes capital gains or losses whenever it sells securities. Net long-term capital gains are distributed to its respective shareholders as “capital gain distributions.” However, because the PLUS are linked only to the share price of the IBB, you will not be entitled to receive income, dividend, or capital gain distributions from the IBB or any equivalent payments.

“iShare<sup>®</sup>” and “BlackRock<sup>®</sup>” are registered trademarks of BlackRock<sup>®</sup>. The PLUS are not sponsored, endorsed, sold, or promoted by BlackRock<sup>®</sup>, or by any of the iShares<sup>®</sup> Funds. Neither BlackRock<sup>®</sup> nor the iShares<sup>®</sup> Funds make any representations or warranties to the owners of the PLUS or any member of the public regarding the advisability of investing in the PLUS. Neither BlackRock<sup>®</sup> nor the iShares<sup>®</sup> Funds shall have any obligation or liability in connection with the registration, operation, marketing, trading, or sale of the PLUS or in connection with our use of information about the IBB or any of the iShares<sup>®</sup> Funds.

The IBB is intended to provide investment results that correspond generally to the price and yield performance, before fees and expenses, of the NASDAQ Biotechnology Index<sup>®</sup>. The IBB trades on the NASDAQ Stock Market<sup>®</sup> (“NASDAQ”) under the ticker symbol “IBB.” Information provided to or filed with the SEC under the Securities Exchange Act of 1934 and the Investment Company Act of 1940 relating to the IBB may be obtained through the SEC’s website at <http://www.sec.gov>.

The NASDAQ Biotechnology Index<sup>®</sup>

The NASDAQ Biotechnology Index<sup>®</sup> is calculated, published and disseminated by NASDAQ OMX, and is designed to measure the performance of NASDAQ-listed companies that are classified according to the Industry Classification Benchmark as either biotechnology or pharmaceuticals which also meet other eligibility criteria determined by NASDAQ OMX. We have derived all information relating to the NASDAQ Biotechnology Index<sup>®</sup>, including, without limitation, its make up, method of calculation and changes in its components, from publicly available information. Such information reflects the policies of and is subject to change by, NASDAQ OMX. Neither we nor any of our affiliates has undertaken any independent review or due diligence of such information. NASDAQ OMX has no obligation to continue to publish, and may discontinue or suspend the publication of the NASDAQ Biotechnology Index<sup>®</sup> at any time.

The NASDAQ Biotechnology Index<sup>®</sup> is calculated under a modified capitalization-weighted methodology. On November 1, 1993, the NASDAQ Biotechnology Index<sup>®</sup> began with a base of 200.00. To be eligible for inclusion in the NASDAQ Biotechnology Index<sup>®</sup>, a security must be listed on The NASDAQ Stock Market. Eligibility for the NASDAQ Biotechnology Index<sup>®</sup> is limited to specific security types only. The security types eligible for the NASDAQ Biotechnology Index<sup>®</sup> include common stocks, ordinary shares, American Depositary Receipts, and shares of beneficial interest or limited partnership interests. Securities must meet the following criteria:

- the security’s U.S. listing must be exclusively on the NASDAQ Global Select Market or the NASDAQ Global Market (unless the security was dually listed on another U.S. market prior to January 1, 2004 and has continuously maintained such listing);
- the issuer of the security must be classified according to the Industry Classification Benchmark as either Biotechnology or Pharmaceuticals;
- the security may not be issued by an issuer currently in bankruptcy proceedings;
- the security must have a market capitalization of at least \$200 million;
- the security must have an average daily trading volume of at least 100,000 shares;
- the issuer of the security may not have entered into a definitive agreement or other arrangement which would likely result in the security no longer being eligible for inclusion in the NASDAQ Biotechnology Index<sup>®</sup>;

- the issuer of the security may not have annual financial statements with an audit opinion that is currently withdrawn; and
- the issuer of the security must have “seasoned” on NASDAQ, the New York Stock Exchange or NYSE MKT (generally, a company is considered to be seasoned if it has been listed on a market for at least three full months, excluding the first month of initial listing).

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#### Annual Evaluation

The securities composing the NASDAQ Biotechnology Index<sup>®</sup> are evaluated annually in December. Securities currently within the NASDAQ Biotechnology Index<sup>®</sup> must continue to meet the above eligibility criteria. The securities included in the NASDAQ Biotechnology Index<sup>®</sup> not meeting the maintenance criteria are removed. Index-eligible securities not currently in the NASDAQ Biotechnology Index<sup>®</sup> are added. Generally, the list of additions and deletions is publicly announced with a press release in early December. If at any time during the year other than at the review a security in the NASDAQ Biotechnology Index<sup>®</sup> no longer meets the criteria or is otherwise determined to have become ineligible, the security is removed from the NASDAQ Biotechnology Index<sup>®</sup> and will not be replaced.

#### Index Maintenance

In addition to the annual evaluation, the securities in the NASDAQ Biotechnology Index<sup>®</sup> are monitored by NASDAQ OMX with respect to changes in total shares outstanding arising from corporate events such as stock dividends, stock splits, certain spin-offs and rights issuance, or other corporate actions. NASDAQ OMX has adopted the following weight adjustment procedures with respect to such changes. Changes in total shares outstanding arising from stock splits, stock dividends, or spin-offs are generally made to the NASDAQ Biotechnology Index<sup>®</sup> on the evening prior to the effective date of such corporate action. If the change in total shares outstanding arising from other corporate actions is greater than or equal to 10%, the change will be made as soon as practicable. Otherwise, if the change in total shares outstanding is less than 10%, then all such changes are accumulated and made effective at one time on a quarterly basis after the close of trading on the third Friday in each of March, June, September, and December. In either case, the index share weights for such securities are adjusted by the same percentage amount by which the total shares outstanding have changed in such securities.

#### Index Rebalancing

The NASDAQ Biotechnology Index<sup>®</sup> employs a modified market capitalization weighting methodology. At each quarter, the NASDAQ Biotechnology Index<sup>®</sup> is rebalanced such that the maximum weight of any security in the NASDAQ Biotechnology Index<sup>®</sup> does not exceed 8% and no more than 5 securities are at that cap. The excess weight of any capped security is distributed proportionally across the remaining securities. If after redistribution, any of the 5 highest ranked securities are weighted below 8%, these securities are not capped. Next, any remaining securities in excess of 4% are capped at 4% and the excess weight is redistributed proportionally across the remaining securities. The process is repeated, if necessary, to derive the final weights.

