

GOLDMAN SACHS GROUP INC

Form 424B8

March 07, 2019

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Registration Statement No. 333-219206

The information in this preliminary prospectus supplement is not complete and may be changed. This preliminary prospectus supplement is not an offer to sell nor does it seek an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

Subject to Completion. Dated February 28, 2019.

GS Finance Corp.

\$

GS Momentum Builder<sup>®</sup> Multi-Asset 5S ER Index-Linked Notes due

guaranteed by

The Goldman Sachs Group, Inc.

The notes will not bear interest. The amount that you will be paid on your notes on the stated maturity date (expected to be December 29, 2023) is based on the performance of the GS Momentum Builder<sup>®</sup> Multi-Asset 5S ER Index as measured from the trade date (expected to be March 26, 2019) to and including the determination date (expected to be December 26, 2023). The index measures the extent to which the performance of the selected underlying assets (up to 14 ETFs and a money market position in 3-month USD LIBOR, which provide exposure to broad-based equities, fixed income, emerging markets, alternatives, commodities, inflation, and cash equivalent asset classes) outperform the sum of the return on 3-month USD LIBOR plus 0.65% per annum (accruing daily). LIBOR is being modified, see page S-27.

The return on your notes will equal between 2.25 and 2.45 times the index return, if the final index level on the determination date is greater than the initial index level (set on the trade date). The index return will be the percentage increase or decrease in the final index level from the initial index level. If the final index level is equal to or less than the initial index level, you will receive 100% of the face amount of your notes. Because the index measures the performance of the selected underlying assets less the sum of the return on 3-month USD LIBOR plus 0.65% per annum (accruing daily), on any day such assets must outperform the return on 3-month USD LIBOR plus 0.65% per annum for the index level to increase.

The index rebalances on each index business day from among the 15 underlying assets. The daily weight used to rebalance each underlying asset on any index business day equals the average of the target weights for each underlying asset determined on such day and each of the prior 21 index business days. Target weights are determined by calculating for each day the combination of underlying assets with the highest return during three return look-back periods (9, 6 and 3 months), subject to a (a) limit of 5% on portfolio realized volatility over the related volatility look-back period (6, 3 and 1 months for the 9, 6 and 3 month return look-back periods, respectively) and (b) maximum weight for each underlying asset and each asset class.

This results in a portfolio for each of the three return look-back periods for each day. The target weight of each underlying asset will equal the average of the weights, if any, of such underlying asset in the three portfolios. As a result of this rebalancing, the index may include as few as 3 ETFs (and the money market position) and may never include some of the underlying assets or asset classes.

After the index is rebalanced on an index business day, the realized volatility for the prior month is calculated. Realized volatility is the degree of variation in the daily closing prices or levels of the aggregate of the underlying assets over the applicable volatility look-back period. If the realized volatility exceeds 6%, the index will be rebalanced again for that day by ratably reallocating a portion of the exposure to the ETFs in the index to the money market position sufficient to reduce the prior month realized volatility to 6%. As a result of such rebalancing, the index may not include any ETFs and may allocate its entire exposure to the money market position, the return on which will always be less than the sum of the return on 3-month USD LIBOR plus 0.65% per annum. Historically, a significant portion of the index has been in the money market position.

At maturity, for each \$1,000 face amount of your notes you will receive an amount in cash equal to:

if the index return is positive (the final index level is greater than the initial index level), the sum of (i) \$1,000 plus (ii) the product of (a) \$1,000 times (b) the participation rate (expected to be between 2.25 and 2.45) times (c) the index return; or

if the index return is zero or negative (the final index level is equal to or less than the initial index level), \$1,000.

You should read the disclosure herein to better understand the terms and risks of your investment, including the credit risk of GS Finance Corp. and The Goldman Sachs Group, Inc. See page S-18.

The estimated value of your notes at the time the terms of your notes are set on the trade date is expected to be between \$890 and \$940 per \$1,000 face amount. For a discussion of the estimated value and the price at which Goldman Sachs & Co. LLC would initially buy or sell your notes, if it makes a market in the notes, see the following page.

Original issue date: expected to be March 29, 2019 Original issue price: 100% of the face amount\*

Underwriting discount: % of the face amount\* Net proceeds to the issuer: % of the face amount

\* The original issue price will be % for certain investors; see "Supplemental Plan of Distribution" on page S-155.

Neither the Securities and Exchange Commission nor any other regulatory body has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense. The notes are not bank deposits and are not insured by the Federal Deposit Insurance Corporation or any other governmental agency, nor are they obligations of, or guaranteed by, a bank.

Goldman Sachs & Co. LLC

Prospectus Supplement No.      dated      , 2019.

The issue price, underwriting discount and net proceeds listed above relate to the notes we sell initially. We may decide to sell additional notes after the date of this prospectus supplement, at issue prices and with underwriting discounts and net proceeds that differ from the amounts set forth above. The return (whether positive or negative) on your investment in notes will depend in part on the issue price you pay for such notes.

GS Finance Corp. may use this prospectus in the initial sale of the notes. In addition, Goldman Sachs & Co. LLC or any other affiliate of GS Finance Corp. may use this prospectus in a market-making transaction in a note after its initial sale. Unless GS Finance Corp. or its agent informs the purchaser otherwise in the confirmation of sale, this prospectus is being used in a market-making transaction.

### Estimated Value of Your Notes

The estimated value of your notes at the time the terms of your notes are set on the trade date (as determined by reference to pricing models used by Goldman Sachs & Co. LLC (GS&Co.) and taking into account our credit spreads) is expected to be between \$890 and \$940 per \$1,000 face amount, which is less than the original issue price. The value of your notes at any time will reflect many factors and cannot be predicted; however, the price (not including GS&Co.'s customary bid and ask spreads) at which GS&Co. would initially buy or sell notes (if it makes a market, which it is not obligated to do) and the value that GS&Co. will initially use for account statements and otherwise is equal to approximately the estimated value of your notes at the time of pricing, plus an additional amount (initially equal to \$      per \$1,000 face amount).

Prior to      , the price (not including GS&Co.'s customary bid and ask spreads) at which GS&Co. would buy or sell your notes (if it makes a market, which it is not obligated to do) will equal approximately the sum of (a) the then-current estimated value of your notes (as determined by reference to GS&Co.'s pricing models) plus (b) any remaining additional amount (the additional amount will decline to zero on a straight-line basis from the time of pricing through      ). On and after      , the price (not including GS&Co.'s customary bid and ask spreads) at which GS&Co. would buy or sell your notes (if it makes a market) will equal approximately the then-current estimated value of your notes determined by reference to such pricing models.

### About Your Prospectus

The notes are part of the Medium-Term Notes, Series E program of GS Finance Corp. and are fully and unconditionally guaranteed by The Goldman Sachs Group, Inc. This prospectus includes this prospectus supplement and the accompanying documents listed below. This prospectus supplement constitutes a supplement to the documents listed below, does not set forth all the terms of your notes and therefore should be read in conjunction with such documents:

Prospectus supplement dated July 10, 2017

Prospectus dated July 10, 2017

The information in this prospectus supplement supersedes any conflicting information in the documents listed above. In addition, some of the terms or features described in the listed documents may not apply to your notes.

We refer to the notes we are offering by this prospectus supplement as the “offered notes” or the “notes”. Each of the offered notes has the terms described below. Please note that in this prospectus supplement, references to “GS Finance Corp.”, “we”, “our” and “us” mean only GS Finance Corp. and do not include its subsidiaries or affiliates, references to “The Goldman Sachs Group, Inc.”, our parent company, mean only The Goldman Sachs Group, Inc. and do not include its subsidiaries or affiliates and references to “Goldman Sachs” mean The Goldman Sachs Group, Inc. together with its consolidated subsidiaries and affiliates, including us. The notes will be issued under the senior debt indenture, dated as of October 10, 2008, as supplemented by the First Supplemental Indenture, dated as of February 20, 2015, each among us, as issuer, The Goldman Sachs Group, Inc., as guarantor, and The Bank of New York Mellon, as trustee. This indenture, as so supplemented and as further supplemented thereafter, is referred to as the “GSFC 2008 indenture” in the accompanying prospectus supplement. The notes will be issued in book-entry form and represented by a master global note.

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The following is a list of the eligible underlying assets for the index, including the related asset classes, asset class minimum and maximum weights and underlying asset minimum and maximum weights. The index is more fully described beginning on page S-40 herein.

Broad-Based Equities	0%	50%	SPDR® S&P 500® ETF Trust	SPY	0%	20%
			iShares® MSCI EAFE ETF	EFA	0%	20%
			iShares® MSCI Japan ETF	EWJ	0%	10%
Fixed Income	0%	50%	iShares® 20+ Year Treasury Bond ETF	TLT	0%	20%
			iShares® iBoxx \$ Investment Grade Corporate Bond ETF	LQD	0%	20%
			iShares® iBoxx \$ High Yield Corporate Bond ETF	HYG	0%	20%
			iShares® 7-10 Year Treasury Bond ETF	IEF	0%	20%
Emerging Markets	0%	20%	iShares® MSCI Emerging Markets ETF	EEM	0%	20%
Alternatives	0%	25%	iShares® U.S. Real Estate ETF	IYR	0%	20%
			iShares® Preferred and Income Securities ETF	PFF	0%	10%
			iShares® Nasdaq Biotechnology ETF	IBB	0%	10%
Commodities	0%	25%	SPDR® S&P® Oil & Gas Exploration & Production ETF	XOP	0%	20%
			SPDR® Gold Trust	GLD	0%	20%
Inflation	0%	10%	iShares® TIPS Bond ETF	TIP	0%	10%
Cash Equivalent	0%	50%**	Money Market Position	N/A	0%	50%**

\* The value of a share of an eligible ETF may reflect transaction costs and fees incurred or imposed by the investment advisor of the eligible ETF as well as the costs to the ETF to buy and sell its assets. These costs and fees are not included in the calculation of the index underlying the eligible ETF. For more fee information relating to an eligible ETF, see “The Eligible Underlying Assets” on page S-65.

