

BANK OF MONTREAL /CAN/  
Form FWP  
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Subject to Completion, dated September 4, 2018

Pricing Supplement to the Prospectus dated April 27, 2017, the Prospectus Supplement  
dated April 27, 2017 and the Product Supplement dated August 3, 2017

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**Notes Linked to the BMO Core Investor® 5% Target Volatility Index, due September 30, 2021**

The notes are designed for investors who seek a [1.1 to 1.2]-to-1 positive return (to be determined on the Pricing Date) if the level of the BMO Core Investor® 5% Target Volatility Index (the “Index”) increases from the Initial Level to the Final Level. If the Final Level of the Index is equal to or less than the Initial Level, you will receive \$1,000 per \$1,000 in principal amount.

The Index is a proprietary index that is based on the Modern Portfolio Theory approach to asset allocation, which suggests how investors can select a portfolio from available assets to help maximize expected return for a given amount of risk. The Index is reweighted monthly and rebalanced daily to target a 5% annualized volatility level. Please see “The Index” section below for more details. The Index follows a proprietary strategy that operates on the basis of the rules described in this document. Potential investors in the notes should determine whether the Index is appropriate in light of their individual circumstances and investment objectives.

The notes will not bear interest. The notes will not be listed on any securities exchange.

Any payment at maturity is subject to the credit risk of Bank of Montreal.

The offering is expected to price on or about September 25, 2018, and the notes are expected to settle through the facilities of The Depository Trust Company on or about September 28, 2018.

The notes are scheduled to mature on or about September 30, 2021.

The notes will be issued in minimum denominations of \$1,000 and integral multiples of \$1,000.

The CUSIP number of the notes is 06367WAD5.

Our subsidiary, BMO Capital Markets Corp. (“BMOCM”), is the agent for this offering. See “Supplemental Plan of Distribution (Conflicts of Interest)” below.

The notes will not be subject to conversion into our common shares or the common shares of any of our affiliates under subsection 39.2(2.3) of the Canada Deposit Insurance Corporation Act (the “CDIC Act”).

	<u>Price to Public<sup>(1)</sup></u>	<u>Agent’s Commission<sup>(1)</sup></u>	<u>Proceeds to Bank of Montreal</u>
	100%	2.50%	97.50%
Per Note			
	US\$1,000	US\$25	US\$975
Total	US\$	US\$	US\$

<sup>(1)</sup> Certain dealers who purchase the notes for sale to certain fee-based advisory accounts may forego some or all of their selling concessions, fees or commissions. The public offering price for investors purchasing the notes in these accounts may be between \$975 and \$1,000 per \$1,000 in principal amount.

*Investing in the notes involves risks, including those described in the “Risk Factors” section beginning on page P-8 of this pricing supplement, the “Additional Risk Factors Relating to the Notes” section beginning on page PS-5 of the product supplement, and the “Risk Factors” section beginning on page S-1 of the prospectus supplement and on page 8 of the prospectus.*

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these notes or passed upon the accuracy of this pricing supplement, the product supplement, the prospectus supplement or the prospectus. Any representation to the contrary is a criminal offense.**

The notes will be our unsecured obligations and will not be savings accounts or deposits that are insured by the United States Federal Deposit Insurance Corporation, the Deposit Insurance Fund, the Canada Deposit Insurance Corporation or any other governmental agency or instrumentality or other entity.

On the date of this preliminary pricing supplement, the estimated initial value of the notes is \$954.30 per \$1,000 in principal amount based on the terms set forth above. The estimated initial value of the notes on the pricing date may differ from this value but will not be less than \$925 per \$1,000 in principal amount. However, as discussed in more detail in this pricing supplement, the actual value of the notes at any time will reflect many factors and cannot be predicted with accuracy.

**BMO CAPITAL MARKETS**



**Key Terms:**

**Underlying Asset:** The BMO Core Investor® 5% Target Volatility Index (Bloomberg symbol: BMOICI5). See the section below entitled “The Index” for additional information about the Index.

If the Percentage Change is positive, then the amount that the investors will receive at maturity for each \$1,000 in principal amount of the notes will equal:

**Payment at Maturity:**  $\text{Principal Amount} + (\text{Principal Amount} \times \text{Percentage Change} \times \text{Upside Leverage Factor})$

If the Percentage Change is less than or equal to zero, then the amount that the investors will receive at maturity for each \$1,000 in principal amount of the notes will equal the principal amount.

**Initial Level:** The closing level of the Index on the pricing date. The Initial Level for the notes will be set forth in the final pricing supplement for the notes.

**Final Level:** The closing level of the Index on the Valuation Date.

Final Level – Initial Level, expressed as a percentage

**Percentage Change:**  $\frac{\text{Final Level} - \text{Initial Level}}{\text{Initial Level}}$

**Upside Leverage Factor:** [110% - 120%], to be determined on the Pricing Date.

**Pricing Date:** On or about September 25, 2018

**Settlement Date:** On or about September 28, 2018

**Valuation Date:** On or about September 27, 2021

**Maturity Date:** On or about September 30, 2021

Not applicable

Automatic  
Redemption:

CUSIP Number: 06367WAD5

Calculation Agent  
for the BMOCM (sometimes referred to in this document as the “Note Calculation Agent”)

Notes:

Selling Agent: BMOCM

The Pricing Date, Settlement Date, Valuation Date and Maturity Date for the notes are subject to change. The actual Initial Level, Pricing Date, Settlement Date, Valuation Date and Maturity Date for the notes will be set forth in the final pricing supplement.

**Payoff Example**

The following table shows the hypothetical payout profile of an investment in the notes reflecting a hypothetical Upside Leverage Factor of 115% (the midpoint of the Upside Leverage Factor range of 110% to 120%). Please see the hypothetical return section below for more detailed examples.

## Summary of the Index

The Index is a proprietary index that is based on the Modern Portfolio Theory approach to asset allocation. This theory suggests how investors can select a portfolio from available assets to help maximize expected return for a given amount of risk.

The Index rebalances monthly into a new portfolio and has a daily volatility management mechanism.

### 1. Monthly Reweighting of the Index and selection of the Monthly Unique Portfolio

Each month, on the Reweighting Date, the Index identifies all possible portfolio combinations that comply with the Index Rules (“Eligible Portfolios”).

For each of these Eligible Portfolios, the Index Calculation Agent (as defined below) calculates the performance and annualized realized volatility on a six-month trailing basis.

An “Efficient Frontier” is constructed using the performance and volatility of all these Eligible Portfolios. The “Efficient Frontier” is designed to represent the Eligible Portfolios with the maximum historical returns for the targeted rate of volatility.

From the Eligible Portfolios, the Index Calculation Agent selects as the Monthly Unique Portfolio the Eligible Portfolio that would have resulted in the highest return over the previous six months that had an annualized volatility of 5% or less for the same period.

If no Eligible Portfolio exhibits a volatility of 5% or less, the target volatility is increased in increments of 1% until a Monthly Unique Portfolio is found.

The curved line in the following graph illustrates the Efficient Frontier:

Volatility

Each star on the graph above represents a different hypothetical Eligible Portfolio.

2. Daily Rebalancing Mechanism

The Index also targets a volatility of 5% on a daily basis by varying the exposure of the Index to the Monthly Unique Portfolio.

When the 1-month historical volatility is greater than 5%, the Index will reduce the exposure to the Monthly Unique Portfolio by increasing its exposure to Cash.

When the 1-month historical volatility is less than 5%, the Index will increase the exposure to the Monthly Unique Portfolio by reducing its exposure to Cash.

The exposure of the Index to the Monthly Unique Portfolio on a daily basis will always exceed 0%. The exposure cannot exceed 100% if the Monthly Unique Portfolio does not contain Cash. If the Monthly Unique Portfolio contains Cash, the exposure can be more than 100% (up to 117.65% when the Cash weight in the Monthly Unique Portfolio is at its Cap of 15%).

The maximum effective exposure of an Index Component in the Monthly Unique Portfolio on a daily basis may be greater than its Asset Cap, up to a maximum of 117.65% of its Asset Cap. This can occur when the Monthly Unique Portfolio includes exposure to Cash, and there is a significant decrease in volatility during the month that causes the Index to increase its exposure to the Monthly Unique Portfolio and completely eliminate its exposure to Cash.



The following diagram illustrates the effect of daily rebalancing:

No assurance can be given that this investment strategy will be successful or that the Index will outperform any alternative portfolio or strategy that might be constructed from the Index Components. Furthermore, no assurance can be given that the Index will achieve its target volatility of 5%. The actual realized volatility of the Index may be greater or less than 5%.

#### *Index Composition*

The Index is a notional portfolio that tracks the total return of the underlying investments of a portfolio of 8 exchange-traded funds (each, a “Securities Component” and collectively, the “Securities Components”) and the U.S. Federal Funds Rate (the “Cash Component” and, together with the Securities Components, the “Index Components”). The total return of the Index is determined based, in part, on the reinvestment of dividends and distributions declared and paid on the Securities Components, net of withholding taxes that would be payable by the Issuer had it received such dividends or distributions.

The Securities Components represent a diverse range of sectors, asset classes and geographic regions. The Cash Component represents the interest rate at which U.S. banks may lend reserve balances to other depository institutions on an overnight basis. The Index may change in certain circumstances, as discussed below.

Each Index Component is listed below together with its cap (maximum Weight in the Monthly Unique Portfolio), sector cap, asset class and Bloomberg ticker symbol:

SECTOR	ASSET CLASS	INDEX COMPONENT	DESCRIPTION	BLOOMBERG SYMBOL	ASSET CAP
<b>Equities</b> 75%	U.S. Large Cap Equities	SPDR® S&P 500 ETF	This ETF tracks the S&P 500 Index. This ETF invests in a portfolio representing all the stocks in the S&P 500 Index.	SPY UP EQUITY	25%
	U.S. Small Cap Equities	iShares® Russell 2000 ETF	This ETF tracks the performance of the Russell 2000 Index. Its investments are in the smallest 2000 companies from the Russell 3000 Index.	IWM UP EQUITY	30%
	U.S. Equities	iShares® Select Dividend ETF	This ETF tracks the price and yield performance of the Dow Jones Select Dividend Index. The ETF predominantly holds mid and large-cap U.S. stocks. Its investments are selected based on dividend yield.	DVY UQ EQUITY	20%
	International Large/Mid Cap Equities (ex. U.S. and Canada)	iShares® MSCI EAFE ETF	This ETF tracks the performance of the MSCI EAFE Index. Its investments are focused on developed countries across the world, excluding the U.S. and Canada.	EFA UP EQUITY	10%
	U.S. Investment Grade Corporate Debt	iShares® iBOXX Investment Grade ETF	This ETF seeks to track the investment results of an index composed of U.S. dollar-denominated, investment-grade corporate bonds.	LQD UP EQUITY	25%
<b>Fixed Income</b> 75%	Emerging Market Sovereign Debt	PowerShares® Emerging Market Sovereign Debt ETF	This ETF tracks the DBIQ Emerging Market USD Liquid Balanced Index. The index measures the potential returns of a theoretical portfolio of liquid emerging market U.S. dollar-denominated government bonds.	PCY UP EQUITY	5%
	U.S. High Yield Corporate Debt	iShares® iBOXX USD High Yield ETF	This ETF seeks to track the investment results of an index composed of U.S. dollar-denominated, high yield corporate bonds.	HYG UP EQUITY	15%
	U.S. Long Dated Government Bonds	iShares® 20+ Years Treasury Bond ETF	This ETF seeks to track the investment results of an index composed of U.S. Treasury bonds with remaining maturities greater than 20 years.	TLT UQ EQUITY	30%
<b>Cash</b> 15%	Cash	Federal Funds Rate	The federal funds rate is an interest rate that represents the rate at which U.S. banks may lend reserve balances to other	FEDL01 INDEX	15%

depository institutions overnight, on an uncollateralized basis.

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## Additional Terms of the Notes

You should read this pricing supplement together with the product supplement dated August 3, 2017, the prospectus supplement dated April 27, 2017 and the prospectus dated April 27, 2017. **This pricing supplement, together with the documents listed below, contains the terms of the notes 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, fact sheets, brochures or other educational materials of ours or the agent.** You should carefully consider, among other things, the matters set forth in “Additional Risk Factors Relating to the Notes” in the product supplement, as the notes 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 notes.

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):

Product supplement dated August 3, 2017:

<https://www.sec.gov/Archives/edgar/data/927971/000121465917004765/p83170424b5.htm>

Prospectus supplement dated April 27, 2017:

<https://www.sec.gov/Archives/edgar/data/927971/000119312517142764/d381374d424b5.htm>

Prospectus dated April 27, 2017:

<https://www.sec.gov/Archives/edgar/data/927971/000119312517142728/d254784d424b2.htm>

Our Central Index Key, or CIK, on the SEC website is 927971. As used in this pricing supplement, “we,” “us” or “our” refers to Bank of Montreal.

We have filed a registration statement (including a prospectus) with the SEC for the offering to which this document relates. Before you invest, you should read the prospectus in that registration statement and the other documents that we have filed with the SEC for more complete information about us and this offering. You may obtain these documents free of charge by visiting the SEC’s website at <http://www.sec.gov>. Alternatively, we will arrange to send to you the prospectus (as supplemented by the prospectus supplement and product supplement) if you request it by calling our agent toll-free at 1-877-369-5412.

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## **Risk Factors**

An investment in the notes involves significant risks. Investing in the notes is not equivalent to investing directly in the Index. These risks are explained in more detail in the “Additional Risk Factors Relating to the Notes” section of the product supplement.

### **General Risks Relating to the Notes**

**You may not earn a return on your investment.** — The payment you will receive at maturity will depend on whether the level of the Index increases from the Initial Level to the Final Level. If the level of the Index decreases from the Initial Level to the Final Level (or if the level of the Index is unchanged), you will not receive any positive return on the Notes and you will only receive the principal amount.

**Your investment is subject to the credit risk of Bank of Montreal.** — Our credit ratings and credit spreads may adversely affect the market value of the notes. Investors are dependent on our ability to pay the amount due at maturity, and therefore investors are subject to our credit risk and to changes in the market’s view of our creditworthiness. Any decline in our credit ratings or increase in the credit spreads charged by the market for taking our credit risk is likely to adversely affect the value of the notes.

**Potential conflicts.** — We and our affiliates play a variety of roles in connection with the issuance of the notes, including acting as calculation agent. In performing these duties, the economic interests of the calculation agent and other affiliates of ours are potentially adverse to your interests as an investor in the notes. We or one or more of our affiliates may also engage in trading of securities included in or represented by the Index on a regular basis as part of our general broker-dealer and other businesses, for proprietary accounts, for other accounts under management or to facilitate transactions for our customers. Any of these activities could adversely affect the level of the Index and, therefore, the market value of the notes. We or one or more of our affiliates may also issue or underwrite other securities or financial or derivative instruments with returns linked or related to changes in the performance of the Index or its components. By introducing competing products into the marketplace in this manner, we or one or more of our affiliates could adversely affect the market value of the notes.

**Our initial estimated value of the notes will be lower than the price to public.** — Our initial estimated value of the notes is only an estimate, and is based on a number of factors. The price to public of the notes will exceed our initial estimated value, because costs associated with offering, structuring and hedging the notes are included in the price to public, but are not included in the estimated value. These costs include the underwriting discount and selling concessions, the profits that we and our affiliates expect to realize for assuming the risks in hedging our obligations under the notes and the estimated cost of hedging these obligations. The initial estimated value of the notes may be as low as the amount indicated on the cover page of this pricing supplement.

**Our initial estimated value does not represent any future value of the notes, and may also differ from the estimated value of any other party.** — Our initial estimated value of the notes as of the date of this preliminary pricing supplement is, and our estimated value as determined on the Pricing Date will be, derived using our internal pricing models. This value is based on market conditions and other relevant factors, which include the volatility of the Index, dividend rates and interest rates. Different pricing models and assumptions could provide values for the notes that are greater than or less than our initial estimated value. In addition, market conditions and other relevant factors after the Pricing Date are expected to change, possibly rapidly, and our assumptions may prove to be incorrect. After the Pricing Date, the value of the notes could change dramatically due to changes in market conditions, our creditworthiness, and the other factors set forth in this pricing supplement and the product supplement. These changes are likely to impact the price, if any, at which we or BMOCM would be willing to purchase the notes from you in any secondary market transactions. Our initial estimated value does not represent a minimum price at which we or our affiliates would be willing to buy your notes in any secondary market at any time.

**The terms of the notes are not determined by reference to the credit spreads for our conventional fixed-rate debt.** — To determine the terms of the notes, we will use an internal funding rate that represents a discount from the credit spreads for our conventional fixed-rate debt. As a result, the terms of the notes are less favorable to you than if we had used a higher funding rate.

**Certain costs are likely to adversely affect the value of the notes.** — Absent any changes in market conditions, any secondary market prices of the notes will likely be lower than the price to public. This is because any secondary market prices will likely take into account our then-current market credit spreads, and because any secondary market prices are likely to exclude all or a portion of the underwriting discount and selling concessions and the hedging profits and estimated hedging costs that are included in the price to public of the notes and that may be reflected on your account statements. In addition, any such price is also likely to reflect a discount to account for costs associated with establishing or unwinding any related hedge transaction, such as dealer discounts, mark-ups and other transaction costs. As a result, the price, if any, at which BMOCM or any other party may be willing to purchase the notes from you in secondary market transactions, if at all, will likely be lower than the price to public. Any sale that you make prior to the Maturity Date could result in a substantial loss to you.

**You will not have any shareholder rights and will have no right to receive any securities of any company included in or represented by the Index at maturity.** — Investing in the notes will not make you a holder of any securities of any company included in or represented by the Index. Neither you nor any other holder or owner of the notes will have any voting rights, any right to receive dividends, interest payments, or other distributions, or any other rights with respect to those securities.

**Lack of liquidity.** — The notes will not be listed on any securities exchange. BMOCM may offer to purchase the notes in the secondary market, but is not required to do so. Even if there is a secondary market, it may not provide enough liquidity to allow you to trade or sell the notes easily. Because other dealers are not likely to make a secondary market for the notes, the price at which you may be able to trade your notes is likely to depend on the price, if any, at which BMOCM is willing to buy the notes.