The modified market capitalization weighting methodology is applied to the capitalization of each security in the NASDAQ Biotechnology Index<sup>®</sup>, using the last sale price of the security at the close of trading on the last trading day in February, May, August and November and after applying quarterly changes to the total shares outstanding. The index share weights are then calculated by multiplying the weight of the security derived above by the new market value of the NASDAQ Biotechnology Index<sup>®</sup> and dividing the modified market capitalization for each security in the NASDAQ Biotechnology Index<sup>®</sup> by its corresponding last sale price. The changes are effective after trading on the third Friday in March, June, September and December.

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PLUS Based on a Basket of Two Equity Indices and Six Exchange-Traded Funds due July 3, 2019  
Performance Leveraged Upside Securities<sup>SM</sup>  
Principal at Risk Securities

The iShares U.S. Telecommunications ETF

The shares of the IYZ are issued by iShares, Inc., a registered investment company. The IYZ seeks investment results that correspond generally to the price and yield performance, before fees and expenses, of the Dow Jones U.S. Select Telecommunications Index. The IYZ trades on the CBOE BZX under the ticker symbol "IYZ." BlackRock Fund Advisors serves as its investment advisor. The IYZ utilizes a "passive" or "indexing" investment approach in attempting to track the performance of its underlying index. The IYZ generally invests at least 90% of its assets in securities of its underlying index and in depositary receipts representing those securities.

Investment Objective and Strategy

The IYZ seeks to provide investment results that correspond generally to the price and yield performance, before fees and expenses, of its underlying index. The IYZ's investment objective and its underlying index may be changed. Notwithstanding the IYZ's investment objective, the return on the PLUS will not reflect any dividends paid on the IYZ's shares, on the securities purchased by the IYZ or on the securities that comprise its underlying index. Although the IYZ seeks results that correspond generally to the performance of its underlying index, the IYZ follows a strategy of "representative sampling," which means the IYZ's holdings do not identically correspond to the holdings and weightings of the index, and may significantly diverge from the index. Although the IYZ generally invests at least 90% of its assets in some of the same securities as those contained in the index and in depositary receipts representing the same securities as those contained in the index, it does not hold all of the securities underlying the index and may invest the remainder in securities that are not contained in the index, or in other types of investments. Additionally, when the IYZ purchases securities not included in the index, the IYZ may be exposed to additional risks, such as counterparty credit risk or liquidity risk, to which the index components are not exposed. Therefore, the IYZ will not directly track the performance of the index and there may be significant variation between the performance of the IYZ and the index.

The Underlying Index

The Dow Jones U.S. Select Telecommunications Index is designed to measure the performance of U.S. companies in the telecommunications sector. The index measures the performance of providers of fixed-line and mobile telephone services, as well as makers and distributors of high-technology communications products. Fixed-line includes regional and long-distance carriers. Mobile includes cellular, satellite and paging services. Communications products includes satellites, mobile telephones, fiber optics, switching devices, local and wide-area networks, teleconferencing equipment and connectivity devices for computers.

The index is derived from the common stocks of companies in the Dow Jones U.S. Broad Stock Market Index that are categorized into the telecommunications sector, based on a proprietary classification system used by S&P Dow Jones Indices. Limited Partnerships are not eligible for index membership.

Constituent Selection

Market Capitalization. On the last business day of the month prior to the quarterly rebalancing, a non-constituent company must have float-adjusted market capitalization of at least \$500 million to enter the index. If a company is already an index constituent, its float-adjusted market capitalization must be at least \$250 million to remain in the index.

Number of Constituents. At each quarterly rebalancing, if the component count is less than 22 after applying the rules set forth in the eligibility criteria, the market capitalization requirement is relaxed so that the next largest non-component in the eligible universe is added until the component count reaches 22.

Ownership Restrictions. At the discretion of S&P Dow Jones Indices, constituents with shareholder ownership restrictions defined in company bylaws may be deemed ineligible for inclusion in the index. Ownership restrictions preventing entities from replicating the index weight of a company may be excluded from the eligible universe or removed from the index. S&P Dow Jones Indices will provide up to five days advance notification of a deletion between rebalancings due to ownership restrictions.

Constituent Weighting



The index is weighted by float-adjusted market capitalization, subject to the following adjustments, which are made as part of the quarterly rebalancings in March, June, September, and December.

- the weight of any individual company is capped at 25%.
- the aggregate weight of individual companies with weights of 5% or more is capped at 45%.
- the aggregate weight of the five largest companies in the index is capped at 65%.

#### Index Maintenance

Rebalancing. The index is rebalanced quarterly, effective at the open of trading on the Monday following the third Friday of March, June, September and December. Component eligibility is determined as of the last trading day of the month prior to rebalancing. As part of the rebalancing process, index composition, shares and weight caps are adjusted, if necessary.

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PLUS Based on a Basket of Two Equity Indices and Six Exchange-Traded Funds due July 3, 2019  
Performance Leveraged Upside Securities<sup>SM</sup>  
Principal at Risk Securities

Deletions. Between rebalancings, a company can be deleted from an index due to corporate events such as mergers, acquisitions, takeovers, delistings or bankruptcies. Deleted constituents are not replaced between rebalancings. If, during the course of the regular review of company classifications, a constituent's sector classification changes to an ineligible sector, it is removed from the relevant index at the next rebalancing. If a constituent's sector classification changes due to a corporate action such as a merger or spin-off, it is evaluated and may be removed from the relevant index at that time.

**Additional Information**

For additional information about the underlying index and its calculation, reference is made to the index provider's website: <https://us.spindices.com/indices/equity/dow-jones-us-select-telecommunications-index-usd>. However, information included in that website is not included or incorporated by reference in this document.