\*\* With respect to the money market position, the related asset class maximum weight and underlying asset maximum weight limitations do not apply after the first rebalancing on each index business day and, therefore, the index may

allocate its entire exposure to the money market position.

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[REDACTED]

The below is only a brief summary of the terms of your notes. You should read the detailed description thereof in “Terms and Conditions” on page S-12 and in “Specific Terms of Your Notes” in the accompanying prospectus supplement and accompanying prospectus.

[REDACTED]

For investors who:

seek the opportunity to achieve a return at maturity based on the performance of an index that attempts to track the positive price momentum in certain eligible underlying assets by varying exposure to those eligible underlying assets, subject to limitations on volatility and a minimum and maximum weight for each underlying asset and each asset class.

understand that the eligible underlying assets provide exposure to broad-based equities, fixed income, emerging markets, alternatives, commodities, inflation, and cash equivalent asset classes.

seek to have their principal returned after a period of 57 months.

believe the index will increase during the period from the trade date to the determination date.

are willing to receive only their principal back at maturity if the index return is less than or equal to zero.

As a result of the rebalancing among the 15 underlying assets, the index may include as few as four underlying assets (as few as three ETFs) and may not include some of the underlying assets or asset classes during the entire term of your notes. As a result of any rebalancing into the money market position to reduce the prior month realized volatility to 6%, the index may not include any ETFs and may allocate its entire exposure to the money market position, the return on which will always be less than the sum of the return on 3-month USD LIBOR plus 0.65% per annum (accruing daily). Historically, a significant portion of the index exposure has been to the money market position.

[REDACTED]

At maturity, for each \$1,000 face amount of your notes, you will receive an amount in cash equal to:

if the index return is positive (the final index level is greater than the initial index level), the sum of (i) \$1,000 plus (ii) the product of (a) \$1,000 times (b) the upside participation rate (expected to be between 2.25 and 2.45) times (c) the index return; or

if the index return is zero or negative (the final index level is equal to or less than the initial index level), \$1,000.


The GS Momentum Builder<sup>®</sup> Multi-Asset 5S ER Index (the index) measures the extent to which the performance of the exchange-traded funds and a money market position (together with the ETFs, the underlying assets) included in the index outperform the sum of the return on the notional interest rate, which is a rate equal to 3-month USD LIBOR, plus 0.65% per annum (accruing daily). The money market position reflects the notional returns accruing to a hypothetical investor from an investment in a money market account denominated in U.S. dollars that accrues interest at the notional interest rate. The index rebalances on each index business day from among 15 underlying assets that have been categorized in the following asset classes: broad-based equities; fixed income; emerging markets; alternatives; commodities; inflation; and cash equivalent. The index attempts to track the positive price momentum in the underlying assets, subject to limitations on volatility and a minimum and maximum weight for each underlying asset and each asset class, each as described below.

Features of the index include:

daily rebalancing from among the 15 eligible underlying assets on each index business day (in this context, a base index rebalancing day) by calculating, for each day in the weight averaging period related to that base index rebalancing day, the combination of underlying assets that would have provided the highest historical return during three return look-back periods (nine months, six months and three months), subject to:

a limit of 5% on the degree of variation in the daily closing prices or closing level, as applicable, of the aggregate of such underlying assets over the related realized volatility look-back periods (the prior six months, three months and one month for the nine-month, six-month and three-month return look-back periods, respectively); and

a minimum and maximum weight for each underlying asset and each asset class; and  
the potential for daily total return index rebalancing into the money market position, based on whether the realized volatility of the underlying assets comprising the index exceeds the volatility cap of 6% for the applicable volatility cap period (the prior one month).

Analyzing realized volatility over three volatility look-back periods results in three potential portfolios of underlying assets (one for each return look-back period) for each day in the applicable weight averaging period. The weight of each underlying asset for a given day in a weight averaging period (the “target weight”) will equal the average of the weights of such underlying asset in the three potential portfolios while the weight of each underlying asset for the daily base index rebalancing will equal the average of such target weights. This daily rebalancing is referred to as the base index rebalancing and the resulting portfolio of index underlying assets comprise the base index effective after the close of business on a given day. The weight averaging period for any base index rebalancing day will be the period from (but excluding) the 22nd index business day on which no index market disruption event occurs or is continuing with respect to any underlying asset prior to such day to (and including) such day.

The value of the index is calculated in U.S. dollars on each index business day by reference to the performance of the total return index value net of the sum of the return on the notional interest rate in effect at that time plus 0.65% per annum (accruing daily). Any cash dividend paid on an index ETF is deemed to be reinvested in such index ETF and subject to subsequent changes in the value of the index ETF. In addition, any interest accrued on the money market position is similarly deemed to be reinvested on a daily basis in such money market position and subject to subsequent changes in the notional interest rate. The total return index value on each index business day is calculated by reference to the weighted performance of:



the base index, which is the weighted combination of underlying assets that comprise the index at the applicable time as a result of daily base index rebalancing; and  
any additional exposure to the money market position resulting from any daily total return index rebalancing.  
The underlying assets that comprise the base index as the result of daily base index rebalancing may include a combination of ETFs and the money market position, or solely ETFs. A daily total return index rebalancing will occur effective after the close of business on a given day if the realized volatility of the base index exceeds the volatility cap of 6% for the volatility cap period applicable to such index business day. As a result of a daily total return index rebalancing, the index will have exposure to the money market position even if the base index has no such exposure resulting from its daily base index rebalancing.

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For the purpose of the index:

an “eligible underlying asset” is one of the ETFs or the money market position that is eligible for inclusion in the index on an index business day;

an “eligible ETF” is one of the ETFs that is eligible for inclusion in the index on an index business day (when we refer to an “ETF” we mean an exchange-traded fund, which for purposes of this prospectus supplement includes the following exchange traded products: SPDR<sup>®</sup> S&P 500<sup>®</sup> ETF Trust and SPDR<sup>®</sup> Gold Trust);

an “index underlying asset” is an eligible underlying asset with a non-zero weighting on any index business day;

an “index ETF” is an ETF that is an eligible ETF with a non-zero weighting on any index business day; and

an “index business day” is a day on which the New York Stock Exchange is open for its regular trading session.

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Issuer:	GS Finance Corp.
Guarantor:	The Goldman Sachs Group, Inc.
Index:	GS Momentum Builder <sup>®</sup> Multi-Asset 5S ER Index (current Bloomberg symbol: “GSMBMA5S Index”), as published by the index sponsor (including any index calculation agent acting on the index sponsor’s behalf); see “The Index” on page S-40. Additional information about the index, including the index methodology, which may be amended from time to time, is available at the following website: <a href="http://solactive.com/indices/">solactive.com/indices/</a> . We are not incorporating by reference the website or any material it includes in this prospectus supplement
Face Amount:	\$ in the aggregate; each note will have a face amount of \$1,000
Trade Date:	Expected to be March 26, 2019
Settlement Date (set on the trade date):	Expected to be March 29, 2019
Determination Date (set on the trade date):	Expected to be December 26, 2023
Stated Maturity Date (set on the trade date):	Expected to be December 29, 2023
Initial Index Level:	To be determined on the trade date
Final Index Level:	The closing level of the index on the determination date
Upside Participation Rate (set on the trade date):	Expected to be between 225% and 245%
Index Return:	The quotient of (i) the final index level minus the initial index level divided by (ii) the initial index level, expressed as a percentage
CUSIP/ISIN	40056EYX0/US40056EYX02

The following table is provided for purposes of illustration only. It should not be taken as an indication or prediction of future investment results and is intended merely to illustrate the impact that various hypothetical closing levels of the index on the determination date could have on the payment at maturity assuming an upside participation rate of 225% and assuming all other variables remain constant. The actual performance of the index over the life of your notes, particularly on the determination date, as well as the amount payable on the stated maturity date, may bear little relation to the hypothetical examples shown below or on page S-15 or to the historical levels of the index shown elsewhere in this prospectus supplement. You should also refer to the historical index performance information and hypothetical performance data beginning on page S-51 of this prospectus supplement.

Hypothetical Final Index Level (as Percentage of Initial Index Level)	Hypothetical Cash Settlement Amount (as Percentage of Face Amount)
200.000%	325.000%
175.000%	268.750%
150.000%	212.500%
125.000%	156.250%
100.000%	100.000%

75.000%	100.000%
50.000%	100.000%
25.000%	100.000%
0.000%	100.000%

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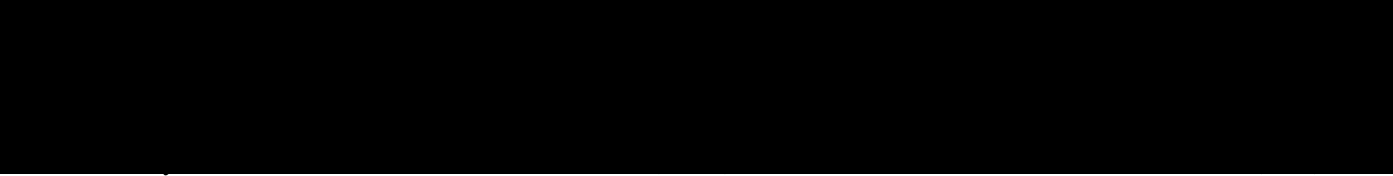
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The following chart and table provide a comparison between the index (using historical information and hypothetical data, as explained below) and certain asset classes (in each case, represented by a benchmark ETF or a benchmark index, which are distinct from the asset classes in which the 15 underlying assets have been categorized for purposes of this index) from August 29, 2008 to February 26, 2019. Benchmark ETF data and benchmark index data is based on the historical levels of the benchmark ETFs and benchmark indices, respectively. The historical index information from May 16, 2016 (the index launch date) to February 26, 2019 reflects the actual performance of the index. (In the chart, this historical index information can be found to the right of the vertical solid line marker.) The hypothetical index data from August 29, 2008 to May 15, 2016 is based on the historical levels of the eligible underlying assets, using the same methodology that is used to calculate the index. Please note that the hypothetical index data is presented from August 29, 2008 to minimize assumptions about the level of the iShares<sup>®</sup> Preferred and Income Securities ETF prior to November 29, 2007, which is the first date on which such ETF had a continuously published level. As a result, the following chart and table do not reflect the entirety of the global financial crisis, which had a severe and negative effect on certain of the benchmark ETFs, benchmark indices and eligible underlying assets and would have had a severe and negative effect on the index. Please also note that the benchmark ETFs and benchmark indices that are used to represent asset classes for purposes of the following table and chart may not be eligible underlying assets for purposes of the index and in some cases differ from the eligible underlying assets that are used to represent asset classes with the same or similar titles for purposes of the index. You should not take the historical index information, hypothetical index data or historical benchmark ETF and benchmark index data as an indication of the future performance of the index.