**Hedging and trading activities.** — We or any of our affiliates may carry out hedging activities related to the notes, including purchasing or selling securities included in or represented by the Index, or futures or options relating to the Index or its components, or other derivative instruments with returns linked or related to changes in the performance of the Index or its components. We or our affiliates may also engage in trading relating to the Index or its components from time to time. Any of these hedging or trading activities on or prior to the Pricing Date and during the term of the notes could adversely affect our payment to you at maturity.

**Many economic and market factors will influence the value of the notes.** — In addition to the level of the Index and interest rates on any trading day, the value of the notes will be affected by a number of economic and market factors that may either offset or magnify each other, and which are described in more detail in the product supplement.

**You must rely on your own evaluation of the merits of an investment linked to the Index.** — In the ordinary course of their businesses, our affiliates from time to time may express views on expected movements in the level of the Index or the prices of the securities included or represented by in the Index. One or more of our affiliates have published, and in the future may publish, research reports that express views on the Index or these securities. However, these views are subject to change from time to time. Moreover, other professionals who deal in the markets relating to the Index at any time may have significantly different views from those of our affiliates. You are encouraged to derive information concerning the Index and its components from multiple sources, and you should not rely on the views expressed by our affiliates.

Neither the offering of the notes nor any views which our affiliates from time to time may express in the ordinary course of their businesses constitutes a recommendation as to the merits of an investment in the notes.

**U.S. taxpayers will be required to pay taxes on the notes each year.** — The notes will likely be treated as debt instruments subject to special rules governing contingent payment debt instruments for U.S. federal income tax purposes. If you are a United States holder (as defined in the accompanying prospectus), you generally will be required to pay taxes on ordinary income over the term of the notes based on the comparable yield for the notes, even though you will not receive any payments from us until maturity. This comparable yield is determined solely to



calculate the amounts you will be taxed on prior to maturity and is neither a prediction nor a guarantee of what the actual yield will be. Any gain you may recognize on the sale or maturity of the notes will be ordinary income. Any loss you may recognize upon the sale of the notes will generally be ordinary loss to the extent of the interest you included as income in the current or previous taxable years in respect of the notes and thereafter will be capital loss.

Please read carefully the section entitled "U.S. Federal Tax Information" in this pricing supplement, the section entitled "Supplemental Tax Considerations-Supplemental U.S. Federal Income Tax Considerations" in the accompanying product supplement, the section entitled "United States Federal Income Taxation" 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.

### **Risk Factors Relating to the Index and the Index Components**

**The strategy that underlies the Index may not be successful.** — The Index follows a proprietary strategy that operates on the basis of the Index Rules. No assurance can be given that the investment strategy on which the Index is based will be successful or that the Index will outperform any alternative strategy that might be employed in respect of the Index Components. Furthermore, no assurance can be given that the Index will achieve its target volatility. Accordingly, potential investors in the notes should determine whether the Index and the Index Rules are appropriate for them in light of their individual circumstances and investment objectives.

**The Index may not approximate its target volatility.** — No assurance can be given that the Index will approximate its target volatility. The actual realized volatility of the Index may be greater or less than its target volatility. The monthly weights of each Monthly Unique Portfolio are based in part on the historical volatility of the Index Components over the specified measurement period and are subject to maximum aggregate and individual weighting constraints. In addition, the exposure of the Index to the Index Components is adjusted dynamically on a daily basis, based on the historical volatility of the Index Components, with the intention of achieving the target volatility. However, there is no guarantee that volatility trends existing in the relevant measurement periods will continue in the future. Furthermore, the monthly rebalancing of the Index may not be sufficient to reduce exposure to the Monthly Unique Portfolio if there is a sudden increase in volatility. The volatility of the Index Components on any day may change quickly and unexpectedly. Accordingly, the actual realized annualized volatility of the Index may be greater than or less than the target volatility, which may adversely affect the level of the Index and the value of the notes.

**The Index has limited historical information.** — The Index was created in November 2017. The Index Calculation Agent has calculated limited hypothetical information about how the Index would have performed had it been calculated in the past.

As discussed below in the section “The Index—Historical Performance of the Index,” the hypothetical historical information cannot fully reflect the actual results that would have occurred had the Index actually been calculated during the indicated period, and should not be relied upon as an indication of the Index’s future performance. Because the Index is of recent origin and has only limited actual historical performance data, your investment in the notes may involve a greater risk than investing in a security linked to one or more indices with an established record of performance. A longer history of actual performance may have been helpful in providing more reliable information on which to assess the Index in making your investment decision.

**The level of the Index will be reduced by an annual fee.** — On each Index Business Day, the level of the Index will be reduced by an annual fee, which is set at the rate of 2.35% per annum. This fee will be applied on each Index Business Day, and will increase as the level of the Index increases, and decrease as the level of the Index decreases. As a result of the deduction of this fee, the level of the Index will be lower than the level of a hypothetical identically constituted synthetic portfolio from which a fee of this kind is not deducted. If the Index Components do not sufficiently increase in value, the level of the Index may decrease, even if the value of some or all of the Index Components increase.

**An investment in the notes carries risks associated with the Index’s momentum investment strategy.** — The Index is constructed using what is often referred to as a momentum investment strategy. Momentum investing generally seeks to capitalize on positive trends in the price of the applicable assets. As such, the weights of the Index Components are based to a significant extent on the performance of the ETFs from the immediately preceding six months. However, there is no guarantee that trends existing in the preceding six months will continue in the future. A momentum strategy is different from a strategy that seeks long-term exposure to a portfolio consisting of constant components with fixed weights. The Index may fail to realize gains that could occur as a result of representing assets that have experienced price declines, but after which experience a sudden price increase. As a result, if market conditions do not represent a continuation of prior observed trends, the level of the Index, which is rebalanced based on prior trends, may decline. Additionally, even when the closing levels of the Securities Components are trending

downwards, the Index will continue to be composed of them. Due to the “long-only” construction of the Index, the weight of each Securities Component will not fall below zero in respect of each Reweighting Date, even if the relevant Securities Component displayed a negative performance over the relevant six month period. No assurance can be given that the investment strategy used to construct the Index will outperform any alternative index that might be constructed from the Index Components or any related assets.

**The Index may perform poorly during periods characterized by short-term volatility.** — The Index’s strategy is based on momentum investing. Momentum investing strategies typically identify the current market direction in trending markets. However, in non-trending, sideways markets, momentum investment strategies are subject to “whipsaws.” A whipsaw occurs when the market reverses and does the opposite of what is indicated by the trend indicator, resulting in a trading loss during the particular period. Consequently, the Index may perform particularly poorly in non-trending, “choppy” markets characterized by short-term volatility.

**The exposure of the notes to the Index Components may exceed 100%.** — The notes employ a daily risk control mechanism in order to achieve its volatility target of 5%. This mechanism can potentially increase the exposure of the notes to the Securities Components of up to 117.65% of their Asset Caps, which would increase the adverse impact on the value of the notes if the prices of the Securities Components decline. However, please note that the sum of the Securities Components will not be greater than 100% at any time, and the Index as a whole will not be leveraged. See the section, “The Index—Index Composition—Daily Rebalancing.”

**The Index may be partially uninvested.** — The weight of the Cash Component (if any) for the Index at any given time represents the portion of the Index that is uninvested in the Securities Components at that time. Accordingly, to the extent that the Index is allocated to the Cash Component, it may not reflect the full increase of any relevant Securities Components.

Similarly, the Index adjusts its exposure to the Monthly Unique Portfolio on a daily basis based upon the historical volatility of the Index Components. When the historical volatility is greater than the target volatility, the Index will reduce its exposure to the Monthly Unique Portfolio. As a result, the Index may not reflect the full increase of any relevant Securities Components.

**The Index's target volatility may reduce the appreciation potential of the Index, and may cause the Index to underperform the Index Components.** — Under normal circumstances, equity markets exhibit significantly higher volatility than the Target Volatility of 5%. Accordingly, the target volatility of 5% may have the effect of allocating the Index toward cash or Index Components that provide exposure to fixed-income assets, which typically have lower volatility than Index Components that provide exposure to equities. These typically lower-volatility Index Components may have lower return potential than the Index Components that typically have a higher volatility. If the Index has a relatively low allocation to the Index Components that typically exhibit higher volatility, the Index will not fully participate in any appreciation among those Index Components.

Moreover, if the Index has a relatively high allocation to Index Components that provide exposure to cash or fixed-income assets, it will be particularly sensitive to factors that adversely affect the value of these components, such as increases in interest rates or declining perceptions of credit quality. A low target volatility does not mean that the Index is less likely to decline than it would be if it had a higher target volatility. In fact, a low-volatility portfolio may decline in value even while a high-volatility portfolio appreciates.

**Correlation of performance among the Securities Components may reduce the performance of the Notes.** — The performance of the Securities Components may become highly correlated from time to time during the term of the notes, including, but not limited to, a period in which there is a substantial decline in a particular sector or asset type represented by the Securities Components and which has a higher weighting in the Index relative to any of the other sectors or asset types, as determined under the Index Rules. High correlation during periods of negative returns among the Securities Components representing any one sector or asset type and which Securities Components have a substantial percentage weighting in the Index could have an adverse effect on any payments on, and the value of, the notes.

**Some of the Index Components may decrease in value, even if other Index Components increase in value.** — The performance of the Index is dependent on the performance of the 9 Index Components (being the 8 Securities Components and the Cash Component) and their underlying securities. A decrease in the price of the Index Components will adversely affect the Index and may affect the notes. Furthermore, increases in the value of some of the Index Components may be offset by declines in the level of other Index Components. These factors are beyond our control.

**The Index is not actively managed.** — The Index operates by pre-determined rules, as described below. There will be no active management of the Index to enhance returns or limit losses. An actively managed investment may at times respond more directly and appropriately to immediate market, political, economic, financial or other factors than the non-actively managed Index.

**The Index Calculation Agent has limited ability to impact the level of the Index, which may result in a conflict of interest.** — The Index Calculation Agent is bound by the Index Rules in determining the Index Level. Except upon the occurrence of certain events, as described in Annex C below, the Index Calculation Agent has no discretion in applying the Index Rules to determine the Weights to be applied to the Index Components on each Reweighting Date. Subject to limited discretion to base the Index Level on the previous month's Monthly Unique Portfolio for up to two Index Business Days after a Reweighting Date, the Index Calculation Agent has no ability to change the exposure of the Index to the Monthly Unique Portfolio on each Index Business Day between Reweighting Dates. However, the Index Rules confer on the Index Calculation Agent limited discretion in making certain determinations and calculations from time to time. In addition, the Index Calculation Agent may have to take steps to resolve ambiguities in the Index Rules, including, if necessary, amending the Index Rules. While the Index Calculation Agent will act in good faith and in a commercially reasonable manner with respect to the performance of its obligations and the exercise of its discretion under the Index Rules, the exercise of discretion in the making of calculations and determinations may adversely affect the performance of the Index.

All determinations of the Index Calculation Agent in respect of the Index shall be final, conclusive and binding and no person shall be entitled to make any claim in respect thereof against the Index Calculation Agent, any of its affiliates or any of their respective directors, officers, employees, representatives, delegates or agents.

**Consequences of special circumstances.** — In certain circumstances, the Note Calculation Agent or the Index Calculation Agent may, as it determines appropriate:

- o adjust the components or variables in calculating the payments on the notes;

- o defer the timing of the calculation of the payments on the notes;
- o replace a Securities Component with a comparable ETF or index; or

on the occurrence of an Extraordinary Event, instead of paying the amount due on the notes, causing us to redeem the notes and to pay an amount based on the estimated present value on the occurrence of the Extraordinary Event of the payment that would have been payable at maturity if the Extraordinary Event had not occurred.

Please see “Special Circumstances” in Appendix C for a discussion of these circumstances.

### **Risks Relating to the ETFs**

**You will not have any shareholder rights and will have no right to receive any shares of any ETF at maturity.** — Investing in the notes will not make you a holder of any shares of any ETF. You will not have any voting rights, any right to receive dividends or other distributions or any other rights with respect to any ETF.

**Changes that affect an index underlying an ETF could affect the market value of the notes and the amount you will receive at maturity.** — The policies of a sponsor of any index that is tracked by an ETF (an “index sponsor”) concerning the calculation of that index, additions, deletions or substitutions of the components of that index and the manner in which changes affecting those components, such as stock dividends, reorganizations or mergers, may be reflected in the index and, therefore, could affect the amount payable on the notes at maturity, and the market value of the notes prior to maturity. The amount payable on the notes and their market value could also be affected if the applicable index sponsor changes these policies, for example, by changing the manner in which it calculates the index, or if the index sponsor discontinues or suspends the calculation or publication of the index.

**We have no affiliation with any index sponsor and will not be responsible for any actions taken by an index sponsor.** — No index sponsor is an affiliate of ours or will be involved in the offering of the notes in any way. Consequently, we have no control over the actions of any index sponsor, including any actions of the type that would require the Note Calculation Agent or the Index Calculation Agent to adjust the payment to you at maturity. No index sponsor has any obligation of any sort with respect to the notes. Thus, no index sponsor has any obligation to take your interests into consideration for any reason, including in taking any actions that might affect the value of the notes. None of our proceeds from the issuance of the notes will be delivered to any index sponsor.

**You will have no rights against the sponsor of the relevant ETF.** — The notes are not sponsored, endorsed, sold or promoted by any sponsor of any ETF. No sponsor of any ETF has passed on the legality or suitability of, or the accuracy or adequacy of descriptions and disclosures relating to, the notes. No sponsor of any ETF makes any representation or warranty, express or implied, to you or any member of the public regarding the advisability of

investing generally or the notes in particular, or the ability of the relevant ETF to track general market performance. No sponsor of any ETF has any obligation to take our needs or your needs into consideration in determining, composing or calculating that ETF, or in making changes to that ETF. No sponsor of any ETF is responsible for, and none of them has participated in the determination of, the timing, prices or quantities of the notes to be issued or in the determination or calculation of the equation by which the amounts to be paid on the notes are to be determined. No sponsor of any ETF has any liability in connection with the administration, marketing or trading of the notes.

**The policies of an ETF sponsor or investment advisor, as applicable, and changes that affect the ETF or the relevant underlying index could adversely affect the amount payable on the notes and their market value.** — The policies of the sponsor or investment advisor, as applicable, of the relevant ETF concerning the calculation of the ETF's net asset value, additions, deletions or substitutions of securities in that ETF and the manner in which changes affecting the relevant underlying index are reflected in the ETF could affect the market price of the shares of the ETF and, therefore, the amount payable on your notes on the maturity date and their market value before that date. The amount payable on your notes and their market value could also be affected if the ETF sponsor or investment advisor, as applicable, changes these policies, for example, by changing the manner in which it calculates the ETF's net asset value, or if the ETF sponsor or investment advisor, as applicable, discontinues or suspends calculation or publication of the ETF's net asset value, in which case it may become difficult to determine the market value of the notes.

**We and our affiliates do not have any affiliation with the investment advisor of an ETF and are not responsible for its public disclosure of information.** — Each investment advisor of an ETF advises that ETF on various matters including matters, relating to the policies, maintenance and calculation of the ETF. We and our affiliates are not affiliated with the investment advisor of these ETFs in any way and have no ability to control or predict its actions, including any errors in or discontinuance of disclosure regarding their methods or policies relating to the ETF. The investment advisors are not involved in the offering of the notes in any way and have no obligation to consider your interests as an owner of the notes in taking any actions relating to the ETF that might affect the value of the notes.

Neither we nor any of our affiliates assumes any responsibility for the adequacy or accuracy of the information about an ETF or the investment advisor of such ETF contained in any public disclosure of information by such investment advisor. You, as an investor in the notes, should make your own investigation into the ETFs.

**The correlation between the performance of an ETF and the performance of the ETF's underlying index may be imperfect.** — The performance of an ETF is linked principally to the performance of the ETF's underlying index. However, the performance of an ETF may also be linked in part to other assets, because some ETFs generally invest a specified percentage in other investments. In addition, while the performance of an ETF is linked principally to the performance of such ETF's underlying index, ETFs generally invest in a representative sample of the securities included in such ETF's underlying index and generally do not hold all or substantially all of the securities included in such ETF's underlying index. Finally, the performance of an ETF and of the ETF's underlying index will generally vary due to transaction costs, certain corporate actions and timing variances. During periods of market volatility, securities held by an ETF may be unavailable in the secondary market, market participants may be unable to calculate accurately the intraday net asset value per share of an ETF, and the liquidity of an ETF may be adversely affected. This kind of market volatility may also disrupt the ability of market participants to create and redeem shares of an ETF. Further, market volatility may adversely affect, sometimes materially, the prices at which market participants are willing to buy and sell shares of an ETF. As a result, under these circumstances, the market value of an ETF may vary substantially from the net asset value per share of that ETF.

Imperfect correlation between the securities held by an ETF and the securities included in such ETF's underlying index; changes to an ETF's underlying index; and changes to regulatory policies, may cause the performance of an ETF to differ from the performance of the ETF's underlying index. In addition, because shares of ETFs are traded on exchanges and are subject to market supply and investor demand, the market value of one share of an ETF may differ from its net asset value per share and the shares of an ETF may trade at, above or below their net asset value per share.

Because of the potential discrepancies identified above, the return on an ETF may correlate imperfectly with the return on the ETF's underlying index.

**There is no assurance that an active trading market will continue for the shares of the relevant ETF or that there will be liquidity in the trading market.** — Although the shares of an ETF are listed for trading on various securities exchanges and a number of similar products have been traded on other securities exchanges for varying periods of time, there is no assurance that an active trading market will continue for the shares of such ETF or that there will be liquidity in the trading market.

**An ETF is subject to management risks.** — Each ETF is subject to management risk, which is the risk that the investment advisor's investment strategy, the implementation of which is subject to a number of constraints, may not produce the intended results. For example, an investment advisor may invest a portion of the ETF's assets in securities or other assets not included in the relevant industry or sector but which the investment advisor believes will help the ETF track the relevant industry or sector.