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PLUS Based on a Basket of Two Equity Indices and Six Exchange-Traded Funds due July 3, 2019  
Performance Leveraged Upside Securities<sup>SM</sup>  
Principal at Risk Securities

#### Historical Information

While actual historical information on the basket did not exist before the pricing date, the first graph below sets forth the hypothetical historical daily performance of the basket from January 1, 2013 through December 28, 2018. The graph is based upon actual daily official closing values of the basket components, hypothetical component weightings as described in “Summary Terms—Basket” on the cover page, and a hypothetical basket value of 100 as of January 1, 2013.

The other graphs below set forth the daily official closing values of the basket components for the period from January 1, 2013 through December 28, 2018. The tables below each graph set forth the published high and low official closing values, as well as the end-of-quarter official closing values, of the basket components for each quarter in the same period.

We obtained the information below from Bloomberg Financial Markets, without independent verification.

You should not take the historical values of the basket or the basket components as an indication of future performance, and no assurance can be given as to the value of any of the basket or the basket components on the valuation date.

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PLUS Based on a Basket of Two Equity Indices and Six Exchange-Traded Funds due July 3, 2019  
 Performance Leveraged Upside Securities<sup>SM</sup>  
 Principal at Risk Securities

The Russell 3000<sup>®</sup> Value Index

Information as of market close on December 28, 2018:

|                             |                              |           |
|-----------------------------|------------------------------|-----------|
| Bloomberg Index Symbol: RAV | 52 Weeks Ago:                | 1,622.331 |
| Current Level:              | 52 Week High (on 1/26/2018): | 1,705.573 |
|                             | 52 Week Low (on 12/24/2018): | 1,360.356 |

The Russell 3000<sup>®</sup> Value Index – Historical Closing Levels

January 1, 2013 to December 28, 2018

|  | High      | Low       | Period End |
|--|-----------|-----------|------------|
| 2013                                       |           |           |            |
| First Quarter                              | 1,058.190 | 970.643   | 1,058.190  |
| Second Quarter                             | 1,120.985 | 1,034.464 | 1,085.125  |
| Third Quarter                              | 1,156.633 | 1,089.417 | 1,124.387  |
| Fourth Quarter                             | 1,229.045 | 1,109.175 | 1,229.045  |
| 2014                                       |           |           |            |
| First Quarter                              | 1,257.824 | 1,156.506 | 1,257.824  |
| Second Quarter                             | 1,316.854 | 1,221.574 | 1,311.887  |
| Third Quarter                              | 1,330.936 | 1,268.528 | 1,292.839  |
| Fourth Quarter                             | 1,373.290 | 1,224.978 | 1,353.650  |
| 2015                                       |           |           |            |
| First Quarter                              | 1,367.275 | 1,297.854 | 1,338.787  |
| Second Quarter                             | 1,372.317 | 1,328.994 | 1,331.058  |
| Third Quarter                              | 1,355.480 | 1,180.808 | 1,209.081  |
| Fourth Quarter                             | 1,320.596 | 1,208.816 | 1,266.261  |
| 2016                                       |           |           |            |
| First Quarter                              | 1,280.367 | 1,125.861 | 1,278.278  |
| Second Quarter                             | 1,340.245 | 1,258.235 | 1,328.220  |
| Third Quarter                              | 1,386.741 | 1,315.240 | 1,370.906  |
| Fourth Quarter                             | 1,482.520 | 1,321.496 | 1,460.835  |
| 2017                                       |           |           |            |
| First Quarter                              | 1,536.613 | 1,458.281 | 1,495.587  |
| Second Quarter                             | 1,519.300 | 1,462.202 | 1,505.754  |
| Third Quarter                              | 1,545.414 | 1,478.783 | 1,545.414  |
| Fourth Quarter                             | 1,622.331 | 1,538.799 | 1,614.020  |
| 2018                                       |           |           |            |
| First Quarter                              | 1,705.573 | 1,523.492 | 1,559.340  |
| Second Quarter                             | 1,613.925 | 1,525.660 | 1,576.459  |
| Third Quarter                              | 1,679.956 | 1,576.003 | 1,651.213  |
| Fourth Quarter (through December 28, 2018) | 1,659.382 | 1,360.356 | 1,428.631  |

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PLUS Based on a Basket of Two Equity Indices and Six Exchange-Traded Funds due July 3, 2019  
 Performance Leveraged Upside Securities<sup>SM</sup>  
 Principal at Risk Securities

The VanEck Vectors<sup>®</sup> Gold Miners ETF

Information as of market close on December 28, 2018:

Bloomberg Ticker Symbol: GDX 52 Weeks Ago: 23.20

Current Price: 20.60 52 Week High (on 1/24/2018): 24.60

52 Week Low (on 9/11/2018): 17.57

The VanEck Vectors<sup>®</sup> Gold Miners ETF – Historical Closing Prices(\$)

January 1, 2013 to December 28, 2018

| 0  | High (\$) | Low (\$) | Period End (\$) |
|--|-----------|----------|-----------------|
| 2013                                       |           |          |                 |
| First Quarter                              | 47.09     | 35.91    | 37.85           |
| Second Quarter                             | 37.45     | 22.22    | 24.41           |
| Third Quarter                              | 30.43     | 22.90    | 25.06           |
| Fourth Quarter                             | 26.52     | 20.39    | 20.64           |
| 2014                                       |           |          |                 |
| First Quarter                              | 27.73     | 21.27    | 23.60           |
| Second Quarter                             | 26.45     | 22.04    | 26.45           |
| Third Quarter                              | 27.46     | 21.35    | 21.35           |
| Fourth Quarter                             | 21.94     | 16.59    | 18.45           |
| 2015                                       |           |          |                 |
| First Quarter                              | 22.94     | 17.67    | 18.24           |
| Second Quarter                             | 20.82     | 17.76    | 17.76           |
| Third Quarter                              | 17.85     | 13.04    | 13.74           |
| Fourth Quarter                             | 16.90     | 13.08    | 13.64           |
| 2016                                       |           |          |                 |
| First Quarter                              | 20.86     | 12.47    | 19.98           |
| Second Quarter                             | 27.70     | 19.53    | 27.70           |
| Third Quarter                              | 31.32     | 25.45    | 26.43           |
| Fourth Quarter                             | 25.96     | 18.99    | 20.92           |
| 2017                                       |           |          |                 |
| First Quarter                              | 25.57     | 21.14    | 22.81           |
| Second Quarter                             | 24.57     | 21.10    | 22.08           |
| Third Quarter                              | 25.49     | 21.21    | 22.96           |
| Fourth Quarter                             | 23.84     | 21.42    | 23.24           |
| 2018                                       |           |          |                 |
| First Quarter                              | 24.60     | 21.27    | 21.98           |
| Second Quarter                             | 23.06     | 21.81    | 22.31           |
| Third Quarter                              | 22.68     | 17.57    | 18.52           |
| Fourth Quarter (through December 28, 2018) | 21.09     | 18.39    | 20.60           |