Effective Performance (1 Month)	1.09%	0.87%	4.93%	4.13%	3.20%
Effective Performance (6 Month)	-4.35%	1.11%	-3.94%	-10.72%	2.61%
Annualized* Performance (since August 2008)	4.18%	3.11%	5.63%	-11.65%	6.62%
Annualized* Realized Volatility (since August 2008)**	5.10%	4.86%	16.75%	22.62%	30.96%
Return over Risk (since August 2008)***	0.82	0.64	0.34	-0.51	0.21
Maximum Peak-to-Trough Drawdown****	-11.49%	-12.96%	-48.43%	-78.65%	-65.74%

\* Calculated on a per annum percentage basis.

\*\* Calculated on the same basis as realized volatility used in calculating the index.

\*\*\* Calculated by dividing the annualized performance by the annualized realized volatility since August 29, 2008.

\*\*\*\* The largest percentage decline experienced in the relevant measure from a previously occurring maximum level.



The following chart, which is based on historical information and hypothetical data, sets forth the daily allocation on each index business day between each asset class from August 29, 2008 to February 12, 2019. The historical index information from May 16, 2016 (the index launch date) to February 12, 2019 reflects the actual performance of the index. (In the chart, this historical information can be found to the right of the vertical solid line marker.) The hypothetical index data from August 29, 2008 to May 15, 2016 is based on the historical levels of the eligible underlying assets, using the same methodology that is used to calculate the index. You should not take the historical index information or hypothetical index data as an indication of the future performance of the index.



Please read the section entitled “Additional Risk Factors Specific to Your Notes” beginning on page S-18 of this prospectus supplement as well as the risks and considerations described in the accompanying prospectus dated July 10, 2017 and the accompanying prospectus supplement dated July 10, 2017.



## TERMS AND CONDITIONS

(Terms From Prospectus Supplement No. Incorporated Into Master Note No. 2)

These terms and conditions relate to prospectus supplement no. dated , 2019 of GS Finance Corp. and The Goldman Sachs Group, Inc. with respect to the issuance by GS Finance Corp. of its GS Momentum Builder® Multi-Asset 5S ER Index-Linked Notes due and the guarantee thereof by The Goldman Sachs Group, Inc.

The provisions below are hereby incorporated into master note no. 2, dated August 22, 2018. References herein to “this note” shall be deemed to refer to “this security” in such master note no. 2, dated August 22, 2018. Certain defined terms may not be capitalized in these terms and conditions even if they are capitalized in master note no. 2, dated August 22, 2018. Defined terms that are not defined in these terms and conditions shall have the meanings indicated in such master note no. 2, dated August 22, 2018, unless the context otherwise requires.

CUSIP / ISIN: 40056EYX0 / US40056EYX02

Company (Issuer): GS Finance Corp.

Guarantor: The Goldman Sachs Group, Inc.

Index: GS Momentum Builder® Multi-Asset 5S ER Index (current Bloomberg symbol: “GSMBMA5S Index”), or any successor index, as it may be modified, replaced or adjusted from time to time as provided herein

Face amount: \$ in the aggregate on the original issue date; the aggregate face amount may be increased if the company, at its sole option, decides to sell an additional amount on a date subsequent to the trade date.

Authorized denominations: \$1,000 or any integral multiple of \$1,000 in excess thereof

Principal amount: On the stated maturity date, the company will pay, for each \$1,000 of the outstanding face amount, an amount in cash equal to the cash settlement amount.

Cash settlement amount:

if the index return is positive, the sum of (i) \$1,000 plus (ii) the product of (a) \$1,000 times (b) the upside participation rate times (c) the index return; or

if the index return is zero or negative, \$1,000.

Initial index level (set on the trade date):

Final index level: the closing level of the index on the determination date, subject to adjustment as provided in “— Consequences of a non-trading day” and “— Discontinuance or modification of the index” below

Index return: the quotient of (i) the final index level minus the initial index level divided by (ii) the initial index level, expressed as a positive or negative percentage

Upside participation rate (set on the trade date): expected to be between 225% and 245%

Trade date: expected to be March 26, 2019

Original issue date (set on the trade date): expected to be March 29, 2019

Determination date (set on the trade date): expected to be December 26, 2023, unless the note calculation agent determines that such day is not a trading day. In that event, the determination date will be the first following trading day. In no event, however, will the determination date be postponed to a date later than the originally scheduled stated maturity date or, if the originally scheduled stated maturity date is not a business day, later than the first business day after the originally scheduled stated maturity date. If the determination date is postponed to the last possible day, but such day is not a trading day, that day will nevertheless be the determination date.

Stated maturity date (set on the trade date): expected to be December 29, 2023, unless that day is not a business day, in which case the stated maturity date will be the next following business day. If the determination date is postponed as described under “— Determination date” above, the stated maturity date will be postponed by the same number of business day(s) from but excluding the originally scheduled determination date to and including the actual determination date.

Closing level of the index: the official closing level of the index or any successor index published by the index sponsor (including any index calculation agent acting on the index sponsor’s behalf) on any trading day for the index

Level of the index: at any time on any trading day, the official level of the index or any successor index published by the index sponsor (including any index calculation agent acting on the index sponsor’s behalf) at such time on such trading day

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

Trading day: a day on which the index is calculated and published by the index sponsor (including any index calculation agent acting on the index sponsor's behalf). For the avoidance of doubt, if the index calculation agent determines that an index market disruption event occurs or is continuing on any day, such day will not be a trading day.

Index calculation agent: Solactive AG or any replacement index calculation agent

Index sponsor: at any time, the person or entity, including any successor sponsor, that determines and publishes the underlier as then in effect (current index sponsor: Goldman Sachs & Co. LLC ("GS&Co.")).

Successor index: any substitute index approved by the note calculation agent as a successor index as provided under "— Discontinuance or modification of the index" below

Index ETFs: with respect to the index, at any time, the exchange traded funds that comprise the index as then in effect, after giving effect to any additions, deletions or substitutions.

Consequences of a non-trading day: If a day that would otherwise be the determination date is not a trading day, then the determination date will be postponed as described under "— Determination date" above.

If the note calculation agent determines that the final index level is not available on the last possible determination date because of a non-trading day or for any other reason (other than as described under "— Discontinuance or modification of the index" below), then the note calculation agent will nevertheless determine the level of the index based on its assessment, made in its sole discretion, of the level of the index on that day.

Discontinuance or modification of the index: If the index sponsor discontinues publication of the index and the index sponsor or anyone else publishes a substitute index that the note calculation agent determines is comparable to the index, or if the note calculation agent designates a substitute index, then the note calculation agent will determine the cash settlement amount payable on the stated maturity date by reference to the substitute index. We refer to any substitute index approved by the note calculation agent as a successor index.

If the note calculation agent determines on the determination date that the publication of the index is discontinued and there is no successor index, the note calculation agent will determine the amount payable on the stated maturity date by a computation methodology that the note calculation agent determines will as closely as reasonably possible replicate the index.

If the note calculation agent determines that the index or the method of calculating the index is changed at any time in any respect — including any split or reverse split and any addition, deletion or substitution and any reweighting or rebalancing of the index or of the index ETFs and whether the change is made by the index sponsor under its existing policies or following a modification of those policies, is due to the publication of a successor index, is due to events affecting one or more of the index ETFs or its sponsor or is due to any other reason — and is not otherwise reflected in the level of the index by the index sponsor pursuant to the then-current index methodology of the index, then the note calculation agent will be permitted (but not required) to make such adjustments in the index or the method of its calculation as it believes are appropriate to ensure that the level of the index used to determine the cash settlement amount payable on the stated maturity date is equitable.

All determinations and adjustments to be made by the note calculation agent with respect to the index may be made by the note calculation agent in its sole discretion. The note calculation agent is not obligated to make any such adjustments.

Note calculation agent (calculation agent): GS&Co.

Default amount: If an event of default occurs and the maturity of your notes is accelerated, the company will pay the default amount in respect of the principal of your notes at the maturity, instead of the amount payable on the stated maturity date as described earlier. The default amount for your notes on any day (except as provided in the last sentence under “— Default quotation period” below) will be an amount, in the specified currency for the face amount of your notes, equal to the cost of having a qualified financial institution, of the kind and selected as described below, expressly assume all of our payment and other obligations with respect to your notes as of that day and as if no default or acceleration had occurred, or to undertake other obligations providing substantially equivalent economic value to you with respect to your notes. That cost will equal:

the lowest amount that a qualified financial institution would charge to effect this assumption or undertaking, plus the reasonable expenses, including reasonable attorneys’ fees, incurred by the holder of your notes in preparing any documentation necessary for this assumption or undertaking.

During the default quotation period for your notes, which is described below, the holder of the notes and/or the company may request a qualified financial institution to provide a quotation of the amount it would charge to effect this assumption or undertaking. If either party obtains a quotation, it must notify the other party in writing of the quotation. The amount referred to in the first bullet point above will equal the lowest — or, if there is only one, the only — quotation obtained, and as to which notice is so given, during the default quotation period. With respect to any quotation, however, the party not obtaining the quotation may object, on reasonable and significant grounds, to the assumption or undertaking by the

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qualified financial institution providing the quotation and notify the other party in writing of those grounds within two business days after the last day of the default quotation period, in which case that quotation will be disregarded in determining the default amount.

Default quotation period: The default quotation period is the period beginning on the day the default amount first becomes due and ending on the third business day after that day, unless:

no quotation of the kind referred to above is obtained, or  
every quotation of that kind obtained is objected to within five business days after the day the default amount first becomes due.