**Risks relating to non-U.S. securities markets.** — The EFA, the LQD, the PCY and the HYG are Index Components that are subject to risks associated with foreign securities markets. These Index Components track the value of certain international securities. You should be aware that investments in securities linked to the value of foreign securities involve particular risks. The foreign securities markets comprising these Index Components may have less liquidity and may be more volatile than U.S. or other securities markets and market developments may affect foreign markets differently from U.S. or other securities markets. Direct or indirect government intervention to stabilize these foreign securities markets, as well as cross-shareholdings in foreign companies, may affect trading prices and volumes in these markets. Also, there is generally less publicly available information about foreign issuers than about those U.S. companies that are subject to the reporting requirements of the U.S. Securities and Exchange Commission, and foreign issuers are subject to accounting, auditing and financial reporting standards and requirements that differ from those applicable to U.S. reporting companies.

**Currency risks relating to non-U.S. indices.** — The EFA, the LQD, the PCY and the HYG are Index Components that are subject to risks associated with foreign securities markets. These Index Components track the value of indices that include certain international securities. These Index Components may be exposed to fluctuations in exchange rates that might affect their prices. Because the securities included in underlying indices of these Index Components may be traded in currencies other than U.S. dollars, and the notes are denominated in U.S. dollars, the amount payable on the notes at maturity may be exposed to fluctuations in the exchange rate between the U.S. dollar and each of the currencies in which those assets are denominated. These changes in exchange rates may reflect changes in various non-U.S. economies that in turn may affect the payment on the notes at maturity. An investor's net exposure will depend on the extent to which the currencies in which the relevant securities are denominated either strengthen or weaken against the U.S. dollar and the relative weights of those securities. In turn, the payment at maturity may be adversely affected.

**Risks relating to developing markets.** — The PCY is an Index Component that is subject to emerging markets risk. Investments in notes linked directly or indirectly to emerging market securities involve many risks, including, but not limited to: economic, social, political, financial and military conditions in the emerging market; regulation by national, provincial, and local governments; different accounting and disclosure standards; and political uncertainties. Securities of emerging market issuers may be more volatile and may be affected by market developments differently than U.S. issuers. Government intervention to stabilize securities markets may affect prices and volume of trading of the securities of emerging market issuers. Economic, social, political, financial and military factors could, in turn, negatively affect such securities' value. These factors could include changes in the emerging market government's economic and fiscal policies, possible imposition of, or changes in, currency exchange laws or other laws or restrictions applicable to the emerging market issuers or investments in their securities, and the possibility of fluctuations in the rate of exchange between currencies. Moreover, emerging market economies may differ favorably or unfavorably from the U.S. economy in a variety of ways, including growth of gross national product, rate of inflation, capital reinvestment, resources and self-sufficiency.

**Risks relating to the iShares® Russell 2000 ETF.** — The IWM is an Index Component that is subject to small market capitalization risk. The IWM tracks its underlying index, the Russell 2000 Index, which consists of stocks issued by companies with relatively small market capitalizations. These companies often have greater stock price volatility, lower trading volume and less liquidity than large-capitalization companies. As a result, the share price of the IWM may be more volatile than that of a market measure that does not track solely small-capitalization stocks. Stock prices of small-capitalization companies are also generally more vulnerable than those of large-capitalization companies to adverse business and economic developments, and the stocks of small-capitalization companies may be thinly traded, and be less attractive to many investors if they do not pay dividends. In addition, small capitalization companies are often less well-established and less stable financially than large-capitalization companies, and may depend on a small number of key personnel, making them more vulnerable to loss of those individuals. Small capitalization companies may have lower revenues, less diverse product lines, smaller shares of their target markets, fewer financial resources and fewer competitive strengths than large-capitalization companies. These companies may also be more susceptible to adverse developments related to their products or services.

**Risks relating to bond indices.** — The prices of the bonds underlying the HYG, the TLT and the LQD (the “Bond ETFs”) are significantly influenced by the creditworthiness of the issuers of the bonds. The issuers of such bonds may have their credit ratings downgraded or have their credit spreads widen significantly. Following a ratings downgrade or the widening of credit spreads, some or all of the bonds held by the Bond ETFs may suffer significant and rapid price declines. Such events may have material adverse effects on the value of the Bond ETFs and the notes.

**The Bond ETFs are subject to significant risks associated with fixed-income securities, including interest rate-related risks.** — The Bond ETFs attempt to track the performance of indices composed of fixed income securities. Investing in the notes linked indirectly to these ETFs differs significantly from investing directly in bonds to be held to maturity as the values of the Bond ETFs change, at times significantly, during each trading day based upon the current market prices of their underlying bonds. The market prices of these bonds are volatile and significantly influenced by a number of factors, particularly the yields on these bonds as compared to current market interest rates and the actual or perceived credit quality of the issuer of these bonds.

**In general, fixed-income securities are significantly affected by changes in current market interest rates.** — As interest rates rise, the prices of fixed-income securities, including those underlying the Bond ETFs, are likely to decrease. Securities with longer durations tend to be more sensitive to interest rate changes, usually making them more volatile than securities with shorter durations. The eligibility criteria for the securities included in the indices that underlie the Bond ETFs mandate that each security must have a minimum term remaining to maturity for continued eligibility. This means that, at any time, only longer-term securities underlie the Bond ETFs, which thereby increases the risk of price volatility in the underlying securities and, consequently, the volatility in the value of these indices. As a result, rising interest rates may cause the value of the bonds underlying the Bond ETFs, the Bond ETFs and these indices to decline, possibly significantly.

Interest rates are subject to volatility due to a variety of factors, including:

- o sentiment regarding underlying strength in the relevant economies;
- o expectations regarding the level of price inflation;
- o sentiment regarding credit quality in the relevant credit markets;
- o central bank policies regarding interest rates; and
- o the performance of the relevant capital markets.

**Risks relating to high yield securities.** — The HYG is designed to provide a representation of the U.S. dollar high-yield corporate market, and is therefore subject to high-yield securities risk. Securities that are rated below investment grade (commonly known as “junk bonds”) may be more volatile than higher-rated securities of similar maturity. High-yield securities may also be subject to greater levels of credit or default risk than higher-rated securities. The value of high-yield securities can be adversely affected by overall economic conditions, such as an economic downturn or a period of rising interest rates, and high-yield securities may be less liquid and more difficult to sell at an advantageous time or price or to value than higher-rated securities. In particular, high-yield securities are often issued by smaller, less creditworthy companies or by highly leveraged (indebted) firms, which are generally less able than more financially stable firms to make scheduled payments of interest and principal.

#### Additional Risks Relating to the Terms of the Indenture and the Notes

**The notes will be subject to risks, including non-payment in full, under Canadian Bank Resolution Powers.** — Under Canadian bank resolution powers, the Canada Deposit Insurance Corporation (“CDIC”) may, in circumstances where we have ceased, or are about to cease, to be viable, assume temporary control or ownership of us and may be granted broad powers by one or more orders of the Governor in Council (Canada), each of which we refer to as an “Order,” including the power to sell or dispose of all or a part of our assets, and the power to carry out or cause us to carry out a transaction or a series of transactions the purpose of which is to restructure our business. As part of the Canadian bank resolution powers, certain provisions of, and regulations under, the Bank Act (Canada) (the “Bank Act”), the CDIC Act and certain other Canadian federal statutes pertaining to banks, which we refer to collectively as the “bail-in regime,” provide for a bank recapitalization regime for banks designated by the Superintendent of Financial Institutions (Canada) (the “Superintendent”) as domestic systemically important banks, which include us.

If the CDIC were to take action under the Canadian bank resolution powers with respect to us, this could result in a write-off or write-down on the notes. As a result, you should consider the risk that you may lose all of your investment, including the principal amount [plus any accrued interest] *[include if applicable]*, if the CDIC were to take action under the Canadian bank resolution powers, and that any remaining outstanding notes may be of little value at the time of the exercise of these powers and thereafter.

There is no limitation on the type of Order that may be made where it has been determined that we have ceased, or are about to cease, to be viable. As a result, you may be exposed to losses through the use of Canadian bank resolution powers.

**The indenture under which the notes will be issued will provide only limited acceleration and enforcement rights for the notes.** — Our indenture under which the notes will be issued will be amended to provide that acceleration of the notes will only be permitted (a) if we default in the payment of the principal of, or interest on, any of the notes and, in such case, the default continues for a period of 30 business days, or (b) certain bankruptcy, insolvency or reorganization events occur.



### Hypothetical Return on the Notes at Maturity

The following table and examples illustrate the hypothetical return at maturity on a \$1,000 investment in the notes. The “return,” as used in this section is the number, expressed as a percentage, which results from comparing the payment at maturity per \$1,000 in principal amount of the notes to \$1,000. The hypothetical total returns set forth below are based on a hypothetical Initial Level of 1,000 and a hypothetical Upside Leverage Factor of 115% (the midpoint of the Upside Leverage Factor range of 110% to 120%). The hypothetical returns set forth below are for illustrative purposes only and may not be the actual returns applicable to investors in the notes. The numbers appearing in the following table and in the examples below have been rounded for ease of analysis.

Hypothetical Final Level	Hypothetical Percentage Change	Hypothetical Return on the Notes	Payment at Maturity
1,400.00	40.00%	46.00%	\$1,460.00
1,200.00	20.00%	23.00%	\$1,230.00
1,100.00	10.00%	11.50%	\$1,115.00
1,000.00	0.00%	0.00%	\$1,000.00
900.00	-10.00%	0.00%	\$1,000.00
800.00	-20.00%	0.00%	\$1,000.00
700.00	-30.00%	0.00%	\$1,000.00
600.00	-40.00%	0.00%	\$1,000.00
500.00	-50.00%	0.00%	\$1,000.00
400.00	-60.00%	0.00%	\$1,000.00
300.00	-70.00%	0.00%	\$1,000.00

### Hypothetical Examples of Amounts Payable at Maturity

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

**Example 1: The level of the Index decreases from the hypothetical Initial Level of 1,000 to a hypothetical Final Level of 500, representing a Percentage Change of -50%.** Even though the Percentage Change is negative, the investor receives a payment at maturity of \$1,000 per \$1,000 in principal amount of the notes.

**Example 2: The level of the Index increases from the hypothetical Initial Level of 1,000 to a hypothetical Final Level of 1,200, representing a Percentage Change of 20%.** Because the Percentage Change is positive, the investor

receives a payment at maturity of \$1,230 per \$1,000 in principal amount of the notes, calculated as follows:

Principal Amount + (Principal Amount × Percentage Change × Hypothetical Upside Leverage Factor) = Payment at Maturity

$$\$1,000 + (\$1,000 \times 20\% \times 115\%) = \$1,230.00$$

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## **Additional Information About the Notes, the Indenture and Canadian Bank Resolution Powers**

### **Events of Default**

Under the indenture, as it will be amended prior to the issue date of the notes, the term “event of default” means *only* any of the following:

we default in the payment of the principal of [, or interest on,] any of the notes and, in each case, the default continues for a period of 30 business days; or

certain bankruptcy, insolvency or reorganization events occur.

### **Canadian Bank Resolution Powers**

#### ***General***

Under Canadian bank resolution powers, the CDIC may, in circumstances where we have ceased, or are about to cease, to be viable, assume temporary control or ownership of us and may be granted broad powers by one or more Orders, including the power to sell or dispose of all or a part of our assets, and the power to carry out or cause us to carry out a transaction or a series of transactions the purpose of which is to restructure our business. As part of the Canadian bank resolution powers, certain provisions of, and regulations under, the Bank Act, the CDIC Act and certain other Canadian federal statutes pertaining to banks, which we refer to collectively as the “*bail-in regime*,” provide for a bank recapitalization regime for banks designated by the Superintendent as D-SIBs, which include us.

The expressed objectives of the bail-in regime include reducing government and taxpayer exposure in the unlikely event of a failure of a D-SIB, reducing the likelihood of such a failure by increasing market discipline and reinforcing that bank shareholders and creditors are responsible for the D-SIBs’ risks and not taxpayers, and preserving financial stability by empowering the CDIC to quickly restore a failed D-SIB to viability and allow it to remain open and operating, even where the D-SIB has experienced severe losses.



Under the CDIC Act, in circumstances where the Superintendent is of the opinion that we have ceased, or are about to cease, to be viable and viability cannot be restored or preserved by exercise of the Superintendent's powers under the Bank Act, the Superintendent, after providing us with a reasonable opportunity to make representations, is required to provide a report to CDIC. Following receipt of the Superintendent's report, CDIC may request the Minister of Finance for Canada (the "*Minister of Finance*") to recommend that the Governor in Council (*Canada*) make an Order and, if the Minister of Finance is of the opinion that it is in the public interest to do so, the Minister of Finance may recommend that the Governor in Council (*Canada*) make, and on that recommendation, the Governor in Council (*Canada*) may make, one or more of the following Orders:

- vesting in CDIC, our shares and subordinated debt specified in the Order, which we refer to as a "*vesting order*";

- appointing CDIC as receiver in respect of us, which we refer to as a "*receivership order*";

if a receivership order has been made, directing the Minister of Finance to incorporate a federal institution designated in the Order as a bridge institution and specifying the date and time as of which our deposit liabilities are assumed, which we refer to as a "*bridge bank order*"; or

if a vesting order or receivership order has been made, directing CDIC to carry out a conversion, by converting or causing us to convert, in whole or in part – by means of a transaction or series of transactions and in one or more steps – our shares and liabilities that are subject to the bail-in regime into our common shares or common shares of any of our affiliates, which we refer to as a "*conversion order*".

Following an Order, CDIC will assume temporary control or ownership of us and will be granted broad powers under that Order, including the power to sell or dispose of all or a part of our assets, and the power to carry out or cause us to carry out a transaction or a series of transactions the purpose of which is to restructure our business.

Under a bridge bank order, CDIC has the power to transfer certain of our assets and liabilities to a bridge institution. Upon the exercise of that power, any of our assets and liabilities that are not transferred to the bridge institution would remain with us, which would then be wound up. In such a scenario, any liabilities of ours, including any outstanding notes (whether or not such notes are bail-inable notes) that are not assumed by the bridge institution could receive only partial or no repayment in our ensuing wind-up.

The notes offered hereby are not bail-inable notes.

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## **U.S. Federal Tax Information**

We intend to treat the notes as debt instruments subject to the special rules governing contingent payment debt instruments for U.S. federal income tax purposes. Please see the discussion (including the opinion of our counsel Morrison & Foerster LLP) in the product supplement under “Supplemental Tax Considerations—Supplemental U.S. Federal Income Tax Considerations—Where the Term of the Notes Exceeds One Year,” which applies to the notes, except that the following disclosure supplements, and to the extent inconsistent supersedes, the discussion in the product supplement. The discussions below and in the accompanying product supplement do not apply to holders subject to special rules including holders subject to Section 451(b) of the Code.

Under current Internal Revenue Service guidance, withholding on “dividend equivalent” payments (as discussed in the product supplement), if any, will not apply to notes that are issued as of the date of this pricing supplement unless such notes are “delta-one” instruments. Based on our determination that the notes are not delta-one instruments, non-U.S. holders should not generally be subject to withholding on dividend equivalent payments, if any, under the notes.

**Supplemental Plan of Distribution (Conflicts of Interest)**

BMOCM will purchase the notes from us at a purchase price reflecting the commission set forth on the cover page of this pricing supplement. BMOCM has informed us that, as part of its distribution of the notes, it will reoffer the notes to other dealers who will sell them. Each such dealer, or each additional dealer engaged by a dealer to whom BMOCM reoffers the notes, will receive a commission from BMOCM, which will not exceed the commission set forth on the cover page.

Certain dealers who purchase the notes for sale to certain fee-based advisory accounts may forego some or all of their selling concessions, fees or commissions. The public offering price for investors purchasing the notes in these accounts may be less than 100% of the principal amount, as set forth on the cover page of this document. Investors that hold their notes in these accounts may be charged fees by the investment advisor or manager of that account based on the amount of assets held in those accounts, including the notes.

We will deliver the notes on a date that is greater than two business days following the pricing date. Under Rule 15c6-1 of the Securities Exchange Act of 1934, 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 notes more than two business days prior to the issue date will be required to specify alternative settlement arrangements to prevent a failed settlement.

We own, directly or indirectly, all of the outstanding equity securities of BMOCM, the agent for this offering. In accordance with FINRA Rule 5121, BMOCM may not make sales in this offering to any of its discretionary accounts without the prior written approval of the customer.

We reserve the right to withdraw, cancel or modify the offering of the notes and to reject orders in whole or in part. You may cancel any order for the notes prior to its acceptance.

You should not construe the offering of the notes as a recommendation of the merits of acquiring an investment linked to the Underlying Asset or as to the suitability of an investment in the notes.

BMOCM may, but is not obligated to, make a market in the notes. BMOCM will determine any secondary market prices that it is prepared to offer in its sole discretion.

We may use the final pricing supplement relating to the notes in the initial sale of the notes. In addition, BMOCM or another of our affiliates may use the final pricing supplement in market-making transactions in any notes after their initial sale. Unless BMOCM or we inform you otherwise in the confirmation of sale, the final pricing supplement is being used by BMOCM in a market-making transaction.

For a period of approximately three months following issuance of the notes, the price, if any, at which we or our affiliates would be willing to buy the notes from investors, and the value that BMOCM may also publish for the notes through one or more financial information vendors and which could be indicated for the notes on any brokerage account statements, will reflect a temporary upward adjustment from our estimated value of the notes that would otherwise be determined at that time. This temporary upward adjustment represents a portion of (a) the hedging profit that we or our affiliates expect to realize over the term of the notes and (b) the underwriting discount and selling concessions paid in connection with this offering. The amount of this temporary upward adjustment will decline to zero on a straight-line basis over the three-month period.