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PLUS Based on a Basket of Two Equity Indices and Six Exchange-Traded Funds due July 3, 2019  
 Performance Leveraged Upside Securities<sup>SM</sup>  
 Principal at Risk Securities

The EURO STOXX Banks Index

Information as of market close on December 28, 2018:

Bloomberg Ticker Symbol: SX7E52 Weeks Ago: 131.27  
 Current Level: 86.76 52 Week High (on 1/29/2018): 143.05  
 52 Week Low (on 12/27/2018): 84.80

The EURO STOXX Banks Index – Historical Closing Levels

January 1, 2013 to December 28, 2018

|  | High   | Low    | Period End |
|--|--------|--------|------------|
| 2013                                       |        |        |            |
| First Quarter                              | 127.75 | 101.95 | 102.46     |
| Second Quarter                             | 118.77 | 100.51 | 101.39     |
| Third Quarter                              | 129.63 | 100.57 | 125.84     |
| Fourth Quarter                             | 142.30 | 129.32 | 141.43     |
| 2014                                       |        |        |            |
| First Quarter                              | 156.58 | 139.31 | 155.26     |
| Second Quarter                             | 162.81 | 145.66 | 146.52     |
| Third Quarter                              | 154.60 | 135.67 | 149.21     |
| Fourth Quarter                             | 149.39 | 129.86 | 134.51     |
| 2015                                       |        |        |            |
| First Quarter                              | 158.53 | 124.29 | 157.65     |
| Second Quarter                             | 161.70 | 148.38 | 149.91     |
| Third Quarter                              | 161.45 | 128.04 | 131.34     |
| Fourth Quarter                             | 141.12 | 123.03 | 127.87     |
| 2016                                       |        |        |            |
| First Quarter                              | 125.04 | 89.65  | 101.38     |
| Second Quarter                             | 111.28 | 79.03  | 83.25      |
| Third Quarter                              | 99.11  | 78.37  | 92.54      |
| Fourth Quarter                             | 120.34 | 91.84  | 117.67     |
| 2017                                       |        |        |            |
| First Quarter                              | 127.52 | 111.98 | 127.52     |
| Second Quarter                             | 139.87 | 118.94 | 131.16     |
| Third Quarter                              | 139.91 | 127.83 | 138.38     |
| Fourth Quarter                             | 137.82 | 129.98 | 130.48     |
| 2018                                       |        |        |            |
| First Quarter                              | 143.05 | 123.72 | 125.69     |
| Second Quarter                             | 131.97 | 109.41 | 110.45     |
| Third Quarter                              | 116.73 | 104.16 | 106.55     |
| Fourth Quarter (through December 28, 2018) | 106.08 | 84.80  | 86.76      |

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PLUS Based on a Basket of Two Equity Indices and Six Exchange-Traded Funds due July 3, 2019  
 Performance Leveraged Upside Securities<sup>SM</sup>  
 Principal at Risk Securities

iShares MSCI Emerging Markets ETF

Information as of market close on December 28, 2018:

Bloomberg Index Symbol: EEM 52 Weeks Ago: 46.90  
 Current Level: 39.2452 Week High (on 1/26/2018): 52.08  
 52 Week Low (on 10/29/2018): 38.00

iShares MSCI Emerging Markets ETF – Historical Closing Prices(\$)  
 January 1, 2013 to December 28, 2018

|  | High  | Low   | Period | End |
|--|-------|-------|--------|-----|
| 2013                                       |       |       |        |     |
| First Quarter                              | 45.20 | 41.80 | 42.78  |     |
| Second Quarter                             | 44.23 | 36.63 | 38.57  |     |
| Third Quarter                              | 43.29 | 37.34 | 40.77  |     |
| Fourth Quarter                             | 43.66 | 40.44 | 41.77  |     |
| 2014                                       |       |       |        |     |
| First Quarter                              | 40.99 | 37.09 | 40.99  |     |
| Second Quarter                             | 43.95 | 40.82 | 43.23  |     |
| Third Quarter                              | 45.85 | 41.56 | 41.56  |     |
| Fourth Quarter                             | 42.44 | 37.73 | 39.29  |     |
| 2015                                       |       |       |        |     |
| First Quarter                              | 41.07 | 37.92 | 40.13  |     |
| Second Quarter                             | 44.09 | 39.04 | 39.62  |     |
| Third Quarter                              | 39.78 | 31.32 | 32.78  |     |
| Fourth Quarter                             | 36.29 | 31.55 | 32.19  |     |
| 2016                                       |       |       |        |     |
| First Quarter                              | 34.28 | 28.25 | 34.25  |     |
| Second Quarter                             | 35.26 | 31.87 | 34.36  |     |
| Third Quarter                              | 38.20 | 33.77 | 37.45  |     |
| Fourth Quarter                             | 38.10 | 34.08 | 35.01  |     |
| 2017                                       |       |       |        |     |
| First Quarter                              | 39.99 | 35.43 | 39.39  |     |
| Second Quarter                             | 41.93 | 38.81 | 41.39  |     |
| Third Quarter                              | 45.85 | 41.05 | 44.81  |     |
| Fourth Quarter                             | 47.81 | 44.82 | 47.12  |     |
| 2018                                       |       |       |        |     |
| First Quarter                              | 52.08 | 45.69 | 48.28  |     |
| Second Quarter                             | 48.14 | 42.33 | 44.86  |     |
| Third Quarter                              | 44.46 | 41.14 | 42.92  |     |
| Fourth Quarter (through December 28, 2018) | 42.93 | 38.00 | 39.24  |     |