If either of these two events occurs, the default quotation period will continue until the third business day after the first business day on which prompt notice of a quotation is given as described above. If that quotation is objected to as described above within five business days after that first business day, however, the default quotation period will continue as described in the prior sentence and this sentence.

In any event, if the default quotation period and the subsequent two business day objection period have not ended before the determination date, then the default amount will equal the principal amount of your notes.

Qualified financial institutions: For the purpose of determining the default amount at any time, a qualified financial institution must be a financial institution organized under the laws of any jurisdiction in the United States of America, Europe or Japan, which at that time has outstanding debt obligations with a stated maturity of one year or less from the date of issue and that is, or whose securities are, rated either:

A-1 or higher by Standard & Poor's Ratings Services or any successor, or any other comparable rating then used by that rating agency, or

P-1 or higher by Moody's Investors Service, Inc. or any successor, or any other comparable rating then used by that rating agency.

Overdue principal rate: the effective Federal Funds rate

Defeasance: not applicable

## HYPOTHETICAL EXAMPLES

The following examples are provided for purposes of illustration only. They should not be taken as an indication or prediction of future investment results and are intended merely to illustrate the impact that the various hypothetical index levels on the determination date could have on the cash settlement amount at maturity assuming all other variables remain constant. The examples below are based on a range of index levels that are entirely hypothetical; no one can predict what the index level will be on any day throughout the life of your notes, and no one can predict what the final index level will be on the determination date. The index has been highly volatile in the past — meaning that the index level has changed considerably in relatively short periods — and its performance cannot be predicted for any future period. The information in the following examples reflects hypothetical rates of return on the offered notes assuming that they are purchased on the original issue date at the face amount and held to the stated maturity date. If you sell your notes in a secondary market prior to the stated maturity date, your return will depend upon the market value of your notes at the time of sale, which may be affected by a number of factors that are not reflected in the examples below such as the volatility of the index, the creditworthiness of GS Finance Corp., as issuer, and the creditworthiness of The Goldman Sachs Group, Inc., as guarantor. In addition, the estimated value of your notes at the time the terms of your notes are set on the trade date (as determined by reference to pricing models used by GS&Co.) is less than the original issue price of your notes. For more information on the estimated value of your notes, see “Additional Risk Factors Specific to Your Notes — The Estimated Value of Your Notes At the Time the Terms of Your Notes Are Set On the Trade Date (as Determined By Reference to Pricing Models Used By GS&Co.) Is Less Than the Original Issue Price Of Your Notes” on page S-18 of this prospectus supplement. The information in the examples also reflects the key terms and assumptions in the box below.

### Key Terms and Assumptions

Face amount \$1,000

Upside participation rate 225%

No non-trading day occurs on the originally scheduled determination date

No change in or affecting any of the eligible underlying assets or the method by which the index sponsor calculates the index

Notes purchased on original issue date and held to the stated maturity date

Moreover, we have not yet set the initial index level that will serve as the baseline for determining the index return and the amount that we will pay on your notes at maturity. We will not do so until the trade date. As a result, the initial index level may differ substantially from the index level prior to the trade date. For these reasons, the actual performance of the index over the life of your notes, as well as the amount payable at maturity may bear little relation to the hypothetical examples shown below or to the historical index performance information or hypothetical performance data shown elsewhere in this prospectus supplement. For information about the historical index performance levels and hypothetical performance data of the index during recent periods, see “The Index — Daily Closing Levels of the Index” on page S-52. Before investing in the offered notes, you should consult publicly available information to determine the level of the index between the date of this prospectus supplement and the date of your purchase of the offered notes.

Any rate of return you may earn on an investment in the notes may be lower than that which you could earn on a comparable investment in the index underlying assets.

Also, the hypothetical examples shown below do not take into account the effects of applicable taxes. Because of the U.S. tax treatment applicable to your notes, tax liabilities could affect the after-tax rate of return on your notes to a comparatively greater extent than the after-tax return on the index ETFs. The levels in the left column of the table below represent hypothetical final index levels and are expressed as percentages of the initial index level. The amounts in the right column represent the hypothetical cash settlement amounts, based on the corresponding hypothetical final index level (expressed as a percentage of the initial index level), and are expressed as percentages of the face amount of a note (rounded to the nearest one-thousandth of a percent). Thus, a hypothetical cash settlement amount of 100.000% means that the value of the cash payment that we would deliver for each \$1,000 of the outstanding face amount of the offered notes on the stated maturity date would equal 100.000% of the face amount of a note, based on the corresponding hypothetical final index level (expressed as a percentage of the initial index level) and the assumptions noted above.

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Hypothetical Final Index Level (as Percentage of Initial Index Level)	Hypothetical Cash Settlement Amount (as Percentage of Face Amount)
200.000%	325.000%
175.000%	268.750%
150.000%	212.500%
125.000%	156.250%
100.000%	100.000%
75.000%	100.000%
50.000%	100.000%
25.000%	100.000%
0.000%	100.000%

If, for example, the final index level were determined to be 25.000% of the initial index level, the cash settlement amount that we would deliver on your notes at maturity would be 100.000% of the face amount of your notes, as shown in the table above. As a result, if you purchased your notes on the original issue date and held them to the stated maturity date, you would receive no return on your investment. The following chart also shows a graphical illustration of the hypothetical cash settlement amounts (expressed as a percentage of the face amount of your notes) that we would pay on your notes on the stated maturity date, if the final index level (expressed as a percentage of the initial index level) were any of the hypothetical levels shown on the horizontal axis. The chart shows that any hypothetical final index level (expressed as a percentage of the initial index level) of less than 100.000% (the section left of the 100.000% marker on the horizontal axis) would result in a hypothetical cash settlement amount of 100.000% of the face amount of your notes.

The cash settlement amounts shown above are entirely hypothetical; they are based on closing levels of the index that may not be achieved on the determination date and on assumptions that may prove to be erroneous. The actual market value of your notes on the stated maturity date or at any other time, including any time you may wish to sell your notes, may bear little relation to the hypothetical cash settlement amounts shown above, and these amounts should not be viewed as an indication of the financial return on an investment in the offered notes. The hypothetical cash settlement amounts on notes held to the stated maturity date in the examples above assume you purchased your notes at their face amount and have not been adjusted to reflect the actual issue price you pay for your notes. The return on your investment



(whether positive or negative) in your notes will be affected by the amount you pay for your notes. If you purchase your notes for a price other than the face amount, the return on your investment will differ from, and may be significantly lower than, the hypothetical returns suggested by the above examples. Please read “Additional Risk Factors Specific to Your Notes — The Market Value of Your Notes May Be Influenced by Many Unpredictable Factors” on page S-19.

Payments on the notes are economically equivalent to the amounts that would be paid on a combination of other instruments. For example, payments on the notes are economically equivalent to a combination of an interest-bearing bond bought by the holder and one or more options entered into between the holder and us (with one or more implicit option premiums paid over time). The discussion in this paragraph does not modify or affect the terms of the notes or the U.S. federal income tax treatment of the notes, as described elsewhere in this prospectus supplement.

We cannot predict the actual final index level or what the market value of your notes will be on any particular trading day, nor can we predict the relationship between the index level and the market value of your notes at any time prior to the stated maturity date. The actual amount that you will receive at maturity and the rate of return on the offered notes will depend on the actual initial index level and the upside participation rate, which we will set on the trade date, and the actual final index level as determined by the note calculation agent as described above. Moreover, the assumptions on which the hypothetical returns are based may turn out to be inaccurate. Consequently, the amount of cash to be paid in respect of your notes on the stated maturity date may be very different from the information reflected in the examples above.

## ADDITIONAL RISK FACTORS SPECIFIC TO YOUR NOTES

An investment in your notes is subject to the risks described below, as well as the risks and considerations described in the accompanying prospectus and in the accompanying prospectus supplement. You should carefully review these risks and considerations as well as the terms of the notes described herein and in the accompanying prospectus and the accompanying prospectus supplement. Your notes are a riskier investment than ordinary debt securities. Also, your notes are not equivalent to investing directly in any eligible underlying asset or the assets held by any eligible ETF or in notes that bear interest at the notional interest rate. You should carefully consider whether the offered notes are suited to your particular circumstances. Although we have classified the risks described below into three categories (general risks, risks related to the index and risks related to the eligible ETFs), the order in which these categories are presented is not intended to signify any decreasing (or increasing) significance of these risks. You should read all of the risks described below and in the accompanying prospectus supplement and the accompanying prospectus.

### General Risks

#### The Estimated Value of Your Notes At the Time the Terms of Your Notes Are Set On the Trade Date (as Determined By Reference to Pricing Models Used By GS&Co.) Is Less Than the Original Issue Price Of Your Notes