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

The notes are not intended to be offered, sold or otherwise made available to, and should not be offered, sold or otherwise made available to, any retail investor in the EEA. For these purposes, the expression “offer” includes the communication in any form and by any means of sufficient information on the terms of the offer and the notes to be offered so as to enable an investor to decide to purchase or subscribe the notes, and a “retail investor” means a person who is one (or more) of: (a) a retail client, as defined in point (11) of Article 4(1) of Directive 2014/65/EU (as amended, “MiFID II”); or (b) a customer, within the meaning of Insurance Distribution Directive 2016/97/EU, as amended, where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II; or (c) not a qualified investor as defined in the Prospectus Directive. Consequently, no key information document required by Regulation (EU) No 1286/2014 (as amended, the “PRIIPs Regulation”) for offering or selling the notes or otherwise making them available to retail investors in the EEA has been prepared, and therefore, offering or selling the notes or otherwise making them available to any retail investor in the EEA may be unlawful under the PRIIPs Regulation.

**Additional Information Relating to the Estimated Initial Value of the Notes**

Our estimated initial value of the notes on the date of this preliminary pricing supplement, and that will be set forth on the cover page of the final pricing supplement relating to the notes, equals the sum of the values of the following hypothetical components:

a fixed-income debt component with the same tenor as the notes, valued using our internal funding rate for structured notes; and

one or more derivative transactions relating to the economic terms of the notes.

The internal funding rate used in the determination of the initial estimated value generally represents a discount from the credit spreads for our conventional fixed-rate debt. The value of these derivative transactions are derived from our internal pricing models. These models are based on factors such as the traded market prices of comparable derivative instruments and on other inputs, which include volatility, dividend rates, interest rates and other factors. As a result, the estimated initial value of the notes on the Pricing Date will be determined based on the market conditions at that time.

## **THE INDEX**

### **General Overview**

The Index is a proprietary index that is based on the Modern Portfolio Theory approach to asset allocation. This theory suggests how investors can select a portfolio from available assets to help maximize expected return for a given amount of risk.

On a monthly basis, the Index Calculation Agent constructs an “efficient frontier” from among all hypothetical portfolios of the Index Components described below that comply with the rules of the Index (“Eligible Portfolios”). The “efficient frontier” is a set of hypothetical portfolios that offer the highest expected return for a given level of risk. From the Eligible Portfolios, the Index Calculation Agent selects as the Monthly Unique Portfolio the Eligible Portfolio that would have resulted in the highest return over the previous six months with an annualized volatility of 5% or less for the same period. If no Eligible Portfolio meets these criteria, the limit on volatility is increased by 1% (first to 6%, then to 7% and so on) until a Monthly Unique Portfolio that complies with the rules of the Index is found.

On a daily basis, the Index Calculation Agent monitors the volatility of the Monthly Unique Portfolio over the previous one-month period and adjusts the exposure of the Index to the Monthly Unique Portfolio to target a 5% annualized volatility.

### **Index Composition**

The Index is a notional portfolio that tracks the total return of the underlying investments of a portfolio of 9 Index Components: (a) 8 Securities Components, which are exchange-traded funds, and (b) a Cash Component, the U.S. Federal Funds Rate. The total return reflects changes in the price or level of the Index Components and the reinvestment of dividends or distributions declared and paid on the Securities Components.

The Securities Components represent a diverse range of sectors, asset classes and geographic regions. The Cash Component represents the rate at which U.S. banks may lend reserve balances to other depository institutions on an overnight basis. The Index may change in certain circumstances. See “Special Circumstances” in Appendix C.

Each Index Component is listed on page 6 above, together with its cap (maximum Weight in the Monthly Unique Portfolio), sector, sector cap, asset class and Bloomberg ticker symbol.

Additional information about the Index Components can be found in Appendix B.

## **Calculating the Index and Selecting the Monthly Unique Portfolio**

### **Determining Eligible Portfolios**

The Monthly Unique Portfolio is a hypothetical weighted portfolio of Index Components chosen from among all Eligible Portfolios. The weights applied to each Index Component to determine each Eligible Portfolio (including the Monthly Unique Portfolio) are subject to the following limits:

- each weight must be 0% or a positive integral multiple of 5%;
- the sum of the weights applied to all Index Components must be 100%;
- the weight applied to each Securities Component cannot exceed the percentages set forth in the table on page 6 above;
- the sum of the weights applied to all Securities Components in a sector cannot exceed 75%; and
- the weight applied to the Cash Component cannot exceed 15% (which means that the sum of the Weights applied to all Securities Components must be at least 85%).

### **Monthly Selection and Reweighting of the Monthly Unique Portfolio**

On the first Index Business Day of each month (the “Reweighting Date”), the Index Calculation Agent determines all Eligible Portfolios and calculates their performance for the previous 126 Index Business Days (a period of approximately six calendar months, called the “Reweighting Observation Period”). The annualized volatility of each Eligible Portfolio is calculated over the same Reweighting Observation Period. The Monthly Unique Portfolio is the Eligible Portfolio that would have produced the highest overall return on the Index over the Reweighting Observation Period, subject to volatility not exceeding an annualized level of 5%. If no Eligible Portfolio meets these criteria, the limit on volatility is increased by 1% (first to 7%, then to 8% and so on) until a Monthly Unique Portfolio meeting the criteria is found. The “Weights” are the individual weights applied to each Index Component in the Monthly Unique Portfolio.





For a period of up to two Index Business Days following the determination of a Monthly Unique Portfolio on a Reweighting Date (the “Determination Period”), the Index Calculation Agent may, in its sole discretion, continue to use the Monthly Unique Portfolio from the preceding Reweighting Date for purposes of daily rebalancing of volatility and determining the Index Level; provided, however, that the Index Calculation Agent must adopt the most recently determined Monthly Unique Portfolio for such purposes on or before the end of the Determination Period.

The Index uses volatility to measure a hypothetical portfolio’s level of risk, with greater volatility representing higher risk. The Index’s volatility is based on fluctuations in the Closing Levels of the weighted Securities Components during the Reweighting Observation Period, with recent fluctuations being weighted more heavily than less recent fluctuations. The calculation of volatility is described in more detail in Appendix A.

### **Daily Rebalancing**

On each Index Business Day between Reweighting Dates, the Index follows a strategy that targets 5% volatility by varying the exposure of the Index to the Monthly Unique Portfolio based on its one-month historical volatility. The aggregate weight of the Securities Components in the Monthly Unique Portfolio adjusted for the variable exposure will range from 0% to 100%, increasing when the volatility of the Monthly Unique Portfolio decreases and decreasing when the volatility increases. If the Monthly Unique Portfolio contains Cash, the exposure can be more than 100% (up to 117.65% when the Cash weight in the Monthly Unique Portfolio is at its Cap of 15%).

Rebalancing may result in the overall exposure of the Index to certain Index Components exceeding the limits set out above under “—Determining Eligible Portfolios.” When the 1-month historical volatility is greater than 5%, the Index will reduce the exposure to the Monthly Unique Portfolio by increasing its exposure to Cash. When the 1-month historical volatility is less than 5%, the Index will increase the exposure to the Monthly Unique Portfolio by reducing its exposure to Cash. However, after daily rebalancing, (i) the overall weight of each Index Component (including Cash in the Monthly Unique Portfolio combined with Cash used for rebalancing) will always be at least 0% (i.e., no Index Component will have a negative weighting), and (ii) the sum of the overall weights of all Security Components will always be 100%. In certain circumstances, these constraints could result in an Index volatility below 5%. Rebalancing changes the extent to which the Monthly Unique Portfolio is represented in the Index, but it does not change the Weights of the Index Components in the Monthly Unique Portfolio.

The following diagram illustrates the effect of daily rebalancing:

## **Determining the Index Level**

The Index Level on an Index Business Day is the Index Level on the previous Index Business Day plus the return on the Index since the previous Index Business Day minus the portion of the annual fee of 2.35% (the “Fee”) that has accrued since the previous Index Business Day. The return on the Index since the previous Index Business Day is the sum of the weighted returns on the Index Components since the previous Index Business Day (using the Weights determined on the previous Reweighting Date) after the weighted returns on the Securities Components have been multiplied by the Daily Exposure Factor and the weighted return on the Cash Component (including Cash in the Monthly Unique Portfolio combined with Cash used for daily rebalancing) has been multiplied by one minus the Daily Exposure Factor. The Index Level on each Index Business Day will be reported by the Index Calculation Agent on Bloomberg page BMOICI5.

The Closing Level of each Securities Component, which is used to calculate that Securities Component’s return, reflects the ‘total return’ of that Securities Component, being changes in the price or level of that Securities Component and the reinvestment of any dividends or distributions declared and paid on the Securities Component.

The Index Calculation Agent is bound by the Index Rules in determining the Index Level and, except upon the occurrence of certain events, as described in Appendix C, has no discretion in applying the Index Rules to determine the Weights to be applied to the Index Components on each Reweighting Date or, subject to limited discretion to base the Index Level on the previous month’s Monthly Unique Portfolio for up to two Index Business Days after a Reweighting Date, as set out above under “—Monthly Selection and Reweighting of the Monthly Unique Portfolio,” to change the exposure of the Index to the Monthly Unique Portfolio on each Index Business Day between Reweighting Dates.

**The Index is a “notional” or “hypothetical” portfolio of assets because there is no actual portfolio of assets to which any person is entitled or in which any person has any ownership interest. The Index merely references certain Index Components, the performance of which will be used as a reference point for calculating the Index Level.**

**No assurance can be given that the investment strategy used to construct the Index will be successful or that the Index will outperform any alternative portfolio or strategy that might be constructed from the Index Components. Furthermore, no assurance can be given that the Index will achieve its target volatility. The actual realized volatility of the Index may be greater or less than 5%.**

Further information about the Index, including the rules for calculating the Index Level, can be found in Appendix A.

### **Actual and Hypothetical Index Return**

The Index was launched on November 15, 2017, and accordingly, there is no actual historical data on the Index prior to November 15, 2017. The following graph sets forth the hypothetical daily closing levels of the Index from January 1, 2008 to November 14, 2017 and the actual historical daily closing levels of the Index from November 15, 2017 to August 28, 2018. This hypothetical and historical data on the Index is not indicative of the future performance of the Index or what the value of the notes may be. Any hypothetical or historical upward or downward trend in the level of the Index set forth below is not an indication that the level of the Index is more or less likely to increase or decrease at any time over the term of the notes.

The hypothetical back-tested performance of the Index set forth in the graph was calculated using the same selection criteria and methodology that will be used to calculate the Index. The only exception applies to the monitoring of the historical volatility of PCY, which was formed in October 2007, and accordingly, its six month volatility could not be monitored until April 2008. Prior to April 2008, for purposes of constructing this hypothetical historical information, its volatility was only monitored from its inception to each relevant date of measurement.

Please note that the hypothetical back-tested Index data only reflects the application of that methodology in hindsight, since the Index was not actually calculated and published during the indicated period. The hypothetical back-tested Index data cannot completely account for the impact of financial risk in actual trading. There are numerous factors related to the financial markets in general that cannot be, and have not been, accounted for in the hypothetical back-tested Index data, all of which can affect actual performance. Consequently, you should not rely on that data as a reflection of what the actual Index performance would have been had the Index been in existence or in forecasting future Index performance.

Actual and hypothetical historical returns as at August 28, 2018

## APPENDIX A

### **BMO CORE INVESTOR® 5% TARGET VOLATILITY INDEX RULES**

The Index Rules set out in this Appendix A govern the constitution and maintenance of the Index, the calculation of the Index Level and other decisions and actions related to the maintenance of the Index. In the event of any inconsistency between the Index Rules and any other disclosure in this document, the Index Rules will prevail to the extent of such inconsistency.

The Index is the intellectual property of BMO Capital Markets, and BMO Capital Markets reserves all rights with respect to its ownership of the Index. The Index Level on each Index Business Day will be reported by the Index Calculation Agent on Bloomberg page BMOICI5. The Index may change in certain circumstances. See “Special Circumstances” in Appendix C.

#### Definitions

Terms used in this document and this Appendix A have the meanings ascribed to them below.

“Closing Level” means (i) in respect of a unit of an Index Component that is an ETF, the closing price on any day, in the official currency used by the relevant Exchange, for that unit as announced by the relevant Exchange, provided that, if on or after the Closing Date such Exchange changes the time of day at which such closing price is determined or fails to announce such closing price, the Index Calculation Agent may thereafter deem the Closing Level to be the price of such unit as of the time of day used by such Exchange to determine the closing price prior to such change or failure to announce; and (ii) in respect of an Index Component that is an index, the official closing level or value of the index rounded to two decimal places on a given day as announced by the sponsor of the index, provided that, if on or after the Closing Date the sponsor of the index materially changes the time of day at which the official closing level or value is determined or no longer announces the official closing level or value, the Index Calculation Agent may thereafter deem the Closing Level to be the level or value of the index as of the time of day used by the sponsor of the index to determine the official closing level or value prior to such change or failure to announce; and provided further in each case that if a day on which the Closing Level is to be determined is not an Exchange Business Day with respect to an Index Component or if the Index Calculation Agent cannot obtain relevant reliable information from third party sources, the Closing Level of such Index Component on such day shall be the Closing Level of the Index Component determined in accordance with (i) or (ii), as applicable, as of the immediately preceding Exchange Business Day for such Index Component for which the Index Calculation Agent can obtain relevant reliable information from third party sources. The Closing Level of each Securities Component, which is used to calculate that

Securities Component's return, reflects the 'total return' of that Securities Component from the previous Reweighting Date to the applicable Index Business Day, including changes in the price of that Securities Component and the reinvestment of the dividend or distributions declared on the Securities Component, to and including the applicable Ex-Dividend Date, and calculated based on the applicable "Gross Dividend Amount" per share.

"Daily Exposure Factor" means, in respect of an Index Business Day following the most recent Reweighting Date, an exposure factor between zero and one (inclusive) that, when applied to the Index Components as set out below under "—Calculation of the Index Level," results in the Index having a volatility of no more than 5%.

"Determination Period" means, in respect of a Reweighting Date, the two Index Business Days immediately following the Reweighting Date.

"Eligible Portfolio" means, in respect of a Reweighting Date, a hypothetical weighted portfolio of Index Components that comprises all 9 of the Index Components and that satisfies the Weighting Constraints.

"Ex-Dividend Date" means, with respect to a dividend or other distribution for an ETF that is an Index Component, the first trading day on which transactions in the shares of that ETF trade on the primary exchange without the right to receive that dividend or other distribution.

"Exchange" means (i) in respect of an Index Component, any exchange or trading system from which prices of securities are used from time to time in the computation of the Closing Level for such Index Component, and (ii) in respect of an alternative ETF selected by the Index Calculation Agent ("Alternate ETF"), the primary exchange or trading system on which such Alternate ETF is listed as determined by the Index Calculation Agent; provided in each case that if the Index Calculation Agent, acting in its sole and absolute discretion, determines that such exchange or trading system is no longer the primary exchange for the trading of the Index Component or Alternate ETF, the Index Calculation Agent may designate another exchange or trading system as the Exchange for the Index Component or Alternate ETF subject, in each case, to the Special Circumstances set out in Appendix C.

“Exchange Business Day” means, in respect of an Index Component, any Business Day which is also an Exchange Day on which the Exchange and each Related Exchange are open for trading.

“Exchange Day” means, in respect of an Index Component, any day on which the Exchange and each Related Exchange are scheduled to be open for trading during their respective regular trading sessions.

“Gross Dividend Amount” means, in respect of an Index Component that is an ETF and an Ex-Dividend Date for that ETF, 100% of the amount of any dividend or other distribution per share of the ETF a shareholder of that ETF on that Ex-Dividend Date would no longer have the right to receive due to the occurrence of that Ex-Dividend Date, as determined by the Index Calculation Agent in its discretion as (x) the amount of any cash dividend paid or other cash distribution made and (y) the fair market value of any distribution of shares of capital stock, evidences of indebtedness or other assets or property of that ETF (other than share dividends or distributions). If a portion of that distribution consists of property traded on the Ex-Dividend Date on a U.S. national securities exchange, the fair market value of that portion will equal the closing price of that distributed property on that Ex-Dividend Date.

“Index Business Day” means a day on which each of the New York Stock Exchange and the Nasdaq Stock Market (or their respective successors) is scheduled to open for trading for its regular trading session.

“Index Level” means, in respect of an Index Business Day, the closing level of the Index on that Index Business Day calculated in compliance with the Index Rules and in accordance with the formula set out under “—Calculation of the Index Level” below and rounded to two decimal places.

“Index Rules” means the rules governing the constitution and maintenance of the Index, the calculation of the Index Level and other decisions and actions related to the maintenance of the Index, as set out in this Appendix A.

“Monthly Unique Portfolio” means, in respect of a Reweighting Date, the Eligible Portfolio that would have produced the highest overall return on the Index over the Reweighting Observation Period, subject to Realized Volatility not exceeding an annualized level of 5%; provided that if no Eligible Portfolio has a Realized Volatility equal to or less than 5%, the limit on annualized volatility will be increased in successive increments of 1% until an Eligible Portfolio meeting the criteria is found, which Eligible Portfolio shall be the Monthly Unique Portfolio.

“Performance” means, in respect of an Eligible Portfolio and a Reweighting Date, the sum of the weighted returns of each Index Component (based on the weights assigned to the Index Components in the Eligible Portfolio) over the



Reweighting Observation Period.

“Realized Volatility” means (i) in respect of a Reweighting Date and an Eligible Portfolio, the annualized realized volatility of the Eligible Portfolio over the relevant Reweighting Observation Period determined in accordance with the formula set out under “—Calculation of Realized Volatility Calculation of Realized Volatility of Eligible Portfolios for Monthly Reweighting (Determination of the Monthly Unique Portfolio)” below and, (ii) in respect of an Index Business Day that is not a Reweighting Date and a Monthly Unique Portfolio, the annualized realized volatility of the Securities Components in the Monthly Unique Portfolio over the relevant Rebalancing Observation Period determined in accordance with the formula set out under “—Calculation of Realized Volatility Calculation of Realized Volatility of the Monthly Unique Portfolio for Daily Rebalancing” below.

“Rebalancing Observation Period” means, in respect of an Index Business Day, the period of 21 Index Business Days prior to and excluding such Index Business Day.

“Related Exchange” means any exchange or trading system on which futures or options relating to the applicable Index Component are listed from time to time.

“Reweighting Date” means the first Index Business Day of each calendar month during the term of the notes.