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PLUS Based on a Basket of Two Equity Indices and Six Exchange-Traded Funds due July 3, 2019  
 Performance Leveraged Upside Securities<sup>SM</sup>  
 Principal at Risk Securities

iShares MSCI Japan ETF

Information as of market close on December 28, 2018:

Bloomberg Index Symbol: EWJ 52 Weeks Ago: 59.82  
 Current Level: 50.78 52 Week High (on 1/26/2018): 64.67  
 52 Week Low (on 12/24/2018): 49.12

iShares MSCI Japan ETF – Historical Closing Prices(\$)

January 1, 2013 to December 28, 2018

|  | High  | Low   | Period | End |
|--|-------|-------|--------|-----|
| 2013                                       |       |       |        |     |
| First Quarter                              | 43.28 | 38.56 | 43.20  |     |
| Second Quarter                             | 49.08 | 41.52 | 44.88  |     |
| Third Quarter                              | 48.44 | 43.48 | 47.64  |     |
| Fourth Quarter                             | 48.88 | 45.92 | 48.52  |     |
| 2014                                       |       |       |        |     |
| First Quarter                              | 48.40 | 43.52 | 45.32  |     |
| Second Quarter                             | 48.76 | 43.20 | 48.16  |     |
| Third Quarter                              | 49.00 | 46.88 | 47.08  |     |
| Fourth Quarter                             | 48.56 | 43.56 | 44.96  |     |
| 2015                                       |       |       |        |     |
| First Quarter                              | 51.48 | 43.80 | 50.12  |     |
| Second Quarter                             | 53.28 | 50.32 | 51.24  |     |
| Third Quarter                              | 52.52 | 44.76 | 45.72  |     |
| Fourth Quarter                             | 50.48 | 46.04 | 48.48  |     |
| 2016                                       |       |       |        |     |
| First Quarter                              | 48.32 | 41.28 | 45.64  |     |
| Second Quarter                             | 48.84 | 43.56 | 46.00  |     |
| Third Quarter                              | 51.28 | 45.92 | 50.16  |     |
| Fourth Quarter                             | 51.35 | 48.86 | 48.86  |     |
| 2017                                       |       |       |        |     |
| First Quarter                              | 52.34 | 49.26 | 51.50  |     |
| Second Quarter                             | 54.90 | 50.61 | 53.65  |     |
| Third Quarter                              | 55.71 | 52.84 | 55.71  |     |
| Fourth Quarter                             | 60.62 | 55.71 | 59.93  |     |
| 2018                                       |       |       |        |     |
| First Quarter                              | 64.67 | 58.28 | 60.68  |     |
| Second Quarter                             | 61.62 | 56.83 | 58.53  |     |
| Third Quarter                              | 60.51 | 56.67 | 60.23  |     |
| Fourth Quarter (through December 28, 2018) | 60.64 | 49.12 | 50.78  |     |

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PLUS Based on a Basket of Two Equity Indices and Six Exchange-Traded Funds due July 3, 2019  
 Performance Leveraged Upside Securities<sup>SM</sup>  
 Principal at Risk Securities

SPDR S&P Oil & Gas Exploration and Production ETF

Information as of market close on December 28, 2018:

Bloomberg Ticker Symbol: XOP 52 Weeks Ago: 37.62  
 Current Level: 26.37 52 Week High (on 10/3/2018): 44.57  
 52 Week Low (on 12/24/2018): 24.12

SPDR S&P Oil & Gas Exploration and Production ETF– Historical Closing Prices (\$)  
 January 1, 2013 to December 28, 2018

|  | High  | Low   | Period End |
|--|-------|-------|------------|
| 2013                                       |       |       |            |
| First Quarter                              | 62.10 | 55.10 | 60.49      |
| Second Quarter                             | 62.61 | 54.71 | 58.18      |
| Third Quarter                              | 66.47 | 58.62 | 65.85      |
| Fourth Quarter                             | 72.72 | 65.02 | 68.53      |
| 2014                                       |       |       |            |
| First Quarter                              | 71.83 | 64.04 | 71.83      |
| Second Quarter                             | 83.45 | 71.19 | 82.28      |
| Third Quarter                              | 82.08 | 68.83 | 68.83      |
| Fourth Quarter                             | 66.84 | 42.75 | 47.86      |
| 2015                                       |       |       |            |
| First Quarter                              | 53.94 | 42.55 | 51.66      |
| Second Quarter                             | 55.63 | 46.43 | 46.66      |
| Third Quarter                              | 45.22 | 31.71 | 32.84      |
| Fourth Quarter                             | 40.53 | 28.64 | 30.22      |
| 2016                                       |       |       |            |
| First Quarter                              | 30.96 | 23.60 | 30.35      |
| Second Quarter                             | 37.50 | 29.23 | 34.81      |
| Third Quarter                              | 39.12 | 32.76 | 38.46      |
| Fourth Quarter                             | 43.42 | 34.73 | 41.42      |
| 2017                                       |       |       |            |
| First Quarter                              | 42.21 | 35.17 | 37.44      |
| Second Quarter                             | 37.89 | 30.17 | 31.92      |
| Third Quarter                              | 34.37 | 29.09 | 34.09      |
| Fourth Quarter                             | 37.64 | 32.25 | 37.18      |
| 2018                                       |       |       |            |
| First Quarter                              | 39.85 | 32.38 | 35.22      |
| Second Quarter                             | 44.52 | 34.03 | 43.02      |
| Third Quarter                              | 43.58 | 39.10 | 43.29      |
| Fourth Quarter (through December 28, 2018) | 44.57 | 24.12 | 26.37      |

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PLUS Based on a Basket of Two Equity Indices and Six Exchange-Traded Funds due July 3, 2019  
 Performance Leveraged Upside Securities<sup>SM</sup>  
 Principal at Risk Securities