The original issue price for your notes exceeds the estimated value of your notes as of the time the terms of your notes are set on the trade date, as determined by reference to GS&Co.'s pricing models and taking into account our credit spreads. Such estimated value on the trade date is set forth above under "Estimated Value of Your Notes" after the trade date, the estimated value as determined by reference to these models will be affected by changes in market conditions, the creditworthiness of GS Finance Corp., as issuer, the creditworthiness of The Goldman Sachs Group, Inc., as guarantor, and other relevant factors. The price at which GS&Co. would initially buy or sell your notes (if GS&Co. makes a market, which it is not obligated to do), and the value that GS&Co. will initially use for account statements and otherwise, also exceeds the estimated value of your notes as determined by reference to these models. As agreed by GS&Co. and the distribution participants, this excess (i.e., the additional amount described under "Estimated Value of Your Notes") will decline to zero on a straight line basis over the period from the date hereof through the applicable date set forth above under "Estimated Value of Your Notes". Thereafter, if GS&Co. buys or sells your notes it will do so at prices that reflect the estimated value determined by reference to such pricing models at that time. The price at which GS&Co. will buy or sell your notes at any time also will reflect its then current bid and ask spread for similar sized trades of structured notes. In estimating the value of your notes as of the time the terms of your notes are set on the trade date, as disclosed above under "Estimated Value of Your Notes", GS&Co.'s pricing models consider certain variables, including principally our credit spreads, interest rates (forecasted, current and historical rates), volatility, price-sensitivity analysis and the time to maturity of the notes. These pricing models are proprietary and rely in part on certain assumptions about future events, which may prove to be incorrect. As a result, the actual value you would receive if you sold your notes in the secondary market, if any, to others may differ, perhaps materially, from the estimated value of your notes determined by reference to our models due to, among other things, any differences in pricing models or assumptions used by others. See "— The Market Value of Your Notes May Be Influenced by Many Unpredictable Factors" below. The difference between the estimated value of your notes as of the time the terms of your notes are set on the trade date and the original issue price is a result of certain factors, including principally the underwriting discount and commissions, the expenses incurred in creating, documenting and marketing the notes, and an estimate of the difference between the amounts we pay to GS&Co. and the amounts GS&Co. pays to us in connection with your notes. We pay to GS&Co. amounts based on what we would pay to holders of a non-structured note with a similar maturity. In return for such payment, GS&Co. pays to us the amounts we owe under your notes. In addition to the factors discussed above, the value and quoted price of your notes at any time will reflect many factors and cannot be predicted. If GS&Co. makes a market in the notes, the price quoted by GS&Co. would reflect any changes in market conditions and other relevant factors, including any deterioration in our creditworthiness or perceived creditworthiness or the creditworthiness or perceived creditworthiness of The Goldman Sachs Group, Inc. These changes may adversely affect the value of your notes, including the price you may receive for your notes in any

market making transaction. To the extent that GS&Co. makes a market in the notes, the quoted price will reflect the estimated value determined by reference to GS&Co.'s pricing models at that time, plus or minus its then current bid and ask spread for similar sized trades of structured notes (and subject to the declining excess amount described above). Furthermore, if you sell your notes, you will likely be charged a commission for secondary market transactions, or the price will likely reflect a dealer discount. This commission or discount will further reduce the proceeds you would receive for your notes in a secondary market sale.

There is no assurance that GS&Co. or any other party will be willing to purchase your notes at any price and, in this regard, GS&Co. is not obligated to make a market in the notes. See “— Your Notes May Not Have an Active Trading Market” below.

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### The Notes Are Subject to the Credit Risk of the Issuer and the Guarantor

Although the return on the notes will be based on the performance of the index, the payment of any amount due on the notes is subject to the credit risk of GS Finance Corp., as issuer of the notes, and the credit risk of The Goldman Sachs Group, Inc., as guarantor of the notes. The notes are our unsecured obligations. Investors are dependent on our ability to pay all amounts due on the notes, and therefore investors are subject to our credit risk and to changes in the market's view of our creditworthiness. Similarly, investors are dependent on the ability of The Goldman Sachs Group, Inc., as guarantor of the notes, to pay all amounts due on the notes, and therefore are also subject to its credit risk and to changes in the market's view of its creditworthiness. See "Description of the Notes We May Offer — Information About Our Medium-Term Notes, Series E Program — How the Notes Rank Against Other Debt" on page S-4 of the accompanying prospectus supplement and "Description of Debt Securities We May Offer — Guarantee by The Goldman Sachs Group, Inc." on page 33 of the accompanying prospectus.

### You May Receive Only the Face Amount of Your Notes at Maturity

If the index return is zero or negative on the determination date, the return on your notes will be limited to the face amount. Even if the amount paid on your notes at maturity exceeds the face amount of your notes, the overall return you earn on your notes may be less than you would have earned by investing in a note with the same stated maturity that bears interest at the prevailing market rate.

### The Amount Payable on Your Notes Is Not Linked to the Level of the Index at Any Time Other than the Determination Date

The final index level will be based on the closing level of the index on the determination date (subject to adjustment as described elsewhere in this prospectus supplement). Therefore, if the closing level of the index dropped precipitously on the determination date, the cash settlement amount for your notes may be significantly less than it would have been had the cash settlement amount been linked to the closing level of the index prior to such drop in the level of the index. Although the actual level of the index on the stated maturity date or at other times during the life of your notes may be higher than the final index level, you will not benefit from the closing level of the index at any time other than on the determination date.

Also, the market price of your notes prior to the stated maturity date may be significantly lower than the purchase price you pay for your notes. Consequently, if you sell your notes before the stated maturity date, you may receive far less than the amount of your investment in the notes.

### Your Notes Do Not Bear Interest

You will not receive any interest payments on your notes. As a result, even if the cash settlement amount payable on your notes on the stated maturity date exceeds the face amount of your notes, the overall return you earn on your notes may be less than you would have earned by investing in a non-indexed debt security of comparable maturity that bears interest at a prevailing market rate.

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

When we refer to the market value of your notes, we mean the value that you could receive for your notes if you chose to sell them in the open market before the stated maturity date. A number of factors, many of which are beyond our control, will influence the market value of your notes, including:

the level of the index, including the initial index level

the volatility — i.e., the frequency and magnitude of changes — in the level of the index (even though the index attempts to limit volatility with daily rebalancing), the eligible underlying assets and the assets that comprise the eligible ETFs  
the market prices of the eligible ETFs

3-month USD LIBOR

economic, financial, regulatory, political, military and other events that affect markets generally and the assets held by the eligible ETFs, and which may affect the closing levels of the index

other interest rates and yield rates in the market

the time remaining until your notes mature and

our creditworthiness and the creditworthiness of The Goldman Sachs Group, Inc., whether actual or perceived, including actual or anticipated upgrades or downgrades in our credit ratings or the credit ratings of The Goldman Sachs Group, Inc., or changes in other credit measures.

These factors, and many other factors, will influence the price you will receive if you sell your notes before maturity, including the price you may receive for your notes in any market making transaction. If you sell your notes before maturity, you may receive less than the face amount of your notes.

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You cannot predict the future performance of the index based on its historical performance or on any hypothetical performance data. The actual performance of the index over the life of the notes, as well as the cash settlement amount payable on the stated maturity date, may bear little or no relation to the historical index performance information, hypothetical performance data or hypothetical return examples shown elsewhere in this prospectus supplement.

**If You Purchase Your Notes at a Premium to Face Amount, the Return on Your Investment Will Be Lower Than the Return on Notes Purchased at Face Amount and the Impact of Certain Key Terms of the Notes Will Be Negatively Affected**

The cash settlement amount will not be adjusted based on the issue price you pay for the notes. If you purchase notes at a price that differs from the face amount of the notes, then the return on your investment in such notes held to the stated maturity date will differ from, and may be substantially less than, the return on notes purchased at face amount. If you purchase your notes at a premium to face amount and hold them to the stated maturity date, the return on your investment in the notes will be lower than it would have been had you purchased the notes at face amount or a discount to face amount.

**Anticipated Hedging Activities by Goldman Sachs or Our Distributors May Negatively Impact Investors in the Notes and Cause Our Interests and Those of Our Clients and Counterparties to be Contrary to Those of Investors in the Notes**

Goldman Sachs expects to hedge our obligations under the notes by purchasing listed or over-the-counter options, futures and/or other instruments linked to the index and the eligible underlying assets. Goldman Sachs also expects to adjust the hedge by, among other things, purchasing or selling any of the foregoing, and perhaps other instruments linked to the index, the eligible underlying assets, 3-month USD LIBOR or assets held by the eligible ETFs, at any time and from time to time, and to unwind the hedge by selling any of the foregoing on or before the determination date for your notes. Alternatively, Goldman Sachs may hedge all or part of our obligations under the notes with unaffiliated distributors of the notes which we expect will undertake similar market activity. Goldman Sachs may also enter into, adjust and unwind hedging transactions relating to other index-linked notes whose returns are linked to the index, the eligible underlying assets, 3-month USD LIBOR or assets held by the eligible ETFs.

In addition to entering into such transactions itself, or distributors entering into such transactions, Goldman Sachs may structure such transactions for its clients or counterparties, or otherwise advise or assist clients or counterparties in entering into such transactions. These activities may be undertaken to achieve a variety of objectives, including: permitting other purchasers of the notes or other securities to hedge their investment in whole or in part; facilitating transactions for other clients or counterparties that may have business objectives or investment strategies that are inconsistent with or contrary to those of investors in the notes; hedging the exposure of Goldman Sachs to the notes including any interest in the notes that it reacquires or retains as part of the offering process, through its market-making activities or otherwise; enabling Goldman Sachs to comply with its internal risk limits or otherwise manage firmwide, business unit or product risk; and/or enabling Goldman Sachs to take directional views as to relevant markets on behalf of itself or its clients or counterparties that are inconsistent with or contrary to the views and objectives of the investors in the notes.

Any of these hedging or other activities may adversely affect the levels of the index — directly or indirectly by affecting the price of the eligible underlying assets — and therefore the market value of your notes and the amount we will pay on your notes, if any, at maturity. In addition, you should expect that these transactions will cause Goldman Sachs or its clients, counterparties or distributors to have economic interests and incentives that do not align with, and that may be directly contrary to, those of an investor in the notes. Neither Goldman Sachs nor any distributor will have any obligation to take, refrain from taking or cease taking any action with respect to these transactions based on the potential effect on an investor in the notes, and may receive substantial returns on hedging or other activities while the

value of your notes declines. In addition, if the distributor from which you purchase notes is to conduct hedging activities in connection with the notes, that distributor may otherwise profit in connection with such hedging activities and such profit, if any, will be in addition to the compensation that the distributor receives for the sale of the notes to you. You should be aware that the potential to earn fees in connection with hedging activities may create a further incentive for the distributor to sell the notes to you in addition to the compensation they would receive for the sale of the notes.