“Reweighting Observation Period” means, in respect of a Reweighting Selection Date, the period of 126 Index Business Days prior to and including the Reweighting Selection Date.

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“Reweighting Selection Date” means, in respect of a Reweighting Date, the last Index Business Day of the month preceding the Reweighting Date; provided that if a Reweighting Selection Date is an Index Business Day on which a Market Disruption Event occurs or is continuing in respect of any Index Component (each such Index Component for these purposes, an “Affected Index Component”), then the relevant Reweighting Selection Date will remain the originally scheduled Reweighting Selection Date and the Closing Level for each Affected Index Component in respect of such Reweighting Selection Date will be deemed to be the Closing Level for the Affected Index Component as of the immediately preceding Index Business Day for the Affected Index Component on which no Market Disruption Event has occurred or is continuing in respect of that Affected Index Component.

“Target Volatility” means 5%, subject to adjustment in accordance with the Index Rules.

“Weight” means, in respect of a Reweighting Date, the weight assigned to each Index Component on the Reweighting Selection Date in determining the Monthly Unique Portfolio, as determined by the Index Calculation Agent in accordance with the Index Rules.

“Weighting Constraints” means, in respect of an Eligible Portfolio, the following limits on the weights applied to the Index Components in determining the Eligible Portfolio:

- all Weights must be 0% or a positive integral multiple of 5%;
- the sum of the Weights applied to all Index Components must be 100%;
- the sum of the Weights applied to all Securities Components in one sector cannot exceed 75%;

the Weight applied to each Securities Component cannot exceed the percentage set forth in the table beginning on page 6 above; and

- the Weight applied to the Cash Component cannot exceed 15%.

## **Index Rules**

### **Monthly Reweighting**

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For each Reweighting Date, subject to adjustment if a Market Disruption Event has occurred and is continuing and subject as further described below, the Index Calculation Agent will:

1. determine the Reweighting Observation Period;
2. determine the Closing Level of each Index Component on each Index Business Day during the Reweighting Observation Period;
3. identify all Eligible Portfolios;
4. calculate the Performance of each Eligible Portfolio;
5. calculate the Realized Volatility of each Eligible Portfolio; and
6. identify the Monthly Unique Portfolio, including the Weights assigned to each Index Component.

In determining the Monthly Unique Portfolio:

If (a) the Closing Level of any Index Component as of any date which is published or otherwise made available in respect of the relevant Index Component is subsequently corrected and such correction is published or otherwise made available in respect of such Index Component; or (b) the Index Calculation Agent identifies an error or omission in any of its calculations or determinations in respect of the Index, then the Index Calculation Agent may, if practicable and if the Index Calculation Agent determines acting in good faith that such correction, error or omission (as the case may be) is material, adjust or correct the relevant calculation or determination of the Index Level as of any Index Business Day to take into account such correction.

Realized Volatility will be determined using the formula below.

For some or all of the Determination Period following the determination of a Monthly Unique Portfolio on a Reweighting Date, the Index Calculation Agent may, in its sole discretion, continue to use the Monthly Unique Portfolio from the preceding Reweighting Date for purposes of daily rebalancing of volatility and determining the Index Level; provided, however, that the Index Calculation Agent must adopt the most recently determined Monthly Unique Portfolio for such purposes on or before the end of the Determination Period.

If a Reweighting Selection Date or the Valuation Date is an Index Business Day on which a Market Disruption Event occurs or is continuing in respect of any Index Component, then the relevant Reweighting Date will be determined as set out in Appendix C.

If any Index Business Day, other than a Reweighting Selection Date or the Valuation Date, is an Index Business Day on which a Market Disruption Event occurs or is continuing in respect of any Index Component (each such Index Component for these purposes, an “Affected Index Component”), the Index Calculation Agent may either: (i) calculate its good faith estimate of the Index Level for such Index Business Day, using its good faith estimate of the Closing Level of the Affected Index Component(s) (any such estimated level may be subject to correction on the first succeeding Index Business Day that on which a Market Disruption Event is not occurring or continuing in respect of such Affected Index Component and on the first succeeding Index Business Day on which a Market Disruption Event is not occurring or continuing in respect of any Index Component); or (ii) suspend the calculation and publication of the Index Level until the first succeeding Index Business Day on which a Market Disruption Event is not occurring or continuing in respect of any Index Component.

### **Daily Rebalancing**

The exposure of the Index to the Monthly Unique Portfolio is rebalanced on each Index Business Day, including Reweighting Dates, to account for daily changes in the one-month historical volatility of the Monthly Unique Portfolio during the Rebalancing Observation Period in respect of such Index Business Day. If such volatility is greater or less than 5%, the Index will decrease or increase its exposure to the Monthly Unique Portfolio (and increase or decrease its exposure to Cash) in accordance with the Index Level formula set out below and subject to the limits set out below.

For each Index Business Day that is not a Reweighting Date, subject to adjustment if a Market Disruption Event has occurred and is continuing and subject as further described below, the Index Calculation Agent will:

1. determine the Daily Exposure Factor for such Index Business Day; and
2. determine the Index Level on such Index Business Day.

In determining the Daily Exposure Factor on any such Index Business Day:

the Daily Exposure Factor will be between zero and one (inclusive);

application of the foregoing restraint together with the Weighting Constraints could result in Realized Volatility of the Index being less than 5% on an annualized basis;

rebalancing changes the extent to which the Monthly Unique Portfolio (and therefore the Securities Components and the Cash Component) is represented in the Index, but does not change the Weights of the Securities Components; and

daily rebalancing will be based on the old Monthly Unique Portfolio until the Index Calculation Agent adopts the new Monthly Unique Portfolio, as described above under “Monthly Reweighting.”

### **Determining the Index Level**

Unless a Market Disruption Event has occurred and is continuing, the Index Calculation Agent will determine the Index Level on each Index Business Day. The Index Business Level on any day that is not an Index Business Day will be the Index Level on the immediately preceding Index Business Day.

On November 15, 2017 (the “Start Date”), the Index comprised notional holdings in the Index Components with Weights determined as of the Reweighting Selection Date (the last Index Business Day of the month preceding the Reweighting Date), and effected as of the relevant Reweighting Date (the “Initial Reweighting Date”), in accordance with the procedure described in “Monthly Reweighting” above. References to “Reweighting Date” or “Reweighting Selection Date,” respectively, include references to the Initial Reweighting Date or Start Date (the Initial Reweighting Selection Date), respectively. The Index Level for the Index was set at 100 on the Start Date.

We provide below details of the calculation of the Index Level on each Index Business Day under the heading “—Calculation of the Index Level.”

### Calculation of Realized Volatility

Realized Volatility is calculated for every Securities Component for monthly reweighting; and for the portfolio of Securities Components for daily rebalancing, all as described in additional detail above. Both calculations are based on the exponential weighted moving average (“EWMA”) approach with an EWMA smoothing factor  $\lambda = 0.94$ . Calculation of the Realized Volatility for each Securities Component proceeds as follows.

### Calculation of Realized Volatility of Eligible Portfolios for Monthly Reweighting (Determination of the Monthly Unique Portfolio)

First, the EWMA of 126 daily returns (from 127 consecutive business days) is calculated as:

Then, the Realized Volatility is calculated as:

Here:

- $\hat{\sigma}_t(i)$  is the EWMA estimate of the Realized Average of the  $i$ th Securities Component returns
- $\hat{\sigma}_t(i)$  is the EWMA estimate of the Realized Volatility of the  $i$ th Securities Component returns

$\lambda$  is the EWMA smoothing parameter (0.94)

$t$  and  $t - 1$  are the Index Business Day and the Index Business Day immediately preceding day  $t$

$St(i)$  is the “total return” Closing Level of the  $i$ th Securities Component on day  $t$

$S_{t-1}(i)$  is the “total return” Closing Level of the  $i$ th Securities Component on day  $t - 1$

### **Calculation of Realized Volatility of the Monthly Unique Portfolio for Daily Rebalancing**

The calculation of the Realized Volatility of the Monthly Unique Portfolio for purposes of daily rebalancing is similar to the calculation of the Realized Volatility of Eligible Portfolios for Monthly Reweighting; however, the return on the Monthly Unique Portfolio is used instead of the Securities Component returns. First, for each of 22 Index Business Days’ portfolio value is constructed as:

Then EWMA estimates of the portfolio return realized average and realized volatility are calculated as:

Where:

$t$  and  $t - 1$  are the Index Business Day and the Index Business Day immediately preceding day  $t$

$P_t$  is the portfolio value on Index Business Day  $t$

$m$  is the EWMA of the Realized Average of the daily portfolio returns

$s$  is the EWMA estimate of the Realized Volatility of the daily portfolio returns

$l$  is the EWMA smoothing parameter (0.94)

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$w(i)$  is the Weight of the  $i$ th Securities Component after the latest Reweighting Date

### **Calculation of the Index Level**

On each Index Business Day from but excluding the immediately preceding Reweighting Date to and including the next following Reweighting Date, the “Index Level” for the Index will be determined as follows:

Where:

$t$  is the Index Business Day on which the Index Level is being determined

$t-1$  is the Index Business Day immediately preceding Index Business Day  $t$

$I_t$  is the Index Level on Index Business Day  $t$

$I_{t-1}$  is the Index Level on the Index Business Day immediately preceding Index Business Day  $t$

$Fee$  is the annual fee (2.35%)

$dt - dt-1$  is the number of days between Index Business Day  $t$  and the previous Index Business Day  $t - 1$

$w(i)$  is the Weight of the  $i$ th Securities Component after the latest Reweighting Date

$St(i)$  is the “total return” Closing Level of the  $i$ th Securities Component on day  $t$

$S0(i)$  is the “total return” Closing Level of the  $i$ th Securities Component on the latest Reweighting Date

$At-1$  is the Daily Exposure Factor on the previous Index Business Day  $t - 1$

$rt-1ON$  is the Fed Funds Rate for Index Business Day  $t - 1$

$rett(i) = (St(i) - S0(i)) / S0(i)$  is the  $i$ th Securities Component return from the latest Reweighting Date to Index Business Day  $t$

The Index Level on any Index Business Day given by this formula reflects the following calculation steps:

1. The “Index Fee” on such Index Business Day will be 2.35% multiplied by the number of calendar days from but excluding the immediately preceding Index Business Day to and including such Index Business Day and divided by 365, with the result being multiplied by the Index Level on the previous Index Business Day;
2. The “Index Level Net of the Fee” on the previous Index Business Day will be the Index Level on the previous Index Business Day less the Index Fee on such Index Business Day;
3. The “Securities Component Return” for each Securities Component on each Index Business Day will be the Closing Level of the Securities Component on such Index Business Day less the Closing Level of the Securities Component on the immediately preceding Reweighting Date, divided by the Closing Level of the Securities Component on the immediately preceding Reweighting Date;
4. The “Relative Weighted Securities Component” for each Securities Component on such Index Business Day will be such Securities Component’s Securities Component Return on such Index Business Day plus one with such sum being multiplied by the Weight assigned to such Securities Component on the immediately preceding Reweighting Date;

5. The “Gross Relative Securities Component” on such Index Business Day will be the sum of the Relative Weighted Securities Components for all Securities Components on such Index Business Day;

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6. The “Gross Securities Component Quotient” on such Index Business Day will be the ratio of the Gross Relative Securities Component on such Index Business Day to the Gross Relative Securities Component on the previous Index Business Day multiplied by the Daily Exposure Factor determined as of the previous Index Business Day;

7. The “Gross Cash Component Return” on such Index Business Day will be the published Canadian Overnight Repo Rate on the previous Index Business Day multiplied by the number of calendar days from but excluding the immediately preceding Business Date to and including such Index Business Day with the result being divided by 365;

8. The “Gross Cash Component Quotient” on such Index Business Day will be (one plus the Gross Cash Component Return) multiplied by (one minus the Daily Exposure Factor); and

9. The "Index Level" on such Index Business Day will be the Index Level Net of the Fee on such Index Business Day multiplied by the sum of (a) the Gross Securities Component Quotient and (b) the Gross Cash Component Quotient on such Index Business Day, rounded to two decimal places.

#### **The Index Calculation Agent; Amendment of Index Rules; Limitation of Liability**

BMOCM or any affiliate or subsidiary designated by it will act as calculation agent for the Index (in such capacity, the “Index Calculation Agent”). The Index Calculation Agent’s determinations in respect of the Index and interpretation of the Index Rules will be final. The Index Rules may be supplemented, amended or restated from time to time at the sole discretion of the Index Calculation Agent.

The Index Calculation Agent will act in good faith and in a commercially reasonable manner with respect to the performance of its obligations and the exercise of its discretion pursuant to the Index Rules.

While the Index Rules are intended to be comprehensive, ambiguities may arise. In such circumstances, the Index Calculation Agent will resolve such ambiguities in a reasonable manner and, if necessary, amend the Index Rules to reflect such resolution.

Neither the Index Calculation Agent nor any of its affiliates or any of their respective directors, officers, employees, representatives, delegates or agents (each a “Related Person”) will have any responsibility to any person (whether as a result of negligence or otherwise) for any determinations made or anything done (or omitted to be determined or done) in respect of the Index and any use to which any person may put the Index or the Index Levels. All determinations of the Index Calculation Agent in respect of the Index shall be final, conclusive and binding and no person shall be entitled to make any claim against any of the Related Persons in respect thereof. Once a determination or calculation is made or action taken by the Index Calculation Agent in respect of the Monthly Unique Portfolio, neither the Index Calculation Agent nor any other Related Person shall be under any obligation to revise any determination or calculation made or action taken for any reason.

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## **APPENDIX B INDEX COMPONENTS**

All information in this document relating to each Index Component, including its composition and historical performance, is derived from publicly available sources and is presented in summary form. As such, none of Bank of Montreal, BMOCM, the Calculation Agent, the Index Calculation Agent or any broker or agent selling the notes (i) assumes any responsibility for the accuracy or completeness of such information; (ii) has conducted any independent investigation as to the accuracy of that information; (iii) has any duty or obligation to update such information up to or after the Pricing Date; or (iv) assumes any responsibility for the calculation or other maintenance of or any adjustments to any Closing Level. The information set out below is historical and as such is subject to change and is not a guarantee of the future composition of or weightings of an Index Component. None of the managers, sponsors or investment advisors of an Index Component that is an ETF (i) has any obligation or liability in connection with the administration, marketing or trading of the notes; (ii) is responsible for or has participated in the determination of the structuring, timing, pricing or number of notes to be issued; or (iii) has any responsibility or liability with respect to the accuracy, reliability or completeness of any of the information contained in this document.

Information provided to or filed with the SEC under the Securities Exchange Act of 1934 and the Investment Company Act of 1940 relating to each Index Component that is an ETF may be obtained through the SEC's website at <http://www.sec.gov>. We encourage you to read those documents for additional information about those Index Components.

The historical performance information below for each ETF was obtained from Bloomberg, without any independent investigation. The indicated prices refer only to the prices of the relevant ETF shares, and not any dividends paid on those shares.

### **Description, Composition and Historical Performance of Index Components**

#### **SPDR® S&P 500® ETF**

The shares of the SPDR® S&P 500® ETF trade on the NYSE Arca under the symbol "SPY." The SPY's investment adviser is State Street Global Advisors ("SSGA").

The SPY seeks to provide investment results that correspond generally to the price and yield performance, before fees and expenses, of the S&P 500® Index (the "SPX Index"). To maintain the correspondence between the composition and weightings of stocks held by the SPY and component stocks of the SPX Index, the SPY adjusts its holdings from time

to time to conform to periodic changes in the identity and/or relative weightings of the index securities.

The SPY utilizes a “passive” or “indexing” investment approach in attempting to track the performance of the SPX Index. The SPY seeks to invest in substantially all of the securities that comprise the SPX Index. The SPY typically earns income from dividends from securities that it holds. These amounts, net of expenses and taxes (if applicable), are passed along to the SPY’s shareholders as “ordinary income.” In addition, the SPY realizes capital gains or losses whenever it sells securities. Net long-term capital gains are distributed to shareholders as “capital gain distributions.”

The S&P 500<sup>®</sup> Index is intended to provide an indication of the pattern of common stock price movement in the large capitalization segment of the U.S. equity market. The calculation of the level of the S&P 500<sup>®</sup> Index is based on the relative value of the aggregate market value of the common stocks of 500 companies as of a particular time compared to the aggregate average market value of the common stocks of 500 similar companies during the base period of the years 1941 through 1943.

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**Historical Performance of the SPDR® S&P 500® ETF**

Closing prices of the SPDR® S&P 500® ETF can be found on Bloomberg under the symbol “SPY.” The following table illustrates the performance of the SPDR® S&P 500® ETF, using daily closing prices of the SPDR® S&P 500® ETF obtained from Bloomberg Financial Services. **Past SPDR® S&P 500® ETF values are not necessarily indicative of future SPDR® S&P 500® ETF values.**

**Closing Prices of the SPDR® S&P 500® ETF**

	<b>High (\$)</b>	<b>Low (\$)</b>
2008 First Quarter	144.94	127.90
Second Quarter	143.08	127.69
Third Quarter	130.70	111.38
Fourth Quarter	116.00	75.95
2009 First Quarter	93.44	68.11
Second Quarter	95.09	81.00
Third Quarter	107.33	87.95
Fourth Quarter	112.67	102.54
2010 First Quarter	117.40	105.87
Second Quarter	121.79	103.22
Third Quarter	114.79	102.20
Fourth Quarter	125.92	113.75
2011 First Quarter	134.57	126.21
Second Quarter	136.54	126.81
Third Quarter	135.46	112.26
Fourth Quarter	128.68	109.93
2012 First Quarter	141.61	127.49
Second Quarter	141.79	128.10
Third Quarter	147.24	133.51
Fourth Quarter	146.27	135.70
2013 First Quarter	156.73	145.53
Second Quarter	167.11	154.14
Third Quarter	173.14	161.16
Fourth Quarter	184.67	165.48
2014 First Quarter	188.26	174.15
Second Quarter	196.48	181.48
Third Quarter	201.82	190.99
Fourth Quarter	208.72	186.27
2015 First Quarter	211.99	198.97
Second Quarter	213.50	205.42
Third Quarter	212.59	187.27



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Fourth Quarter	211.00	192.13
2016 First Quarter	206.10	183.03
Second Quarter	212.39	199.53
Third Quarter	219.09	208.39
Fourth Quarter	227.76	208.55
2017 First Quarter	239.78	225.24
Second Quarter	244.66	232.51

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Third Quarter	251.23	240.55
Fourth Quarter	268.20	252.32
2018 First Quarter	286.58	257.63
Second Quarter	278.92	257.47
Third Quarter (as of August 30, 2018)	291.48	270.90

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**iShares® Russell 2000 ETF**

iShares® Russell 2000 ETF is listed on the NYSE Arca under the ticker symbol “IWM.” The IWM seeks investment results that correspond generally to the price and yield performance, before fees and expenses, of the Russell 2000® Index. The IWM typically earns income dividends from securities included in the Russell 2000® Index. iShares® is a registered investment company that consists of numerous separate investment portfolios, including the IWM. The IWM is maintained and managed by iShares® and advised by BlackRock Fund Advisors (“BFA”). These amounts, net of expenses and taxes (if applicable), are passed along to the IWM’s shareholders as “ordinary income.” In addition, the IWM realizes capital gains or losses whenever it sells securities. Net long-term capital gains are distributed to shareholders as “capital gain distributions.”