## iShares NASDAQ Biotechnology ETF

Information as of market close on December 28, 2018:

|                              |               |                                     |
|------------------------------|---------------|-------------------------------------|
| Bloomberg Ticker Symbol: IBB | 52 Weeks Ago: | 107.79                              |
| Current Price:               | 94.84         | 52 Week High (on 8/31/2018): 122.19 |
|                              |               | 52 Week Low (on 12/24/2018): 89.61  |

iShares  
 NASDAQ  
 Biotechnology  
 ETF – Historical  
 Closing Prices  
 (\$)  
 January 1,  
 2013 to  
 December 28,  
 2018

|  | High (\$) | Low (\$) | Period End (\$) |
|--|-----------|----------|-----------------|
| 2013                                       |           |          |                 |
| First Quarter                              | 53.31     | 47.21    | 53.31           |
| Second Quarter                             | 62.06     | 53.16    | 57.96           |
| Third Quarter                              | 70.44     | 59.42    | 69.87           |
| Fourth Quarter                             | 75.75     | 64.83    | 75.69           |
| 2014                                       |           |          |                 |
| First Quarter                              | 91.08     | 74.61    | 78.80           |
| Second Quarter                             | 85.68     | 71.79    | 85.68           |
| Third Quarter                              | 93.10     | 81.02    | 91.21           |
| Fourth Quarter                             | 105.73    | 85.09    | 101.12          |
| 2015                                       |           |          |                 |
| First Quarter                              | 122.17    | 100.27   | 114.48          |
| Second Quarter                             | 127.75    | 111.22   | 122.99          |
| Third Quarter                              | 132.67    | 96.49    | 101.11          |
| Fourth Quarter                             | 114.37    | 99.59    | 112.78          |
| 2016                                       |           |          |                 |
| First Quarter                              | 108.99    | 81.35    | 86.94           |
| Second Quarter                             | 96.11     | 80.50    | 85.78           |
| Third Quarter                              | 100.03    | 86.69    | 96.49           |
| Fourth Quarter                             | 97.70     | 82.29    | 88.46           |
| 2017                                       |           |          |                 |
| First Quarter                              | 100.83    | 90.00    | 97.76           |
| Second Quarter                             | 106.91    | 94.77    | 103.36          |
| Third Quarter                              | 111.95    | 101.35   | 111.20          |
| Fourth Quarter                             | 113.62    | 101.68   | 106.77          |
| 2018                                       |           |          |                 |
| First Quarter                              | 118.50    | 104.86   | 106.74          |
| Second Quarter                             | 113.90    | 101.03   | 109.82          |
| Third Quarter                              | 122.19    | 110.59   | 121.94          |
| Fourth Quarter (through December 28, 2018) | 121.26    | 89.61    | 94.84           |



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PLUS Based on a Basket of Two Equity Indices and Six Exchange-Traded Funds due July 3, 2019  
Performance Leveraged Upside Securities<sup>SM</sup>

Principal at Risk Securities

The iShares U.S. Telecommunications ETF

Information as of market close on December 28, 2018:

Bloomberg Ticker Symbol: IYZ 52 Weeks Ago: 29.67

Current Price: 26.05 52 Week High (on 9/21/2018): 30.08

52 Week Low (on 12/24/2018): 24.71

The iShares U.S. Telecommunications ETF – Historical Closing Prices(\$)

January 1, 2013 to December 28, 2018

|  | High (\$) | Low (\$) | Period End (\$) |
|--|-----------|----------|-----------------|
| 2013                                       |           |          |                 |
| First Quarter                              | 25.15     | 23.83    | 24.30           |
| Second Quarter                             | 27.48     | 24.27    | 25.85           |
| Third Quarter                              | 28.55     | 25.80    | 27.58           |
| Fourth Quarter                             | 29.76     | 27.28    | 29.73           |
| 2014                                       |           |          |                 |
| First Quarter                              | 30.00     | 27.85    | 29.98           |
| Second Quarter                             | 30.49     | 28.53    | 30.33           |
| Third Quarter                              | 31.38     | 29.68    | 29.95           |
| Fourth Quarter                             | 30.83     | 27.88    | 29.28           |
| 2015                                       |           |          |                 |
| First Quarter                              | 31.43     | 28.42    | 30.22           |
| Second Quarter                             | 31.71     | 29.24    | 29.28           |
| Third Quarter                              | 30.11     | 26.52    | 27.00           |
| Fourth Quarter                             | 30.40     | 26.66    | 28.79           |
| 2016                                       |           |          |                 |
| First Quarter                              | 30.73     | 25.45    | 30.73           |
| Second Quarter                             | 33.30     | 30.33    | 33.30           |
| Third Quarter                              | 34.65     | 31.60    | 32.22           |
| Fourth Quarter                             | 35.07     | 29.35    | 34.50           |
| 2017                                       |           |          |                 |
| First Quarter                              | 36.54     | 31.71    | 32.34           |
| Second Quarter                             | 34.57     | 31.81    | 32.26           |
| Third Quarter                              | 32.58     | 29.86    | 30.45           |
| Fourth Quarter                             | 31.89     | 27.56    | 29.41           |
| 2018                                       |           |          |                 |
| First Quarter                              | 29.73     | 26.68    | 27.02           |
| Second Quarter                             | 28.52     | 26.51    | 27.62           |
| Third Quarter                              | 30.08     | 27.57    | 29.74           |
| Fourth Quarter (through December 28, 2018) | 29.79     | 24.71    | 26.05           |

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Canadian Federal Income Tax Consequences

An investor 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.

Supplemental Discussion of U.S. Federal Income Tax Consequences

The following, together with the discussion of U.S. federal income taxation in the accompanying prospectus and prospectus supplement, is a general description of the material U.S. tax considerations relating to the PLUS. It does not purport to be a complete analysis of all tax considerations relating to the PLUS. Prospective purchasers of the PLUS should consult their tax advisors as to the consequences under the tax laws of the country of which they are a resident for tax purposes and the tax laws of Canada and the United States of acquiring, holding and disposing of the PLUS and receiving payments under the PLUS. This summary is based upon the law as in effect on the date of this document and is subject to any change in law that may take effect after such date.

Supplemental U.S. Tax Considerations

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. It does not apply to holders subject to special rules including holders subject to Section 451(b) of the Internal Revenue Code of 1986, as amended (the “Code”).