**Goldman Sachs' Trading and Investment Activities for its Own Account or for its Clients, Could Negatively Impact Investors in the Notes**

Goldman Sachs is a global investment banking, securities and investment management firm that provides a wide range of financial services to a substantial and diversified client base that includes corporations, financial institutions, governments and individuals. As such, it acts as an investor, investment banker, research provider, investment manager, investment advisor, market maker, trader, prime broker and lender. In those and other capacities, Goldman Sachs purchases, sells or holds a broad array of investments, actively trades securities, derivatives, loans, commodities, currencies, credit default swaps, indices, baskets and other financial instruments and products for its own account or for the accounts of its customers, and will have other direct or indirect interests, in the global fixed income, currency, commodity, equity, bank loan and other markets. Any of Goldman Sachs' financial market activities may, individually or in the aggregate, have an adverse effect on the market for your notes, and you should expect that the interests of Goldman Sachs or its clients or

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counterparties will at times be adverse to those of investors in the notes. Goldman Sachs regularly offers a wide array of securities, financial instruments and other products into the marketplace, including existing or new products that are similar to your notes, or similar or linked to the index or the eligible underlying assets. Investors in the notes should expect that Goldman Sachs will offer securities, financial instruments, and other products that will compete with the notes for liquidity, research coverage or otherwise.

#### Goldman Sachs' Market-Making Activities Could Negatively Impact Investors in the Notes

Goldman Sachs actively makes markets in and trades financial instruments for its own account (primarily as a market maker) and for the accounts of customers. These financial instruments include debt and equity securities, currencies, commodities, bank loans, indices, baskets and other products. Goldman Sachs' activities include, among other things, executing large block trades and taking long and short positions directly and indirectly, through derivative instruments or otherwise. The securities and instruments in which Goldman Sachs takes positions, or expects to take positions, include securities and instruments of the index or the eligible underlying assets, securities and instruments similar to or linked to the foregoing or the currencies in which they are denominated. Market making is an activity where Goldman Sachs buys and sells on behalf of customers, or for its own account, to satisfy the expected demand of customers. By its nature, market making involves facilitating transactions among market participants that have differing views of securities and instruments. As a result, you should expect that Goldman Sachs will take positions that are inconsistent with, or adverse to, the investment objectives of investors in the notes.

If Goldman Sachs becomes a holder of any eligible underlying asset in its capacity as a market-maker or otherwise, any actions that it takes in its capacity as securityholder, including voting or provision of consents, will not necessarily be aligned with, and may be inconsistent with, the interests of investors in the notes.

#### You Should Expect That Goldman Sachs Personnel Will Take Research Positions, or Otherwise Make Recommendations, Provide Investment Advice or Market Color or Encourage Trading Strategies That Might Negatively Impact Investors in the Notes

Goldman Sachs and its personnel, including its sales and trading, investment research and investment management personnel, regularly make investment recommendations, provide market color or trading ideas, or publish or express independent views in respect of a wide range of markets, issuers, securities and instruments. They regularly implement, or recommend to clients that they implement, various investment strategies relating to these markets, issuers, securities and instruments. These strategies include, for example, buying or selling credit protection against a default or other event involving an issuer or financial instrument. Any of these recommendations and views may be negative with respect to the index or the eligible underlying assets or other securities or instruments similar to or linked to the foregoing or result in trading strategies that have a negative impact on the market for any such securities or instruments, particularly in illiquid markets. In addition, you should expect that personnel in the trading and investing businesses of Goldman Sachs will have or develop independent views of the index or the eligible underlying assets, the relevant industry or other market trends, which may not be aligned with the views and objectives of investors in the notes.

#### Goldman Sachs Regularly Provides Services to, or Otherwise Has Business Relationships with, a Broad Client Base, Which May Include the Sponsors of the Index or the Eligible ETFs or Other Entities That Are Involved in the Transaction

Goldman Sachs regularly provides financial advisory, investment advisory and transactional services to a substantial and diversified client base, and you should assume that Goldman Sachs will, at present or in the future, provide such services or otherwise engage in transactions with, among others, the sponsors of the index or the eligible ETFs, or transact in securities or instruments or with parties that are directly or indirectly related to the foregoing. These



services could include making loans to or equity investments in those companies, providing financial advisory or other investment banking services, or issuing research reports. You should expect that Goldman Sachs, in providing such services, engaging in such transactions, or acting for its own account, may take actions that have direct or indirect effects on the index or the eligible ETFs, as applicable, and that such actions could be adverse to the interests of investors in the notes. In addition, in connection with these activities, certain Goldman Sachs personnel may have access to confidential material non-public information about these parties that would not be disclosed to Goldman Sachs employees that were not working on such transactions as Goldman Sachs has established internal information barriers that are designed to preserve the confidentiality of non-public information. Therefore, any such confidential material non-public information would not be shared with Goldman Sachs employees involved in structuring, selling or making markets in the notes or with investors in the notes. In this offering, as well as in all other circumstances in which Goldman Sachs receives any fees or other compensation in any form relating to services provided to or transactions with any other party, no accounting, offset or payment in respect of the notes will be required or made. Goldman Sachs will be entitled to retain all such fees and other amounts, and no fees or other compensation payable by any party or indirectly by holders of the notes will be reduced by reason of receipt by Goldman Sachs of any such other fees or other amounts.

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### The Offering of the Notes May Reduce an Existing Exposure of Goldman Sachs or Facilitate a Transaction or Position That Serves the Objectives of Goldman Sachs or Other Parties

A completed offering may reduce Goldman Sachs' existing exposure to the index or the eligible underlying assets, securities and instruments similar to or linked to the foregoing or the currencies in which they are denominated, including exposure gained through hedging transactions in anticipation of this offering. An offering of notes will effectively transfer a portion of Goldman Sachs' exposure (and indirectly transfer the exposure of Goldman Sachs' hedging or other counterparties) to investors in the notes.

The terms of the offering (including the selection of the index or the eligible underlying assets, and the establishment of other transaction terms) may have been selected in order to serve the investment or other objectives of Goldman Sachs or another client or counterparty of Goldman Sachs. In such a case, Goldman Sachs would typically receive the input of other parties that are involved in or otherwise have an interest in the offering, transactions hedged by the offering, or related transactions. The incentives of these other parties would normally differ from and in many cases be contrary to those of investors in the notes.

### Other Investors in the Notes May Not Have the Same Interests as You

Other investors in the notes are not required to take into account the interests of any other investor in exercising remedies or voting or other rights in their capacity as securityholders or in making requests or recommendations to Goldman Sachs as to the establishment of other transaction terms. The interests of other investors may, in some circumstances, be adverse to your interests. For example, certain investors may take short positions (directly or indirectly through derivative transactions) on assets that are the same or similar to your notes, the index or the eligible underlying assets or other similar securities, which may adversely impact the market for or value of your notes.

### You Have No Shareholder Rights or Rights to Receive Any Shares or Units of Any Eligible ETF, or Any Assets Held by Any Eligible ETF or the Money Market Position

Investing in the notes will not make you a holder of any shares or units of any eligible ETF or any asset held by any eligible ETF or the money market position. Investing in the notes will not cause you to have any voting rights, any rights to receive dividends or other distributions or any other rights with respect to any eligible ETF, the assets held by any eligible ETF or the money market position. Your notes will be paid in cash, and you will have no rights to receive delivery of any shares or units of any eligible ETF or the assets held by any eligible ETF.

### The Note Calculation Agent Will Have the Authority to Make Determinations That Could Affect the Market Value of Your Notes, When Your Notes Mature and the Amount You Receive at Maturity

As of the date of this prospectus supplement, we have appointed GS&Co. as the note calculation agent. As note calculation agent, GS&Co. will make all determinations and calculations relating to any amount payable on the note, which includes determinations regarding: the initial index level the final index level on the determination date, which we will use to determine the amount we must pay on the stated maturity date whether to postpone the determination date because of a non-trading day the determination date the stated maturity date business days trading days and the default amount. The note calculation agent also has discretion in making certain adjustments relating to a discontinuation or modification of the index. See "Terms and Conditions — Discontinuance or modification of the index" above. The exercise of this discretion by GS&Co. could adversely affect the value of your notes and may present GS&Co. with a conflict of interest. We may change the note calculation agent at any time without notice and GS&Co. may resign as note calculation agent at any time upon 60 days' written notice to GS Finance Corp.

Your Notes May Not Have an Active Trading Market

Your notes will not be listed or displayed on any securities exchange or included in any interdealer market quotation system, and there may be little or no secondary market for your notes. Even if a secondary market for your notes develops, it may not provide significant liquidity and we expect that transaction costs in any secondary market would be high. As a result, the difference between bid and asked prices for your notes in any secondary market could be substantial.

The Note Calculation Agent Can Postpone the Determination Date if a Non-Trading Day Occurs

If the note calculation agent determines that, on a day that would otherwise be the determination date, such day is not a trading day for the index, the determination date will be postponed until the first following trading day, subject to limitation on postponement as described under “Terms and Conditions — Determination date” on page S-12. If the determination date is postponed to the last possible day and such day is not a trading day, that day will nevertheless be the determination date. In such a case, the note calculation agent will determine the final index level based on the procedures described under “Terms and Conditions — Consequences of a non-trading day” on page S-12 of this prospectus supplement.

### We May Sell an Additional Aggregate Face Amount of the Notes at a Different Issue Price

At our sole option, we may decide to sell an additional aggregate face amount of the notes subsequent to the date of this prospectus supplement. The issue price of the notes in the subsequent sale may differ substantially (higher or lower) from the original issue price you paid as provided on the cover of this prospectus supplement.

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

Any insurance company or fiduciary of a pension plan or other employee benefit plan that is subject to the prohibited transaction rules of the Employee Retirement Income Security Act of 1974, as amended, which we call “ERISA”, or the Internal Revenue Code of 1986, as amended, including an IRA or a Keogh plan (or a governmental plan to which similar prohibitions apply), and that is considering purchasing the offered notes with the assets of the insurance company or the assets of such a plan, should consult with its counsel regarding whether the purchase or holding of the offered notes could become a “prohibited transaction” under ERISA, the Internal Revenue Code or any substantially similar prohibition in light of the representations a purchaser or holder in any of the above categories is deemed to make by purchasing and holding the offered notes. This is discussed in more detail under “Employee Retirement Income Security Act” on page S-153 of this prospectus supplement.