The Russell 2000® Index (“RTY”) was developed by Russell Investments (“Russell”) before FTSE International Limited and Russell combined in 2015 to create FTSE Russell. The RTY is designed to track the performance of the small capitalization segment of the U.S. equity market. As a subset of the Russell 3000® Index, the RTY consists of the smallest 2,000 companies included in the Russell 3000® Index. The Russell 3000® Index measures the performance of the largest 3,000 U.S. companies, representing approximately 98% of the investable U.S. equity market. The RTY is determined, comprised, and calculated by FTSE Russell.

**Historical Performance of the iShares® Russell 2000 ETF**

Closing prices of the iShares® Russell 2000 ETF can be found on Bloomberg under the symbol “IWM.” The following table illustrates the performance of the iShares® Russell 2000 ETF, using daily closing prices of the iShares® Russell 2000 ETF obtained from Bloomberg Financial Services. **Past iShares® Russell 2000 ETF values are not necessarily indicative of future iShares® Russell 2000 ETF values.**

**Closing Prices of the iShares® Russell 2000 ETF**

	<b>High (\$)</b>	<b>Low (\$)</b>
2008 First Quarter	75.12	64.30
Second Quarter	76.17	68.47
Third Quarter	75.20	65.50
Fourth Quarter	67.02	38.58
2009 First Quarter	51.27	34.36
Second Quarter	53.19	42.82
Third Quarter	62.02	47.87
Fourth Quarter	63.36	56.22

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2010	First Quarter	69.25	58.68
	Second Quarter	74.14	61.08
	Third Quarter	67.67	59.04
	Fourth Quarter	79.22	66.94
2011	First Quarter	84.17	77.18
	Second Quarter	86.37	77.77
	Third Quarter	85.65	64.25
	Fourth Quarter	76.45	60.97
2012	First Quarter	84.41	74.56
	Second Quarter	83.79	73.64
	Third Quarter	86.40	76.68
	Fourth Quarter	84.69	76.88
2013	First Quarter	94.80	86.65
	Second Quarter	99.51	89.58
	Third Quarter	107.10	98.08
	Fourth Quarter	115.31	103.67

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2014	First Quarter	119.83	108.64
	Second Quarter	118.81	108.88
	Third Quarter	120.02	109.35
	Fourth Quarter	121.08	104.30
2015	First Quarter	126.03	114.69
	Second Quarter	129.01	120.85
	Third Quarter	126.31	107.53
	Fourth Quarter	119.85	109.01
2016	First Quarter	110.62	94.80
	Second Quarter	118.43	108.69
	Third Quarter	125.70	113.69
	Fourth Quarter	138.31	115.00
2017	First Quarter	140.36	133.75
	Second Quarter	142.10	133.72
	Third Quarter	148.18	134.83
	Fourth Quarter	154.30	145.63
2018	First Quarter	159.96	145.44
	Second Quarter	169.97	148.13
	Third Quarter (as of August 30, 2018)	172.50	164.20

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**iShares® Select Dividend ETF**

The shares of the iShares® Select Dividend ETF trade on the Nasdaq under the symbol “DVY.” The DVY (the “Fund”) seeks to track the investment results of an index composed of relatively high dividend paying U.S. equities. The DVY is maintained and managed by iShares® and advised by BFA. iShares® is a registered investment company that consists of numerous separate investment portfolios, including the DVY. The DVY typically earns income from dividends from securities included in its underlying index. These amounts, net of expenses and taxes (if applicable), are passed along to the DVY’s shareholders as “ordinary income.” In addition, the DVY realizes capital gains or losses whenever it sells securities. Net long-term capital gains are distributed to shareholders as “capital gain distributions.”

The DVY seeks to track the investment results of the Dow Jones U.S. Select Dividend Index, which measures the performance of a selected group of equity securities issued by companies that have provided relatively high dividend yields over time. Dividend yield is calculated using a stock’s unadjusted indicated annual dividend (not including any special dividends) divided by its unadjusted price. This index is comprised of 100 of the highest dividend-yielding securities (excluding real estate investment trusts (“REITs”)) in the Dow Jones U.S. Index, a broad-based index representative of the total market for U.S. equity securities. To be included in this index, each security must satisfy certain criteria relating to, among other things, its historical dividend rate, trading value, earnings-per-share and market capitalization. This index is reviewed and rebalanced annually.

**Historical Performance of the iShares® Select Dividend ETF**

Closing prices of the iShares® Select Dividend ETF can be found on Bloomberg under the symbol “DVY.” The following table illustrates the performance of the iShares® Select Dividend ETF, using daily closing prices of the iShares® Select Dividend ETF obtained from Bloomberg Financial Services. **Past iShares® Select Dividend ETF values are not necessarily indicative of future iShares® Select Dividend ETF values.**

**Closing Prices of the iShares® Select Dividend ETF**

	<b>High (\$)</b>	<b>Low (\$)</b>
2008 First Quarter	65.79	56.74
Second Quarter	61.23	49.23
Third Quarter	61.00	44.94
Fourth Quarter	55.55	35.88
2009 First Quarter	42.03	26.27
Second Quarter	37.06	32.03
Third Quarter	42.24	34.09

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	Fourth Quarter	44.66	40.12
2010	First Quarter	46.81	42.02
	Second Quarter	48.29	42.41
	Third Quarter	47.02	42.09
	Fourth Quarter	50.22	46.78
2011	First Quarter	52.17	49.69
	Second Quarter	54.38	51.29
	Third Quarter	54.01	45.60
	Fourth Quarter	54.16	47.03
2012	First Quarter	56.58	53.68
	Second Quarter	56.91	53.73
	Third Quarter	58.69	56.03
	Fourth Quarter	59.03	54.92
2013	First Quarter	63.40	58.22
	Second Quarter	67.00	62.81

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	Third Quarter	68.53	64.15
	Fourth Quarter	71.35	65.49
2014	First Quarter	73.31	67.69
	Second Quarter	77.44	72.25
	Third Quarter	76.99	72.79
	Fourth Quarter	81.41	72.13
2015	First Quarter	80.95	76.46
	Second Quarter	79.35	75.15
	Third Quarter	77.52	70.47
	Fourth Quarter	77.74	72.29
2016	First Quarter	81.85	70.77
	Second Quarter	85.28	80.27
	Third Quarter	87.37	84.32
	Fourth Quarter	90.35	81.79
2017	First Quarter	93.28	88.26
	Second Quarter	94.50	90.06
	Third Quarter	94.34	90.84
	Fourth Quarter	99.59	93.99
2018	First Quarter	102.29	92.52
	Second Quarter	99.00	93.45
	Third Quarter (as of August 30, 2018)	101.89	97.69

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**iShares® MSCI EAFE ETF**

The shares of the iShares® MSCI EAFE ETF trade on the NYSE Arca under the symbol “EFA.” The EFA seeks to track the investment results of large- and mid-capitalization developed market equities, excluding the U.S. and Canada, as measured by the MSCI EAFE® Index (the “MSCI EAFE Index”).

The EFA is maintained and managed by iShares® and advised by BFA. iShares® is a registered investment company that consists of numerous separate investment portfolios, including the EFA. The EFA typically earns income from dividends from securities included in the EAFE Index. These amounts, net of expenses and taxes (if applicable), are passed along to the EFA’s shareholders as “ordinary income.” In addition, the EFA realizes capital gains or losses whenever it sells securities. Net long-term capital gains are distributed to shareholders as “capital gain distributions.”

The EAFE Index is a stock index calculated, published and disseminated daily by MSCI Inc. (“MSCI”). The EAFE Index is a free float-adjusted market capitalization index with a base date of December 31, 1969 and an initial value of 100. The EAFE Index is calculated daily in U.S. dollars and published in real time every 60 seconds during market trading hours. As of the date of this document, the EAFE Index consists of the following 21 developed countries: Australia, Austria, Belgium, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, The Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, and the United Kingdom. The EAFE Index is comprised of companies in both the Large Cap Index and Mid Cap Index. The EAFE 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.

**Historical Performance of the iShares® MSCI EAFE ETF**

Closing prices of the iShares® MSCI EAFE ETF can be found on Bloomberg under the symbol “EFA.” The following table illustrates the performance of the iShares® MSCI EAFE ETF, using daily closing prices of the iShares® MSCI EAFE ETF obtained from Bloomberg Financial Services. **Past iShares® MSCI EAFE ETF values are not necessarily indicative of future iShares® MSCI EAFE ETF values.**

**Closing Prices of the iShares® MSCI EAFE ETF**

	<b>High (\$)</b>	<b>Low (\$)</b>
2008 First Quarter	78.35	68.31
Second Quarter	78.52	68.10

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	Third Quarter	68.04	53.08
	Fourth Quarter	55.88	35.71
2009	First Quarter	45.44	31.69
	Second Quarter	49.04	38.57
	Third Quarter	55.81	43.91
	Fourth Quarter	57.28	52.66
2010	First Quarter	57.96	50.45
	Second Quarter	58.03	46.29
	Third Quarter	55.42	47.09
	Fourth Quarter	59.46	54.25
2011	First Quarter	61.91	55.31
	Second Quarter	63.87	57.10
	Third Quarter	60.80	46.66
	Fourth Quarter	55.57	46.45
2012	First Quarter	55.80	49.15
	Second Quarter	55.51	46.55
	Third Quarter	55.15	47.62
	Fourth Quarter	56.88	51.96

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2013	First Quarter	59.89	56.90
	Second Quarter	63.53	57.03
	Third Quarter	65.05	57.55
	Fourth Quarter	67.06	62.71
2014	First Quarter	68.03	62.31
	Second Quarter	70.67	66.26
	Third Quarter	69.25	64.12
	Fourth Quarter	64.51	59.53
2015	First Quarter	65.99	58.48
	Second Quarter	68.42	63.49
	Third Quarter	65.46	56.25
	Fourth Quarter	62.06	57.50
2016	First Quarter	57.80	51.38
	Second Quarter	59.87	52.64
	Third Quarter	59.86	54.44
	Fourth Quarter	59.20	56.20
2017	First Quarter	62.60	58.09
	Second Quarter	67.22	61.44
	Third Quarter	68.48	64.83
	Fourth Quarter	70.80	68.42
2018	First Quarter	75.25	67.94
	Second Quarter	71.90	66.35
	Third Quarter (as of August 30, 2018)	68.98	65.53

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**iShares® iBoxx \$ Investment Grade Corporate Bond ETF**

iShares® iBoxx \$ Investment Grade Corporate Bond ETF trades on the NYSE Arca, Inc. under the ticker symbol “LQD.” The LQD is primarily invested in the banking, consumer services and telecommunications sectors. The LQD generally invests at least 90% of its assets in securities that comprise the underlying index and at least 95% of its assets in investment-grade corporate bonds. The LQD is passively managed and employs a representative sampling strategy.

The LQD’s investment adviser is BFA. The LQD is issued by the iShare® Trust, a registered investment company. The LQD seeks to provide investment results that correspond generally to the price and yield performance, before fees and expenses, of its underlying index, the U.S. dollar-denominated liquid investment grade corporate bond market, as defined by the iBoxx® \$ Liquid Investment Grade Index (the “IG Index”). Bonds issued by issuers organized in a variety of developed countries are eligible for inclusion in the IG Index. The IG index is published by Markit Indices Limited, the index sponsor. The IG Index is designed to reflect the performance of the U.S. dollar-denominated investment grade corporate debt. The IG Index is market-value weighted with an issuer cap of 3%.

The IG Index consists of investment grade U.S. dollar-denominated bonds issued by corporate issuers from developed countries and rated by at least one of three rating services: Fitch Ratings, Moody’s Investors Service or Standard & Poor’s Rating Services. The IG Index composition is rebalanced once a month, after the close of business on the last business day of the rebalancing month. The new IG Index composition becomes effective on the first business day of the next month.

**Historical Performance of the iShares® iBoxx \$ Investment Grade Corporate Bond ETF**

Closing prices of the iShares® iBoxx \$ Investment Grade Corporate Bond ETF can be found on Bloomberg under the symbol “LQD.” The following table illustrates the performance of the iShare®iBoxx \$ Investment Grade Corporate Bond ETF, using daily closing prices of the iShares® iBoxx \$ Investment Grade Corporate Bond ETF obtained from Bloomberg Financial Services. **Past iShares® iBoxx \$ Investment Grade Corporate Bond ETF values are not necessarily indicative of future iShares® iBoxx \$ Investment Grade Corporate Bond ETF values.**

**Closing Prices of the iShares® iBoxx \$ Investment Grade Corporate Bond ETF**

	<b>High (\$)</b>	<b>Low (\$)</b>
2008 First Quarter	107.57	102.90

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	Second Quarter	106.15	101.00
	Third Quarter	101.77	81.80
	Fourth Quarter	101.65	83.80
2009	First Quarter	102.60	90.54
	Second Quarter	100.42	92.86
	Third Quarter	107.19	99.55
	Fourth Quarter	107.25	103.94
2010	First Quarter	106.79	103.47
	Second Quarter	108.46	104.56
	Third Quarter	113.09	107.83
	Fourth Quarter	113.25	106.77
2011	First Quarter	109.45	106.82
	Second Quarter	111.57	108.02
	Third Quarter	114.00	109.72
	Fourth Quarter	115.58	110.19
2012	First Quarter	117.70	113.27
	Second Quarter	117.66	114.43
	Third Quarter	121.77	117.82

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Fourth Quarter	123.13	120.44
2013 First Quarter	121.27	118.74
Second Quarter	122.34	111.48
Third Quarter	115.45	110.91
Fourth Quarter	115.59	113.01
2014 First Quarter	117.39	114.25
Second Quarter	119.92	116.15
Third Quarter	120.58	117.32
Fourth Quarter	120.30	117.70
2015 First Quarter	123.89	119.15
Second Quarter	122.22	114.94
Third Quarter	116.56	114.74
Fourth Quarter	117.59	113.82
2016 First Quarter	118.82	112.92
Second Quarter	122.73	118.56
Third Quarter	124.40	121.39
Fourth Quarter	122.51	115.60
2017 First Quarter	118.78	115.62
Second Quarter	121.40	117.78
Third Quarter	121.61	119.72
Fourth Quarter	121.79	119.89
2018 First Quarter	120.97	115.72
Second Quarter	117.24	113.81
Third Quarter (as of August 30, 2018)	116.27	114.24

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### **PowerShares® Emerging Market Sovereign Debt ETF**

The Markets Sovereign Debt ETF (“PCY”) is based on the DB Emerging Market USD Liquid Balanced Index, which tracks the potential returns of a theoretical portfolio of liquid emerging markets U.S. dollar-denominated government bonds issued by more than 20 emerging-market countries.

PCY will generally invest at least 80% of its total assets in U.S. dollar-denominated government bonds from emerging market countries that comprise the underlying index. The countries in the underlying index are selected annually using a proprietary index methodology, and the membership list is rebalanced quarterly. The underlying index measures potential returns of a theoretical portfolio of liquid emerging market U.S. dollar-denominated government bonds. Strictly in accordance with its guidelines and mandated procedures, the index sponsor selects one to three securities from each of the emerging market countries set forth below that:

are denominated in U.S. dollars

are sovereign bonds

have at least three years to maturity; and

have an outstanding float of at least \$500 million.

The underlying index has determined the following to be eligible emerging market countries: Argentina, Bahrain, Brazil, Chile, Colombia, Costa Rica, Croatia, Dominican Republic, Egypt, Ecuador, El Salvador, Hungary, Indonesia, Jordan, Kazakhstan, Latvia, Lebanon, Lithuania, Mexico, Nigeria, Pakistan, Panama, Paraguay, Peru, the Philippines, Poland, Qatar, Romania, Russia, Saudi Arabia, Serbia, Slovenia, South Africa, South Korea, Sri Lanka, Trinidad and Tobago, Turkey, Ukraine and the United Arab Emirates; however, this universe of countries may change in accordance with the index sponsor’s determination of eligible emerging market countries, and there is no assurance that a particular country will be represented in the underlying index at any given time. PCY does not purchase all of the securities in the underlying index; instead, the PCY utilizes a representative “sampling” methodology to seek to achieve its investment objective. This “sampling” strategy results in the PCY holding a smaller number of bonds than are in the underlying index.

PCY is passively managed. The PCY’s investment adviser is Invesco PowerShares Capital Management LLC, and the underlying index is sponsored by Deutsche Bank Securities Inc.