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

We will not attempt to ascertain whether the basket components or any of the entities whose stock is included in the basket components would be treated as a “passive foreign investment company” within the meaning of Section 1297 of the Code, or a “U.S. real property holding corporation” within the meaning of Section 897 of the Code. If the basket components or any of the entities whose stock is included in the basket components were so treated, certain adverse U.S. federal income tax consequences could possibly apply to U.S. and non-U.S. holders, respectively. You should refer to any available information filed with the SEC and other authorities by the basket components or the entities whose stock is included in the basket components and consult your tax advisor regarding the possible consequences to you in this regard.

In the opinion of our counsel, Morrison & Foerster LLP, it would generally be reasonable to treat a PLUS as a pre-paid cash-settled derivative contract in respect of the basket for U.S. federal income tax purposes, and the terms of the PLUS require a holder and us (in the absence of a change in law or an administrative or judicial ruling to the contrary) to treat the PLUS for all tax purposes in accordance with such characterization. If the PLUS are so treated, a U.S. holder should generally recognize capital gain or loss upon the sale, exchange or maturity of the PLUS in an amount equal to the difference between the amount a holder receives at such time and the holder’s tax basis in the PLUS. In general, a U.S. holder’s tax basis in the PLUS will be equal to the price the holder paid for the PLUS. Capital gain recognized by an individual U.S. holder is generally taxed at ordinary income rates where the property is held for one year or less. The deductibility of capital losses is subject to limitations.

Alternative Treatments. Alternative tax treatments of the PLUS are also possible and the IRS might assert that a treatment other than that described above is more appropriate. For example, it is possible to treat the PLUS, and the IRS might assert that a PLUS should be treated, as a single debt instrument. Pursuant to such characterization, the PLUS 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.

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

The IRS has released a notice that may affect the taxation of holders of the PLUS. According to the notice, the IRS and the U.S. Treasury Department are actively considering whether the holder of an instrument such as the PLUS should be required to accrue ordinary income on a current basis. It is not possible to determine what guidance they will ultimately issue, if any. It is possible, however, that under such guidance, holders of the PLUS will ultimately be required to accrue income currently and this could be applied on a retroactive basis. The IRS and the U.S. Treasury Department are also considering other relevant issues, including whether additional gain or loss from such instruments should be treated as ordinary or capital and whether the “constructive ownership rules” of Section 1260 of the Code, which very generally can impose an interest charge, might be applied to such

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instruments. Holders are urged to consult their tax advisors concerning the significance, and the potential impact, of the above considerations. We intend to treat the PLUS for U.S. federal income tax purposes in accordance with the treatment described in this document unless and until such time as the U.S. Treasury Department and IRS determine that some other treatment is more appropriate.

**Backup Withholding and Information Reporting.** Payments made with respect to the PLUS and proceeds from the sale or exchange of the PLUS 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 IRS 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 IRS.

Reports will be made to the IRS 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 PLUS. A non-U.S. holder is a beneficial owner of a PLUS that, for U.S. federal income tax purposes, is a non-resident alien individual, a foreign corporation, or a foreign estate or trust.

Except as described below, a non-U.S. holder will generally not be subject to U.S. federal income or withholding tax for amounts paid in respect of the PLUS, provided that (i) the holder complies with any applicable certification requirements, (ii) the payment is not effectively connected with the conduct by the holder of a U.S. trade or business, and (iii) if the holder is a non-resident alien individual, such holder is not present in the United States for 183 days or more during the taxable year of the sale, exchange or maturity of the PLUS. In the case of (ii) above, the holder generally would be subject to U.S. federal income tax with respect to any income or gain in the same manner as if the holder were a U.S. holder and, in the case of a holder that is a corporation, the holder may also be subject to a branch profits tax equal to 30% (or such lower rate provided by an applicable U.S. income tax treaty) of a portion of its earnings and profits for the taxable year that are effectively connected with its conduct of a U.S. trade or business, subject to certain adjustments. Payments made to a non-U.S. holder may be subject to information reporting and to backup withholding unless the holder complies with applicable certification and identification requirements as to its foreign status.

Under Section 871(m) of the Code, a "dividend equivalent" payment is treated as a dividend from sources within the United States. Such payments generally would be subject to a 30% U.S. withholding tax if paid to a non-U.S. holder. Under U.S. Treasury Department regulations, payments (including deemed payments) with respect to equity-linked instruments ("ELIs") that are "specified ELIs" may be treated as dividend equivalents if such specified ELIs reference an interest in an "underlying security," which is generally any interest in an entity taxable as a corporation for U.S. federal income tax purposes if a payment with respect to such interest could give rise to a U.S. source dividend. However, the IRS has issued guidance that states that the U.S. Treasury Department and the IRS intend to amend the effective dates of the U.S. Treasury Department regulations to provide that withholding on dividend equivalent payments will not apply to specified ELIs that are not delta-one instruments and that are issued before January 1, 2021. Based on our determination that the PLUS are not delta-one instruments, non-U.S. holders should not be subject to withholding on dividend equivalent payments, if any, under the PLUS. However, it is possible that the PLUS could be treated as deemed reissued for U.S. federal income tax purposes upon the occurrence of certain events affecting the basket components or the PLUS (for example, upon an Index rebalancing), and following such occurrence the PLUS 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 basket components or the PLUS should consult their tax advisors as to the application of the dividend equivalent withholding tax in the context of the PLUS and their other transactions. If any payments are treated as dividend equivalents subject to withholding, we (or the applicable withholding agent) would be entitled to withhold taxes without being required to pay any additional amounts with respect to amounts so withheld.

As discussed above, alternative characterizations of the PLUS 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 PLUS to become subject to withholding tax, we will withhold tax at the applicable statutory

rate. The IRS has also indicated that it is considering whether income in respect of instruments such as the PLUS should be subject to withholding tax. We will not be required to pay any additional amounts in respect of such withholding. Prospective investors should consult their own tax advisors in this regard.

Foreign Account Tax Compliance Act. The Foreign Account Tax Compliance Act (“FATCA”), imposes a 30% U.S. withholding tax on certain U.S. source payments of interest (and OID), dividends, or other fixed or determinable annual or periodical gain, profits, and income, and on the gross proceeds from a disposition of property (including payments at maturity, or upon a redemption or sale) 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 your behalf) unless such institution enters into an agreement with the U.S. Treasury Department to collect and provide to the U.S. Treasury Department certain information regarding U.S. 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 PLUS may constitute a “financial account” for these purposes and thus, be subject to information reporting requirements pursuant to FATCA. The legislation also generally imposes a withholding tax of 30% on withholdable payments made to a non-financial foreign entity, unless that 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.