### Your Notes Will Be Treated as Debt Instruments Subject to Special Rules Governing Contingent Payment Debt Instruments for U.S. Federal Income Tax Purposes

The notes will 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 U.S. individual or taxable entity, you generally will be required to pay taxes on ordinary income from the notes over their term 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 amount on which you will be taxed prior to maturity and is neither a prediction nor a guarantee of what the actual yield will be. In addition, any gain you may recognize on the sale, exchange or maturity of the notes will be taxed as ordinary interest income. If you are a secondary purchaser of the notes, the tax consequences to you may be different. Please see “Supplemental Discussion of Federal Income Tax Consequences” below for a more detailed discussion. Please also consult your tax advisor concerning the U.S. federal income tax and any other applicable tax consequences to you of owning your notes in your particular circumstances.

### Foreign Account Tax Compliance Act (FATCA) Withholding May Apply to Payments on Your Notes, Including as a Result of the Failure of the Bank or Broker Through Which You Hold the Notes to Provide Information to Tax Authorities

Please see the discussion under “United States Taxation — Taxation of Debt Securities — Foreign Account Tax Compliance Act (FATCA) Withholding” in the accompanying prospectus for a description of the applicability of FATCA to payments made on your notes. The discussion in that section is hereby modified to reflect regulations proposed by the Treasury Department indicating its intent to eliminate the requirements under FATCA of withholding on gross proceeds from the sale, exchange, maturity or other disposition of relevant financial instruments. The Treasury Department has indicated that taxpayers may rely on these proposed regulations pending their finalization.

### Risks Related to the Index

The Index Measures the Performance of the Index Underlying Assets Less the Sum of the Return on the Notional Interest Rate Plus 0.65% Per Annum (Accruing Daily)

Your notes are linked to the index. The index measures the performance of the underlying assets included in the index plus, with respect to ETFs included in the index, dividends paid on such ETFs, less the sum of the return on the notional interest rate plus 0.65% per annum (accruing daily). Increases in the level of the notional interest rate may offset in whole or in part increases in the levels of the index underlying assets. As a result, any return on the index may be reduced or eliminated, which will have the effect of reducing the amount payable in respect of your notes. Generally speaking, on any day the index underlying assets must produce positive returns at least as great as the sum of the return on the notional interest rate plus 0.65% per annum (accruing daily) before the index will have a positive return. Historically, a significant portion of the index exposure has been to the money market position.

#### Your Investment in the Notes May Be Subject to Concentration Risks

The assets underlying an eligible underlying asset may represent a particular market or commodity sector, a particular geographic region or some other sector or asset class. As a result, your investment in the notes may be concentrated in a single sector or asset class even though there are maximum weights for each underlying asset and each asset class. This concentration could occur because of concentration in the investment goals of one or more eligible ETFs. As a result of base index rebalancing, the index may include exposure to as few as three eligible ETFs. However, as a result of total return index rebalancing, the exposure of the index at any time could be limited to the money market position. Although your investment in the notes will not result in the ownership or other direct interest in the assets held by the eligible ETFs, the return on your investment in the notes will be subject to certain risks similar to those associated with direct

investments in the market or commodity sector, geographic region, other sector or class represented by the relevant assets.

In addition, in connection with a base index rebalancing, the index may rebalance to include only index underlying assets that represent a limited number of markets or commodity sectors, geographic regions, other sectors or asset classes. If this were to occur, you will be subject to risks similar to those associated with direct investments in these markets or commodity sectors, geographic regions, other sectors or asset classes. These markets, geographic regions, sectors or asset classes may not be diversified.

#### You May Not Have Exposure to One or More of the Eligible Underlying Assets During the Term of the Notes

On any given index business day, the index is expected to have exposure to only a limited subset of the 15 eligible underlying assets (which, including the money market position, initially could be as few as four eligible underlying assets (i.e., as few as three eligible ETFs)) and you may not have any exposure to some of the 15 eligible underlying assets or asset classes during the entire term of the notes. As a result, you should not expect the index to provide a balanced exposure to all of the eligible underlying assets. Further, after a base index rebalancing, if, on such index business day, the realized volatility of the index underlying assets exceeds the volatility cap of 6% for the applicable volatility cap period, the index will ratably rebalance a portion of the exposure to the index ETFs into the money market position to reduce such realized volatility level. This may limit your exposure to the index ETFs during the term of the notes.

#### The Weight of Each Index Underlying Asset Reflects the Average of the Average of the Weights of Such Index Underlying Asset Over Three Potential Portfolios For Each Day in the Applicable Weight Averaging Period

To calculate the weight of each index underlying asset on a daily base index rebalancing day, three potential portfolios are first generated for each day in the applicable weight averaging period related to that base index rebalancing day. Each portfolio is calculated to reflect the highest historical return during three return look-back periods (nine months, six months and three months) subject to a limitation on realized volatility over three related realized volatility look-back periods (the prior six months, three months and one month for the nine-month, six-month and three-month return look-back periods, respectively) and subject to a minimum and maximum weight for each underlying asset and each asset class. Theoretically, all three potential portfolios could be the same, although this is unlikely. The weight of each index underlying asset for a given day in the applicable weight averaging period will equal the average of the weights of such index underlying asset in the three potential portfolios while the weight of each index underlying asset for the daily base index rebalancing will equal the average of such target weights. As a result, the weight of each index underlying asset will be different than it would have been had the index underlying assets been determined based on a single realized volatility look-back period. In addition, because the weight of each index underlying asset for each base index rebalancing day is the average of the average weights of such underlying asset across three realized volatility look-back periods for each day in the weight averaging period related to that base index rebalancing day, the impact of a low realized volatility for an index underlying asset for one realized volatility look-back period may be lessened by a higher realized volatility for that index underlying asset for one or both of the other realized volatility look-back periods. Also, such impact could be further lessened as a result of averaging over the weight averaging period. For a discussion of how the look-back periods are determined, see “The Index — What is realized volatility and how are the weights of the underlying assets influenced by it?”.

#### The Index May Not Successfully Capture Price Momentum and May Not Achieve its Target Volatility

The index attempts to track the positive price momentum in the eligible underlying assets. As such, on each daily base index rebalancing day, the index is rebalanced by first calculating, for each day in the applicable weight averaging period related to that base index rebalancing day, the portfolio of underlying assets that would have provided the

highest historical return during three return look-back periods (nine months, six months and three months) subject to the limitations on volatility and the minimum and maximum weights for each underlying asset and each asset class. However, there is no guarantee that trends existing in the preceding nine months, six months and three months, as applicable, or during the related realized volatility look-back periods over which volatility is evaluated will continue in the future. The trend of an eligible underlying asset may change at the end of any measurement period and such change may not be reflected in the return of the eligible underlying asset calculated over the return look-back period.

In addition, the volatility controls and maximum weightings may limit the index's ability to track price momentum. The index is different from an investment that seeks long-term exposure to a constant set of underlying assets. The index may fail to realize gains that could occur as a result of holding assets that have experienced price declines, but after which experience a sudden price spike. 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. No assurance can be given that the investment methodology used to construct the index will outperform any alternative index that might be constructed from the eligible underlying assets.

No assurance can be given that the investment methodology on which the index is based will be successful or that the index will outperform any alternative methodology that might be employed in respect of the eligible underlying assets.

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Furthermore, no assurance can be given that the index will achieve its 5% volatility target. The actual realized volatility of the index may be greater or less than 5%.

**Asset Class Maximum Weights Will in Many Cases Prevent All of the Eligible Underlying Assets in an Asset Class From Being Included in the Index at Their Underlying Asset Maximum Weights and May Also Prevent the Index From Having Exposure to Certain Types of Assets At Any Given Time**

The asset class maximum weights will in many cases prevent all of the eligible underlying assets in an asset class from being included in the index at their underlying asset maximum weights. This is due to the fact that, in many cases, the asset class maximum weight is less than the sum of the underlying asset maximum weights in that asset class.

In addition, the three underlying assets that are categorized in the alternatives asset class are not expected to be highly correlated. One underlying asset of that asset class seeks investment results that correspond generally to an index that currently tracks the performance of a select group of exchange-listed, U.S. dollar denominated preferred securities, hybrid securities and convertible preferred securities listed on the New York Stock Exchange or NASDAQ Capital Market, another underlying asset seeks investment results that correspond generally to an index that tracks the real estate sector of the U.S. equity market and the other underlying asset seeks investment results that correspond generally to an index that tracks biotechnology companies. However, each of these three underlying assets is subject to the same asset class maximum weight, which is less than the sum of the three underlying asset maximum weights that relate to these three underlying assets. Therefore, it is possible that the asset class maximum weight restriction for the alternatives asset class alone (as opposed to the other restrictions applicable to the index) will prevent all of these eligible ETFs from being index ETFs simultaneously, which would mean that the index might not have exposure to certain exchange-listed, U.S. dollar denominated U.S. preferred securities, hybrid securities and convertible preferred securities, the real estate sector of the U.S. equity market and biotechnology companies at the same time.

**Each Index Underlying Asset's Weight Is Limited by Its Underlying Asset Maximum Weight, Its Asset Class Maximum Weight and the Volatility Constraint**

On each daily base index rebalancing day, the index sets the weights for the eligible underlying assets to those weights that would have provided the highest historical return during three return look-back periods (nine months, six months and three months), subject to investment constraints on the maximum weights of each eligible underlying asset and each asset class, and the volatility constraint of 5%. These constraints, as well as the use of the weight averaging period, could lower your return versus an investment that was not limited as to the maximum weighting allotted to any one index underlying asset or asset class or was not subject to the 5% volatility target (or the daily volatility cap of 6%).

The index's 5% volatility target may result in a significant portion of the index's exposure being allocated to the money market position. The 5% volatility target represents an intended trade-off, in which some potential upside is given up in exchange for attempting to limit downside exposure in volatile markets. However, because the notes provide for the repayment of principal at maturity, the incremental benefit to holders of the notes from the index's 5% volatility target may be limited. In other words, the notes themselves limit exposure to decreases in the level of the index by providing for cash settlement amount that will be no less than the face amount of the notes. Due to this feature of the notes, the index's 5% volatility target, which attempts to reduce downside exposure to the eligible ETFs, may not be as beneficial as it otherwise may be (including, for example, when used with notes that provide for a cash settlement amount that could be less than the face amount) and the cost of the index's 5% volatility target, which is reflected in part in the above referenced trade-off, may not be desirable to you.