### **Historical Performance of the PowerShares® Emerging Market Sovereign Debt ETF**

Closing prices of the PowerShares® Emerging Markets Sovereign Debt ETF can be found on Bloomberg under the symbol “PCY.” The following table illustrates the performance of the PowerShares® Emerging Markets Sovereign Debt ETF, using daily closing prices of the PowerShares® Emerging Markets Sovereign Debt ETF obtained from Bloomberg Financial Services. **Past PowerShares® Emerging Markets Sovereign Debt ETF values are not necessarily indicative of future PowerShares® Emerging Markets Sovereign Debt ETF values.**

**Closing Prices of the PowerShares® Emerging Market Sovereign Debt ETF**

	<b>High (\$)</b>	<b>Low (\$)</b>
2008 First Quarter	26.05	25.32
Second Quarter	26.15	24.10
Third Quarter	27.00	19.99
Fourth Quarter	22.50	13.61
2009 First Quarter	22.38	19.78
Second Quarter	23.98	21.30
Third Quarter	26.37	23.59
Fourth Quarter	26.70	25.35
2010 First Quarter	26.30	24.97
Second Quarter	26.55	25.24
Third Quarter	28.04	26.08
Fourth Quarter	28.58	26.48

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2011	First Quarter	26.90	26.01
	Second Quarter	27.18	26.42
	Third Quarter	28.02	26.14
	Fourth Quarter	27.80	26.01
2012	First Quarter	28.56	26.76
	Second Quarter	28.83	27.52
	Third Quarter	30.75	28.97
	Fourth Quarter	31.46	30.82
2013	First Quarter	31.55	29.71
	Second Quarter	31.21	25.86
	Third Quarter	27.97	26.20
	Fourth Quarter	28.10	26.61
2014	First Quarter	28.00	26.72
	Second Quarter	29.38	27.98
	Third Quarter	29.47	28.46
	Fourth Quarter	29.08	27.05
2015	First Quarter	29.00	27.68
	Second Quarter	29.02	27.41
	Third Quarter	28.04	26.80
	Fourth Quarter	28.26	27.15
2016	First Quarter	28.31	26.62
	Second Quarter	29.58	28.22
	Third Quarter	30.95	29.55
	Fourth Quarter	30.76	27.76
2017	First Quarter	29.16	28.28
	Second Quarter	29.89	29.11
	Third Quarter	30.13	28.93
	Fourth Quarter	29.88	29.15
2018	First Quarter	29.71	27.79
	Second Quarter	28.25	26.32
	Third Quarter (as of August 30, 2018)	27.41	26.51

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## **iShares® iBoxx \$ High Yield Corporate Bond ETF**

The iShares® iBoxx \$ High Yield Corporate Bond ETF trades on the NYSE Arca, Inc. under the ticker symbol “HYG.”

The HYG seeks to track the investment results of the Markit iBoxx® USD Liquid High Yield Index (the “HY Index”). The underlying index is a rules-based index consisting of liquid U.S. dollar-denominated, high yield corporate bonds for sale in the United States, which is designed to provide a broad representation of the U.S. dollar-denominated high yield liquid corporate bond market.

The HYG will concentrate its investments (i.e., hold 25% or more of its total assets) in a particular industry or group on industries to approximately the same extent that the HY Index is concentrated. The HYG generally invests at least 90% of its assets in securities that comprise the underlying index and in investments that provide substantially similar exposure to the securities in the underlying index. The HYG is passively managed and employs a Representative Sampling Strategy. The HYG’s investment adviser is BFA, and the underlying index is sponsored by Markit Indices Limited. The HYG is issued by the iShares® Trust, a registered investment company.

The HY Index is published by Markit Group Limited, the index sponsor. The HY Index is designed to reflect the performance of the U.S. dollar-denominated high yield corporate debt. The HY Index is market-value weighted with an issuer cap of 3%.

The HY Index consists of sub-investment grade U.S. dollar-denominated bonds issued by corporate issuers from developed countries and rated by at least one of three rating services: Fitch Ratings, Moody’s Investors Service or Standard & Poor’s Rating Services. The HY Index composition is rebalanced once a month, after the close of business on the last business day of the rebalancing month. The new HY Index composition becomes effective on the first business day of the next month.

## **Historical Performance of the iShares® iBoxx \$ High Yield Corporate Bond ETF**

Closing prices of the iShares® iBoxx \$ High Yield Corporate Bond ETF can be found on Bloomberg under the symbol “HYG.” The following table illustrates the performance of the iShares® iBoxx \$ High Yield Corporate Bond ETF, using daily closing prices of the iShares® iBoxx \$ High Yield Corporate Bond ETF obtained from Bloomberg Financial Services. **Past iShares® iBoxx \$ High Yield Corporate Bond ETF values are not necessarily indicative of future iShares® iBoxx \$ High Yield Corporate Bond ETF values.**

**Closing Prices of the \$ High Yield Corporate Bond ETF**

	<b>High (\$)</b>	<b>Low (\$)</b>
2008 First Quarter	99.70	93.65
Second Quarter	100.58	93.81
Third Quarter	93.89	78.53
Fourth Quarter	85.10	63.40
2009 First Quarter	80.10	61.64
Second Quarter	79.74	67.10
Third Quarter	86.47	75.57
Fourth Quarter	88.54	83.39
2010 First Quarter	89.68	83.61
Second Quarter	89.60	82.64
Third Quarter	89.69	84.68
Fourth Quarter	91.89	88.35
2011 First Quarter	92.50	89.78
Second Quarter	92.85	87.89
Third Quarter	91.84	82.73
Fourth Quarter	90.39	81.05
2012 First Quarter	92.13	88.90

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Second Quarter	91.22	86.47
Third Quarter	93.91	90.45
Fourth Quarter	93.90	90.67
2013 First Quarter	94.88	92.98
Second Quarter	96.29	89.04
Third Quarter	93.97	89.85
Fourth Quarter	93.79	91.51
2014 First Quarter	94.93	92.51
Second Quarter	95.38	93.78
Third Quarter	94.87	91.36
Fourth Quarter	93.18	86.89
2015 First Quarter	91.90	88.43
Second Quarter	91.50	88.38
Third Quarter	88.93	82.77
Fourth Quarter	85.83	78.84
2016 First Quarter	82.40	75.59
Second Quarter	84.69	80.87
Third Quarter	87.26	83.99
Fourth Quarter	87.42	83.47
2017 First Quarter	88.36	86.11
Second Quarter	88.66	87.22
Third Quarter	88.97	87.18
Fourth Quarter	88.69	86.68
2018 First Quarter	87.97	84.92
Second Quarter	86.46	84.96
Third Quarter (as of August 30, 2018)	86.41	84.78

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**iShares® 20+ Years Treasury Bond ETF**

The shares of iShares® 20+ Years Treasury Bond ETF trade on the Nasdaq under the symbol “TLT.” TLT seeks to track the investment results, before fees and expenses, of the ICE U.S. Treasury 20+ Year Bond Index. That index measures the performance of public obligations of the U.S. Treasury that have a remaining maturity greater than twenty years.

The ICE U.S. Treasury 20+ Year Bond Index measures the performance of public obligations of the U.S. Treasury. The index is market capitalization weighted, includes all publicly issued U.S. Treasury securities that meet the criteria for inclusion, and is rebalanced once a month on the last calendar day of the month. The U.S. Treasury securities included in the index must have a remaining maturity of greater than 20 years, are rated investment grade, and have \$300 million or more of outstanding face value. In addition, the securities must be dominated in the U.S. dollars and must be fixed -rate. Certain special issuances, such as state and local government series bonds (“SLGs”) and coupon issues that have been stripped from assets already included, are excluded from the index.

**Historical Performance of the iShares® 20+ Years Treasury Bond ETF**

Closing prices of the iShares® 20+ Years Treasury Bond ETF can be found on Bloomberg under the symbol “TLT.” The following table illustrates the performance of the iShares® 20+ Years Treasury Bond ETF, using daily closing prices of the iShares® 20+ Years Treasury Bond ETF obtained from Bloomberg Financial Services. **Past iShares® 20+ Years Treasury Bond ETF values are not necessarily indicative of future iShares® 20+ Years Treasury Bond ETF values.**

**Closing Prices of the iShares® 20+ Years Treasury Bond ETF**

	<b>High (\$)</b>	<b>Low (\$)</b>
2008 First Quarter	97.18	90.95
Second Quarter	95.67	88.87
Third Quarter	98.49	90.14
Fourth Quarter	122.45	92.74
2009 First Quarter	116.65	100.56
Second Quarter	106.37	88.19
Third Quarter	98.84	90.40
Fourth Quarter	99.70	89.46
2010 First Quarter	92.31	88.61
Second Quarter	101.75	87.47
Third Quarter	108.56	98.33

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Fourth Quarter	105.56	90.94
2011 First Quarter	93.92	88.19
Second Quarter	97.64	89.88
Third Quarter	123.13	93.61
Fourth Quarter	123.87	110.24
2012 First Quarter	121.44	110.10
Second Quarter	130.36	110.58
Third Quarter	132.16	118.30
Fourth Quarter	126.73	120.07
2013 First Quarter	120.32	114.75
Second Quarter	124.00	107.88
Third Quarter	110.41	102.13
Fourth Quarter	108.31	101.81
2014 First Quarter	109.99	102.17
Second Quarter	114.76	107.27

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Third Quarter	119.05	110.68
Fourth Quarter	127.60	117.20
2015 First Quarter	138.50	123.50
Second Quarter	132.13	115.23
Third Quarter	126.40	115.62
Fourth Quarter	124.56	118.33
2016 First Quarter	133.59	120.96
Second Quarter	139.55	127.25
Third Quarter	143.62	133.72
Fourth Quarter	136.78	116.80
2017 First Quarter	122.55	116.54
Second Quarter	128.22	120.44
Third Quarter	129.25	122.77
Fourth Quarter	128.31	122.47
2018 First Quarter	126.08	116.76
Second Quarter	122.22	116.22
Third Quarter (as of August 30, 2018)	122.75	118.46

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## **Federal Funds Rate**

The federal funds rate for each Index Business Day will be the rate for U.S. dollar federal funds, as published in H.15(519) under the heading “Federal Funds (effective),” as that rate is displayed on Bloomberg page FEDL01 <Index> under the heading “EFFECT.” If the federal funds rate cannot be determined in this manner, the following procedures will apply.

If the rate described above is not displayed on Bloomberg page FEDL01 <Index> at 3:00 P.M., New York City time, on the relevant Index Business Day, unless the calculation is made earlier and the rate is available from that source at that time, then the federal funds rate, for the relevant Index Business Day, will be the rate described above as published in H.15 daily update, or another recognized electronic source used for displaying that rate, under the heading “Federal Funds (effective).”

If the rate described above is not displayed on Bloomberg page FEDL01 <Index> and does not appear in H.15(519), H.15 daily update or another recognized electronic source at 3:00 P.M., New York City time, on the relevant Index Business Day, unless the calculation is made earlier and the rate is available from one of those sources at that time, the federal funds rate will be the arithmetic mean of the rates for the last transaction in overnight, U.S. dollar federal funds arranged, before 9:00 A.M., New York City time, on the business day following the relevant Index Business Day, by three leading brokers of U.S. dollar federal funds transactions in New York City selected by the Index Calculation Agent (which may include the Issuer or its affiliates).

If fewer than three brokers selected by the Index Calculation Agent are quoting as described above, the federal funds rate in effect for the relevant Index Business Day will be the federal funds rate in effect for the prior Index Business Day.



### **Historical Performance of the Federal Funds Rate**

The following graph illustrates the performance of the Federal Funds Rate from January 1, 2008 through August 30, 2018 using daily closing rates obtained from Bloomberg page FEDL01 <Index>. **Past Federal Funds Rates are not necessarily indicative of future Federal Funds Rates.**

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## **APPENDIX C**

### **SPECIAL CIRCUMSTANCES**

#### **Determinations of the Index Calculation Agent and Note Calculation Agent**

All calculations and determinations in respect of the notes made by the Index Calculation Agent or the Note Calculation Agent will, absent manifest error, be final and binding on the issuer and the holders of the notes. The Index Calculation Agent will not be responsible for its errors or omissions if made in good faith, except in the case of its gross negligence.

In certain circumstances, if a calculation or determination contemplated to be made by the Index Calculation Agent in respect of the notes involves the application of material discretion or is not based on information or calculation methodologies compiled or utilized by, or derived from, independent third party sources, the issuer may appoint one or more calculation experts to confirm such calculation or determination.

In the circumstances described below, the Index Calculation Agent may, as it determines appropriate, (i) adjust the components or variables in calculating the payments on the notes, (ii) defer the timing of the calculation of the payments on the notes, or (iii) replace a Securities Component with a comparable index or ETF. Details of the actions that may be taken by the Index Calculation Agent in such circumstances are described below.

On the occurrence of an Extraordinary Event, instead of paying the payment due on the notes at maturity, the Index Calculation Agent may elect to have the issuer redeem the notes early by paying an amount based on the estimated present value on the occurrence of the Extraordinary Event of the amount that would have been payable on the notes if the Extraordinary Event had not occurred. However, this amount will not be less than the principal amount of the notes.

#### **Discontinuance or Modification of an Index Component that is an Index**

If an Index Component that is an index is (i) not calculated and announced by the sponsor of such index existing on the Closing Date but is calculated and announced by an entity (a “successor sponsor”) that succeeds such sponsor and

continues calculation and publication of the index, provided such successor sponsor is acceptable to the issuer, or (ii) replaced by a successor index using, in the determination of the Index Calculation Agent, the same or a substantially similar formula for and method of calculation as used in the calculation of the index, then the index will be deemed to be the index so calculated and announced by the successor sponsor or that successor index, as the case may be, and the payment due on the notes will be calculated by reference to the closing value of the applicable index.

If any of the following occurs in respect of a Securities Component that is an index (each a “Material Index Change”):

1. on or prior to the Valuation Date, the sponsor of the index announces that it will make a material change in the formula for or the method of calculating the Closing Level of such index or in any other way materially modifies the index (other than a modification prescribed in that formula or method to maintain the index in the event of changes in constituent securities and capitalization and other routine events) or permanently cancels the index and no successor index exists;
2. on the Valuation Date, the sponsor of the index fails to calculate, announce and/or publish the Closing Level of the index (or the information necessary for determining the Closing Level of the index), or is temporarily or permanently discontinued or unavailable; or
3. prior to the Valuation Date, the issuer determines, in its sole discretion, that it has ceased to have any necessary license or right to utilize the index in connection with the notes,

then the Index Calculation Agent may (A) determine if such Material Index Change has a material effect on the calculation of the payment on the notes and, if so, shall calculate those payments using, in lieu of a published Closing Level for the index, the value for the index as at the Valuation Date as determined by the Index Calculation Agent in accordance with the formula for and method of calculating the Closing Level of the index last in effect prior to the change, failure or cancellation, but using only those constituent securities that comprised the index immediately prior to that Material Index Change, or (B) determine if another comparable equity index exists that (1) is reasonably representative of the equity market which was represented by the index, and (2) may be as efficiently and economically hedged by dealers in such equity market as the index was so hedged. If the Index Calculation Agent determines that such other comparable index exists, then the comparable index (the “Replacement Index”) shall replace the index as of the date of such determination. Upon such replacement (a “Replacement Event”), the Replacement Index shall be deemed to be the index for purposes of determining the payment on the notes and the Note Calculation Agent shall, as soon as practicable after such Replacement Event, make adjustments to the Initial Level, or any other component or variable relevant to the determination of any amounts payable in respect of the notes. Adjustments will be made in such a way as the Index Calculation Agent determines appropriate to account for the performance of the index up to the occurrence of such Replacement Event and the subsequent performance of the Replacement Index thereafter. Upon any Replacement Event and the making of any adjustments, the Index Calculation Agent shall promptly give notice to the holders of the notes or their agents.

For greater certainty, the Index Calculation Agent, acting in its sole and absolute discretion, may determine that no other comparable index exists such that a Replacement Index is not substituted for the index. See “– Extraordinary Event” below.

### **Potential Adjustment Event**

Following the declaration of the terms of any Potential Adjustment Event (as defined below) in respect of the units of an Index Component that is an ETF, the Index Calculation Agent, acting in its sole and absolute discretion, will determine whether such Potential Adjustment Event has a diluting or concentrative effect on the theoretical value of the relevant units and, if so, will (i) make the corresponding adjustments, if any, to any one or more of the Initial Level, the formula for calculating the Index Return, or any other component or variable relevant to the determination of the payment due on the notes as the Index Calculation Agent, acting in its sole and absolute discretion, determines appropriate to account for the diluting or concentrative effect and (ii) determine the effective date of the adjustments. The Index Calculation Agent may, but need not, determine any appropriate adjustments by reference to the adjustments in respect of such Potential Adjustment Event made by an options exchange to options on the units traded on such options exchange. Unless expressly provided below, the Index Calculation Agent will make no adjustment in respect of any distribution of cash. “Potential Adjustment Event” means, in respect of the units of an Index Component that is an ETF, the occurrence of any of the following events, as determined by the Index Calculation Agent, acting in its sole and absolute discretion:

1. a subdivision, consolidation or reclassification of the units (unless resulting in a Merger Event), or a free distribution or dividend of units to existing holders thereof by way of bonus, capitalization or similar issue;
2. a distribution, issue or dividend to existing holders of units of (i) units, or (ii) other share capital or securities granting the right to payment of dividends, distributions and/or the proceeds of liquidation of an Index Component that is an ETF equally or proportionately with such payments to holders of units, or (iii) share capital or other securities of another issuer acquired or owned (directly or indirectly) by an Index Component that is an ETF as a result of a spin-off or other similar transaction, or (iv) any other type of securities, rights or warrants or other assets, in any case for payment (cash or other consideration) at less than the prevailing market price as determined by the Index Calculation Agent;
3. an extraordinary dividend or distribution in respect of units (where the characterization of a dividend or distribution as “extraordinary” will be determined by the Index Calculation Agent); or
4. any other event that may have a diluting or concentrative effect on the theoretical value of the units.

### **Merger Event**

On or after a Merger Date (as defined below), the Index Calculation Agent (i) will (A) make adjustment(s), if any, to any one or more of the Initial Level, the formula for calculating the Index Return, or any other component or variable relevant to the determination of the payment due on the notes as the Index Calculation Agent, acting in its sole and absolute discretion, determines appropriate to account for the economic effect on the notes of the Merger Event, which may, but need not, be determined by reference to the adjustments made in respect of such Merger Event by an options exchange to options on the units traded on such options exchange and (B) determine the effective date of the adjustments, or (ii) if the Index Calculation Agent determines that no adjustments that it could make under (i) will produce a commercially reasonable result, may deem the relevant Merger Event to be a Substitution Event, subject to the provisions of “—Substitution Event” below.