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The U.S. Treasury Department and the IRS have announced that withholding on payments of gross proceeds from a sale or redemption of the PLUS will only apply to payments made after December 31, 2018. However, recently proposed regulations eliminate the requirement of withholding on gross proceeds from the sale or disposition of financial instruments. The U.S. Treasury Department has indicated that taxpayers may rely on these proposed regulations pending their finalization. If we determine withholding is appropriate with respect to the PLUS, we will withhold tax at the applicable statutory rate, and we will not pay any additional amounts in respect of such withholding. Therefore, if such withholding applies, any payments on the PLUS will be significantly less than what you would have otherwise received. Depending on your circumstances, these amounts withheld may be creditable or refundable to you. Foreign financial institutions and non-financial foreign entities located in jurisdictions that have an intergovernmental agreement with the United States governing FATCA may be subject to different rules. You are urged to consult with your own tax advisor regarding the possible implications of FATCA on your investment in the PLUS.

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#### Use of Proceeds and Hedging

The net proceeds from the sale of the PLUS will be used as described under “Use of Proceeds” in the accompanying prospectus supplement and prospectus and to hedge market risks of Royal Bank of Canada associated with its obligation to make the payment at maturity on the PLUS. The initial public offering price of the PLUS includes the underwriting discount and commission and the estimated cost of hedging our obligations under the PLUS.

Supplemental Information Regarding Plan of Distribution;

#### Conflicts of Interest

Pursuant to the terms of a distribution agreement, RBCCM, an affiliate of Royal Bank of Canada, will purchase the PLUS from Royal Bank of Canada for distribution to MSWM. RBCCM will act as agent for the PLUS and will receive a fee of \$0.175 per \$10 stated principal amount and will pay to MSWM a fixed sales commission of \$0.125 for each of the PLUS they sell. Of the amount per \$10 stated principal amount received by RBCCM, RBCCM will pay MSWM a structuring fee of \$0.05 for each PLUS.

MSWM may reclaim selling concessions allowed to individual brokers within MSWM in connection with the offering if, within 30 days of the offering, Royal Bank of Canada repurchases the PLUS distributed by such brokers.

Delivery of the PLUS will be made against payment for the PLUS on January 4, 2019, which is the fourth business day following the pricing date (this settlement cycle being referred to as “T+4”). Under Rule 15c6-1 of the Exchange Act, trades in the secondary market generally are required to settle in two business days, unless the parties to any such trade expressly agree otherwise. Accordingly, purchasers who wish to trade the PLUS more than two business days prior to the original issue date will be required to specify alternative settlement arrangements to prevent a failed settlement.

In addition, RBCCM or another of its affiliates or agents may use this document in market-making transactions after the initial sale of the PLUS, but is under no obligation to do so and may discontinue any market-making activities at any time without notice.

The value of the PLUS shown on your account statement may be based on RBCCM’s estimate of the value of the PLUS if RBCCM or another of our affiliates were to make a market in the PLUS (which it is not obligated to do). That estimate will be based on a price that RBCCM may pay for the PLUS in light of then prevailing market conditions, our creditworthiness and transaction costs. For an initial period of approximately three months, the value of the PLUS that may be shown on your account statement is expected to be higher than RBCCM’s estimated value of the PLUS at that time. This is because the estimated value of the PLUS will not include the agent’s commission and our hedging costs and profits; however, the value of the PLUS shown on your account statement during that period is initially expected to be a higher amount, reflecting the addition of the agent’s commission and our estimated costs and profits from hedging the PLUS. This excess is expected to decrease over time until the end of this period, and we reserve the right to shorten this period. After this period, if RBCCM repurchases your PLUS, it expects to do so at prices that reflect its estimated value.

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

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

#### Structuring the PLUS

The PLUS are our debt securities, the return on which is linked to the performance of the basket. As is the case for all of our debt securities, including our structured notes, the economic terms of the PLUS reflect our actual or perceived creditworthiness at the time of pricing. In addition, because structured notes result in increased operational, funding and liability management costs to us, we typically borrow the funds under these securities at a rate that is more favorable to us than the rate that we might pay for a

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conventional fixed or floating rate debt security of comparable maturity. Using this relatively lower implied borrowing rate, rather than the secondary market rate, along with the fees and expenses associated with structured notes, reduced the initial estimated value of the PLUS at the time their terms are set. Unlike the estimated value included in this document, any value of the PLUS determined for purposes of a secondary market transaction may be based on a different funding rate, which may result in a lower value for the PLUS than if our initial internal funding rate were used.

In order to satisfy our payment obligations under the PLUS, we may choose to enter into certain hedging arrangements (which may include call options, put options or other derivatives) on the issue date with RBCCM or one of our other subsidiaries. The terms of these hedging arrangements take into account a number of factors, including our creditworthiness, interest rate movements, the volatility of each basket component, and the tenor of the PLUS. The economic terms of the PLUS and their initial estimated value depend in part on the terms of these hedging arrangements.

The lower implied borrowing rate, the underwriting commission and the hedging-related costs relating to the PLUS reduced the economic terms of the PLUS to you and resulted in the initial estimated value for the PLUS on the pricing date being less than their public offering price. See “Risk Factors—The initial estimated value of the PLUS is less than the price to the public” above.

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Employee Retirement Income Security Act

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

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 PLUS. 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 PLUS should consider whether the purchase or holding of such instruments might constitute a “prohibited transaction.”

Royal Bank of Canada 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 of Canada (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 PLUS are acquired by or with the assets of a Plan, and with respect to which Royal Bank of Canada or any of its affiliates is a “party in interest” or a “disqualified person,” unless those PLUS 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 PLUS, or exercising any rights related thereto, to represent that (a) such purchase, holding and exercise of the PLUS 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 of Canada 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 PLUS, or any exercise related thereto or as a result of any exercise by Royal Bank of Canada or any of its affiliates of any rights in connection with the PLUS, and no advice provided by Royal Bank of Canada 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 PLUS and the transactions contemplated with respect to the PLUS.

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