“Merger Event” means, in respect of a unit of an Index Component that is an ETF, any (i) reclassification, reorganization, consolidation or change of the units that results in a transfer of or an irrevocable commitment to transfer all units outstanding to another entity or person, (ii) statutory arrangement, consolidation, amalgamation, merger or binding security exchange of the ETF with or into another entity or person (other than a statutory arrangement, consolidation, amalgamation, merger or binding security exchange in which the ETF is the continuing entity and which does not result in a reclassification, reorganization, consolidation or change of all units outstanding), (iii) takeover bid (within the meaning of applicable securities laws), tender offer, exchange offer, solicitation, proposal or other event by any entity or person to purchase or otherwise obtain 100% of the outstanding units that results in a transfer of or an irrevocable commitment to transfer all units (other than units owned or controlled by such other entity or person), (iv) statutory arrangement, consolidation, amalgamation, merger or binding security exchange of the ETF or its subsidiaries with or into another entity in which the ETF is the continuing entity and which does not result in a reclassification, reorganization, consolidation or change of all units outstanding but results in the outstanding units (other than units owned or controlled by such other entity) immediately prior to such event collectively representing less than 50% of the outstanding units immediately following such event (commonly referred to as a “reverse merger”), or (v) sale of all or substantially all assets of the ETF (or any lease, long term supply agreement or other arrangement having the same economic effect as a sale of all or substantially all assets in the ETF) in each case if the Merger Date is on or before the date on which the Index Return is determined.

“Merger Date” means the closing date of a Merger Event or, where a closing date cannot be determined under the local law applicable to such Merger Event, such other date as determined by the Index Calculation Agent.

### **Substitution Event**

Upon the Index Calculation Agent becoming aware of the occurrence of a Substitution Event (as defined below) in respect of the units of an Index Component that is an ETF, the following will apply, effective on a date (the “Substitution Date”) as determined by the Index Calculation Agent, acting in its sole and absolute discretion:

1. any adjustments set out in “Potential Adjustment Event” above in respect of the units will not apply;
2. the Index Calculation Agent may choose (in its sole and absolute discretion) a new security (the “Alternate ETF”) of another exchange-traded fund listed on a major exchange or market quotation system as a substitute for the units (in its discretion, the Index Calculation Agent may also substitute an index instead of an ETF, and make such changes to this methodology as it deems necessary to effect such change, in order to preserve the economics of the notes to holders and to the issuer to the extent it deems to be reasonably necessary);

3. the units will not be used for purposes of determining the payment due on the notes on or after the Substitution Date;
  
4. the Alternate ETF will replace the units, the issuer of such Alternate ETF will replace the ETF, and the primary exchange or market quotation system on which such Alternate ETF is listed will be the Exchange in respect of such Alternate ETF; and
  
5. the Index Calculation Agent, acting in its sole and absolute discretion, will determine the initial Closing Level of such Alternate ETF by taking into account all relevant market circumstances, including the initial price of the units and the Closing Level or estimated value on the Substitution Date of the units and the Closing Level on the Substitution Date of the Alternate ETF, and will make adjustments, if any, to any one or more of the formula for calculating the Index Return or any other component or variable relevant to the determination of the payment due on the notes as the Index Calculation Agent, acting in its sole and absolute discretion, determines appropriate to account for the economic effect on the notes of the relevant Substitution Event (including adjustments to account for changes in volatility, expected dividends or distributions, stock loan rate or liquidity relevant to the applicable substitution).

Upon choosing an Alternate ETF, the Index Calculation Agent will promptly give details of such substitution and brief details of the Substitution Event to Holders or their agents. For greater certainty, the Alternate ETF chosen by the Index Calculation Agent may be any security of a large issuer, including any securities of an issuer that was the continuing entity in respect of a Merger Event. The Index Calculation Agent may decide not to choose an Alternate ETF as a substitute for the units of an Index Component that is an ETF if the Index Calculation Agent, acting in its sole and absolute discretion, determines that there are no appropriate securities of a large issuer listed on a major exchange or market quotation system which offer sufficient liquidity in order for a party to acquire, place, establish, re-establish, substitute, maintain, modify or unwind or dispose of any hedge transaction in respect of such securities or to realize, recover or remit the proceeds of any such hedge transaction. See “—Extraordinary Event”.

“Substitution Event” means, in respect of the units of an Index Component that is an ETF, any Nationalization, Insolvency or Delisting in respect of the units, any ETF Index Event, or any Merger Event in respect of the units that is deemed by the Index Calculation Agent to be a Substitution Event, in its sole and absolute discretion, or the occurrence and continuation for at least four consecutive applicable Exchange Days of a Market Disruption Event (as defined below) in respect of the units.

“Nationalization” means, in respect of the units of an Index Component that is an ETF, that all or substantially all of the units or all or substantially all of the assets of the ETF are nationalized, expropriated or otherwise required to be transferred to any governmental agency, authority or entity.

“Insolvency” means, in respect of the units of an Index Component that is an ETF, that by reason of the voluntary or involuntary liquidation, bankruptcy, insolvency, dissolution or winding-up of or any analogous proceeding affecting the ETF, (i) all units are required to be transferred to a trustee, liquidator or other similar official or (ii) holders of units become legally prohibited from transferring them.

“Delisting” means, in respect of the units of an Index Component that is an ETF, that the Exchange announces that pursuant to the rules of the Exchange, the units cease (or will cease) to be listed, traded or publicly quoted on the Exchange for any reason (other than a Merger Event) and are not immediately re-listed, re-traded or re-quoted on an exchange or quotation system located in the same country as the Exchange.

“ETF Index Event” means (i) on or prior to the Valuation Date, the sponsor for the index underlying an Index Component that is an ETF index announces that it will make a material change in the formula for or the method of calculating the index or in any other way materially modifies the index (other than a modification prescribed in that formula or method to maintain the index in the event of changes to the constituent securities and other routine events) or permanently cancels the index and no successor index exists, or (ii) on a Reweighting Date or the Valuation Date, the sponsor for the index fails to determine and announce the official closing level or value of the index, and, in either case, the Index Calculation Agent determines that such event has had a material effect on the calculation of the Index Level or payment due on the notes.

### **Market Disruption Event**

If the Index Calculation Agent, acting in its sole and absolute discretion, determines that a Market Disruption Event (as defined below) in respect of an Index Component has occurred and is continuing on any day that, but for that event, would be a Reweighting Selection Date, Reweighting Date or the Valuation Date, then the Index Level will be determined and, if applicable, the payment due on the notes will be calculated on the basis that the Reweighting



Selection Date, Reweighting Date or Valuation Date, as the case may be, will be postponed to the next Index Business Day on which there is no Market Disruption Event in effect in respect of the Index Component.

However, there will be a limit for postponement of the Reweighting Selection Date, Reweighting Date or Valuation Date. If on the eighth (8th) Index Business Day following the date originally scheduled as a Reweighting Selection Date, Reweighting Date or the Valuation Date, as the case may be, such Reweighting Selection Date, Reweighting Date or the Valuation Date has not occurred, then despite the occurrence of any Market Disruption Event in respect of the Index Component on or after such eighth (8th) Index Business Day:

1. such eighth (8th) Index Business Day will be the Reweighting Selection Date, Reweighting Date or Valuation Date, as the case may be, and
2. the Index Level for such Reweighting Selection Date, Reweighting Date or Valuation Date, as the case may be, used in the calculation of the Index Return and the payment due on the notes, will be a value equal to the Index Calculation Agent's estimate of the Index Level as at such Reweighting Selection Date, Reweighting Date or Valuation Date reasonably taking into account all relevant market circumstances.

A Market Disruption Event may delay the calculation of the payment due on the notes. Where there has been a Market Disruption Event on a day that would, but for the occurrence of such Market Disruption Event, be the Valuation Date, payment of the amount due on the notes will be made on the third Business Day following the determination of the Index Return.

“Market Disruption Event” means any bona fide event, circumstance or cause (whether or not reasonably foreseeable) beyond the reasonable control of the issuer or any person that does not deal at arm’s length with Bank of Montreal which (as determined by the Index Calculation Agent) has or will have a material adverse effect on the ability of a party to acquire, place, establish, re-establish, substitute, maintain, modify or unwind or dispose of any hedge transaction in respect of the Index or to realize, recover or remit the proceeds of any such hedge transaction. A Market Disruption Event may include, without limitation, any of the following events:

1. any failure of trading to commence, or the permanent discontinuation of trading or any suspension of or limitation imposed on trading of: (i) an Index Component that is an index; (ii) securities that comprise 10% or more of the value of an Index Component that is an index on a relevant Exchange; (iii) units of an Index Component that is an ETF; or (iv) any futures or options relating to an Index Component by the relevant Exchange or Related Exchange, whether by reason of movements in price exceeding limits permitted by a relevant Exchange or Related Exchange or otherwise;
2. in respect of an Index Component, if any, that is an index, the failure of the sponsor of the index, or the successor sponsor, to determine or announce the closing level of the index (or the information necessary for determining the closing level of the index), or the temporary or permanent discontinuance or unavailability of such announcements;
3. the closure on any Index Business Day of an Exchange or Related Exchange after it has opened for trading but prior to its scheduled closing time unless such earlier closing time is announced by the Exchange or Related Exchange at least one hour prior to the earlier of (i) the actual closing time for the regular trading session on such Exchange or Related Exchange on such Index Business Day and (ii) the submission deadline for orders to be submitted for entry in the Exchange or Related Exchange system for execution at the close of trading on such Index Business Day;
4. any event (other than an event described in (3) above) that disrupts or impairs (as determined by the Index Calculation Agent) the ability of market participants in general to effect transactions in, or obtain market values for: (i) the Index Component, (ii) securities that comprise 10% or more of the value of an Index Component that is an index on an Exchange, or (iii) any futures or options contracts relating to an Index Component on a Related Exchange;
5. the failure on any Exchange Day of an Exchange(s) or any Related Exchange to open for trading during its regular trading session;

6. the adoption, change, enactment, publication, decree or other promulgation of any statute, regulation, rule or notice, howsoever described, or order of any court or other governmental or regulatory authority, or issuance of any directive or promulgation of, or any change in the interpretation, whether formal or informal, by any court, tribunal, regulatory authority or similar administrative or judicial body of any law, order, regulation, decree or notice, howsoever described, any other event that (as determined by the Index Calculation Agent) makes or would make it unlawful or impracticable for the Issuer to perform its obligations under the notes or for dealers generally to acquire, place, establish, re-establish, substitute, maintain, modify or unwind or dispose of any hedge transaction in respect of an Index Component or to realize, recover or remit the proceeds of any such hedge transaction in respect of the Index Component or otherwise has or would have a material adverse effect on an Index Component, on a securityholder of an Index Component that is an ETF, or on the economy or the trading of securities generally on any relevant Exchange or Related Exchange;

7. the taking of any action by any governmental, administrative, legislative or judicial authority or power of the U.S. or any other country, or any political subdivision thereof, that (as determined by the Index Calculation Agent) has a material adverse effect on the financial markets of the U.S. or of a country in which an Exchange or Related Exchange is located;

8. any outbreak or escalation of hostilities or other national or international calamity or crisis (including, without limitation, natural calamities) that (as determined by the Index Calculation Agent) has or would have a material adverse effect on the ability of the issuer to perform its obligations under the notes or of dealers generally to acquire, place, establish, re-establish, substitute, maintain, modify or unwind or dispose of any hedge transaction in respect of an Index Component or to realize, recover or remit the proceeds of any such hedge transaction in respect of the Index Component or has or would have a material adverse effect on the economy of the U.S. or of a country in which an Exchange or Related Exchange is located or the trading of securities generally on any relevant Exchange or Related Exchange; or

9. an increase in the cost of acquiring, placing, establishing, re-establishing, substituting, maintaining, modifying unwinding or disposing of any hedge transaction in connection with an Index Component or in the cost of realizing, recovering or remitting the proceeds of any such hedge transaction.

### **Extraordinary Event**

If one of the events lists in the definition of “Extraordinary Event” (defined below) occurs, then the Index Calculation Agent may, upon notice to the Holders to be given effective on an applicable Exchange Day (the date of such notification being the “Extraordinary Event Notification Date”), elect to have the issuer redeem the notes early and estimate the present value (but shall not be less than the principal amount of the notes) (the “Note Early Payment Amount”) as of the Extraordinary Event Notification Date, taking into account all relevant market circumstances, of a right to receive payment of any amount due on the notes that, but for such occurrence of the Extraordinary Event, would have been payable. Upon such election, the following consequences will arise as of the Extraordinary Event Notification Date:

1. any payment on the notes that may otherwise be payable by the issuer will not be calculated in accordance with the provisions set out in on pages C-1 and C-2 above;
2. the Note Early Payment Amount will be determined as of the Extraordinary Event Notification Date, whether or not any Extraordinary Event is continuing on such date; and
3. upon payment of the Note Early Payment Amount, the issuer shall be discharged of all its obligations in respect of any payment on the notes.

Payment of the Note Early Payment Amount, if any, per note will be made on the tenth (10th) Business Day after the Extraordinary Event Notification Date. Upon such payment, the Holder’s right to receive any payment on the notes will be extinguished.

It should be noted that the Note Early Payment Amount, if any, will reflect a return to Holders that may be less than the amount of payment on the notes that may have been payable absent the occurrence of the relevant Extraordinary Event and the election by the issuer to pay the Note Early Payment Amount.

“Extraordinary Event” means,

1. any of the following events occurs after the closing date and prior to maturity in respect of an Index Component that is an ETF where the Index Calculation Agent, acting in its sole and absolute discretion, has determined in good faith that such event constitutes an “Extraordinary Event”:
  - a. the winding-up, dissolution or liquidation of the Index Component or other cessation of trading of any of its units;
  - b. the investment adviser of the Index Component or any affiliate of the investment adviser ceases to act as the investment adviser of the Index Component;
  - c. the investment objectives, investment restrictions or investment policies of the Index Component or any of its units are modified (except where such modification is of a formal, minor or technical nature);
  - d. a material modification (other than any modifications referred to in (iii) above) of the terms and conditions relating to the Index Component or any of its units (including, but not limited to, a material modification of its organizational documents) or the occurrence of any event or change having a material adverse effect on the Index Component or any of its units (including, but not limited to, the interruption, breakdown or suspension for a significant period of time of the calculation or publication of the net asset value per unit);
  - e. the non-execution or partial-execution by the Index Component of a subscription, redemption or exchange order given by an investor in any of its units or a refusal to transfer any of its units to an eligible transferee except where such non-execution, partial execution or refusal is the result of circumstances beyond its control;
  - f. any mandatory redemption or other reduction (actual or potential as determined by the Index Calculation Agent in its sole discretion) in the number of the units held by any holder of such units of the Index Component for any reason beyond the control of such holder;
  - g. any failure by the investment adviser of the ETF to calculate or publish the daily official net asset value per unit within five (5) Business Days after the relevant valuation date except as provided in the case of a suspension of the determination of the net asset value per unit of the Index Component in accordance with the provisions set out in its organizational documents;

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- h. the Index Component imposes in whole or part any restriction, charge or fee in respect of a redemption, exchange or subscription of any of its units by any holder thereof (other than any fee applicable to a holder of the units of the Index Component as at the Closing Date), including, without limitation, a short-term trading fee imposed by the investment adviser of the Index Component and paid to such ETF that is different from the short-term trading fees charged by the investment adviser generally as of the date hereof or that is applied differently than it would be applied as of the date hereof;
- i. any relevant activities of or in relation to the Index Component, its investment adviser or its portfolio advisor are or become unlawful, illegal or otherwise prohibited in whole or in part as a result of compliance with any present or future law, regulation, judgment, order or directive of any governmental, administrative, legislative or judicial authority or power, or in the interpretation thereof;
- j. a relevant authorization or license is revoked or is under review by a competent authority in respect of the Index Component or its investment adviser;
- k. any change in or in the official interpretation or administration of any laws or regulation relating to taxation that has or is likely to have a material adverse effect on any unitholder of the Index Component or in respect of any hedge established in connection with the notes;
- l. a party is unable to effectively acquire, establish, re-establish, substitute, maintain, unwind or dispose of any hedging transaction in connection with the notes or to realize, recover or remit the proceeds of any such hedging transaction;
- m. an increase in the cost of acquiring, establishing, re-establishing, substituting, maintaining, unwinding or disposing of any hedging transaction or in the cost of realizing, recovering or remitting the proceeds of any such hedging transaction in connection with the notes; or
- n. as a result of any adoption of, or any change in, any law, order, regulation, decree or notice, howsoever described, or issuance of any directive or promulgation of, or any change in the interpretation, whether formal or informal, by any court, tribunal, regulatory authority or similar administrative or judicial body of any law, order, regulation, decree or notice, howsoever described, after such date or as a result of any other event, (1) it would become unlawful for any unitholder of the Index Component to hold, purchase, exchange, redeem or sell any units, (2) the cost of investing in any units would materially increase, other than ordinary course increases in the market value of the units, or (3) a unitholder would be subject to a material loss as a result of holding any units;

2. the Index Calculation Agent determines in its sole and absolute discretion that a Market Disruption Event has occurred and has continued for at least eight (8) consecutive Exchange Days, or that any Material Index Change or Substitution Event has occurred, and the Index Calculation Agent has decided not to choose an Alternate ETF or a Replacement Index, as the case may be, as a substitute for the affected Index Component on the grounds the Index Calculation Agent has determined that there is no other appropriate ETF or index that offers sufficient liquidity in order for the Index Calculation Agent or any of its affiliates to acquire, place, establish, re-establish, substitute, maintain, modify or unwind or dispose of any hedge transaction in respect of the affected Index Component or to realize, recover or remit the proceeds of any such hedge transaction; or
  
3. there is any change or proposed change in applicable law (or the interpretation or administration thereof) that, in the opinion of the Index Calculation Agent, acting reasonably, would have a significant adverse effect to Holders regarding the market price, value, marketability or payment with respect to the notes.

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