**If the Level of the Index Changes, the Market Value of Your Notes May Not Change in the Same Manner**



Your notes may trade quite differently from the performance of the index. Changes in the level of the index may not result in a comparable change in the market value of your notes. Even if the level of the index increases above the initial index level during the life of the notes, the market value of your notes may not increase by the same amount. We discuss some of the reasons for this disparity under “— The Market Value of Your Notes May Be Influenced by Many Unpredictable Factors” above.

#### Past Index Performance is No Guide to Future Performance

The actual performance of the index over the life of the notes, as well as the amount payable at maturity, may bear little relation to the historical index performance information, hypothetical performance data or hypothetical return examples set forth elsewhere in this prospectus supplement. We cannot predict the future performance of the index.

#### The Lower Performance of One Index Underlying Asset May Offset an Increase in the Other Index Underlying Assets

Your notes are linked to the index which rebalances daily among 15 eligible underlying assets. Declines in the level of one index underlying asset may offset increases in the levels of the other index underlying assets. As a result, any return on the index may be reduced or eliminated, which will have the effect of reducing the amount payable in respect of your notes at maturity.

Because Historical Returns and Realized Volatility Are Measured on an Aggregate Basis, Index Underlying Assets Could Include Eligible Underlying Assets With a High Realized Volatility and Could Exclude Eligible Underlying Assets With a High Historical Return

Because historical return and realized volatility are measured on an aggregate basis within each potential portfolio, index underlying assets could include eligible underlying assets with a high realized volatility and could exclude eligible underlying assets with a high historical return. An eligible underlying asset with a relatively high realized volatility may be included as an index underlying asset because its realized volatility is offset by another eligible underlying asset that is also included as an index underlying asset.

In addition, highly correlated eligible underlying assets may be excluded from a potential portfolio, in whole or in part, on a base index observation day, even if, on an independent basis, such eligible underlying assets have a relatively high nine-month, six-month and three-month historical return or relatively low realized volatility for the applicable volatility look-back period.

Correlation of Performances Among the Index Underlying Assets May Reduce the Performance of the Index

Performances of the index underlying assets may become highly correlated from time to time during the term of the notes, including, but not limited to, periods in which there is a substantial decline in a particular sector or asset type containing such correlated index underlying assets. High correlation among index underlying assets representing any one sector or asset type which has a substantial percentage weighting in the index during periods of negative returns could have an adverse effect on the level of the index.

The Policies of the Index Sponsor, Index Committee and Index Calculation Agent, and Changes That Affect the Index or the Eligible ETFs, Could Affect the Cash Settlement Amount on Your Notes and Their Market Value

The policies of the index sponsor, index committee and index calculation agent, as applicable, concerning the calculation of the level of the index, additions, deletions or substitutions of eligible underlying assets and the manner in which changes affecting the eligible underlying assets or, where applicable, their sponsors, such as stock dividends, reorganizations or mergers, are reflected in the level of the index could affect the level of the index and, therefore, the cash settlement amount on your notes at maturity and the market value of your notes prior to maturity.

As further described under “The Index” in this prospectus supplement, a comparable ETF may be selected by the index committee, if available, to replace an index ETF and/or eligible ETF. The replacement of any index ETF may have an adverse impact on the value of the index. The cash settlement amount on your notes and their market value could also be affected if the index sponsor, index committee or index calculation agent changes these policies, for example, by changing the manner in which it calculates the level of the index or if the index sponsor discontinues or suspends calculation or publication of the level of the index, in which case it may become difficult to determine the market value of your notes.

If events such as these occur on the determination date, the note calculation agent — which initially will be GS&Co., our affiliate — may determine the closing level of the index on the determination date — and thus the cash settlement amount on the stated maturity date — in a manner it considers appropriate, in its sole discretion.

The Index Calculation Agent Will Have Authority to Make Determinations that Could Affect the Value of Your Notes and the Amount You Receive at Maturity. The Goldman Sachs Group, Inc. Owns a Non-Controlling Interest in the Index Calculation Agent

The index sponsor has retained Solactive AG to serve as index calculation agent. As index calculation agent, Solactive AG calculates the value of the index and implements the methodology determined by the index committee. As further described under the “The Index” in this prospectus supplement, the index calculation agent (in certain cases in consultation with the index committee) has discretion with respect to determining index market disruption events, force majeure events, trading disruptions, exchange disruptions, index dislocations, interest rate disruption events, base index rebalancing days and total return index rebalancing days and with respect to making certain adjustments to the Eligible ETFs upon certain events such as dividend payments, returns of capital and stock splits. The exercise of this discretion by the index calculation agent could adversely affect the value of your notes.

The Goldman Sachs Group, Inc., our affiliate, owns a non-controlling interest in the index calculation agent.

#### As Index Sponsor, GS&Co. Can Replace the Index Calculation Agent at Any Time

The index sponsor has retained Solactive AG to serve as index calculation agent. The index calculation agent calculates the value of the index and implements the methodology determined by the index committee. The index sponsor can replace the index calculation agent at any time. In the event the index sponsor appoints a replacement index calculation agent, a public announcement will be made via press release. Any replacement of the index calculation agent may result in reporting delays and other disruptions.

#### The Index Calculation Agent Can Resign Upon Notification to the Index Sponsor

As index calculation agent, Solactive AG can resign upon 60 days' written notice to the index sponsor. In the event the index sponsor appoints a replacement index calculation agent, a public announcement will be made via press release. Any resignation by the index calculation agent may result in reporting delays and other disruptions.

#### The Index Weightings May Be Ratably Rebalanced into the Money Market Position on Any or All Days During the Term of the Notes

The index has a daily volatility control feature which can result in a rebalancing (daily total return index rebalancing) between the index ETFs and the money market position. This has the effect of reducing the exposure of the index to the performance of the index ETFs resulting from base index rebalancing by rebalancing a portion of the exposure into the money market position if the historical realized volatility of the index underlying assets for the applicable one-month volatility cap period (observed and calculated by the index calculation agent on each daily total return index rebalancing day) would otherwise exceed the volatility cap of 6%.

During a daily base index rebalancing on an index business day, there is no guarantee that the index will not be rebalanced so that the money market position represents 50% of the index (i.e., the maximum weight for both the cash equivalent asset class and the money market position). Further, there is no guarantee that on such index business day, after the base index rebalancing, the index will not be further rebalanced due to the daily volatility control feature (daily total return index rebalancing) so that the money market position represents 100% of the index. This is because the maximum weight for the cash equivalent asset class and the money market position do not apply to daily total return index rebalancing. Any rebalancing into the money market position will limit your return on the notes.

In addition, there is no guarantee that the 6% volatility cap will successfully reduce the volatility of the index or avoid any volatile movements of any index underlying asset. If there is a rapid and severe decline in the market price of the index underlying assets, the index may not rebalance into the money market position until the index has declined by a substantial amount.

#### The Index May Perform Poorly During Periods Characterized by Increased Short-Term Volatility

The index's methodology is based on momentum investing. Momentum investing strategies are effective at identifying the current market direction in trending markets. However, in non-trending 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 poorly in non-trending, "choppy" markets characterized by increased short-term volatility.

#### Index Market Disruption Events Could Affect the Level of the Index on Any Date

If a daily base index rebalancing day or a daily total return index rebalancing day must be effected on an index business day on which an index market disruption event occurs with respect to any index underlying asset, the index calculation agent shall then rebalance the index as described in "The Index — Could index market disruption events or corporate events impact the calculation of the index or a daily base index rebalancing or a daily total return index rebalancing by the index calculation agent?" herein. Any index market disruption event may have an adverse impact on the level of the index.

#### The Index Has a Limited Operating History

The notes are linked to the performance of the index, which was launched on May 16, 2016. Because the index has no index level history prior to that date, limited historical index level information will be available for you to consider in making an independent investigation of the index performance, which may make it difficult for you to make an informed decision with respect to the notes.

The hypothetical performance data prior to the launch of the index on May 16, 2016 refers to simulated performance data created by applying the index's calculation methodology to historical prices or rates of the underlying assets that comprise the index. Such simulated hypothetical performance data has been produced by the retroactive application of a back-tested methodology. No future performance of the index can be predicted based on the simulated hypothetical performance data or the historical index performance information described herein.

#### U.K. Regulators Will No Longer Persuade or Compel Banks to Submit Rates for Calculation of LIBOR After 2021; Interest Rate Benchmark May Be Discontinued

On July 27, 2017, the Chief Executive of the U.K. Financial Conduct Authority (FCA), which regulates LIBOR, announced that the FCA will no longer persuade or compel banks to submit rates for the calculation of LIBOR (which includes the 3-month USD LIBOR rate) after 2021. Such announcement indicates that the continuation of LIBOR on the current basis cannot and will not be guaranteed after 2021. Notwithstanding the foregoing, it appears highly likely that LIBOR will be discontinued or modified by 2021. It is not possible to predict the effect that this announcement or any such discontinuance or modification will have on the 3-month USD LIBOR rate, the index or your notes.

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In accordance with the index methodology, if the index committee determines on a USD LIBOR interest determination date that 3-month USD LIBOR has been discontinued, then the index committee shall replace 3-month USD LIBOR with a substitute or successor rate that it has determined in its sole discretion is most comparable to 3-month USD LIBOR, provided that if the index committee determines there is an industry-accepted successor rate, then the index committee shall use such successor rate. If the index committee has determined a substitute or successor rate in accordance with the foregoing, the index committee in its sole discretion may determine an alternative to London business day, USD LIBOR interest determination date and notional interest rate reset date to be used, and any other relevant methodology for calculating such substitute or successor rate, including any adjustment factor needed to make such substitute or successor rate comparable to 3-month USD LIBOR, in a manner that is consistent with industry-accepted practices for such substitute or successor rate. See “The Index — General Overview” on page S-40. As discussed above under “— The Index Measures the Performance of the Index Underlying Assets Less the Sum of the Return on the Notional Interest Rate Plus 0.65% Per Annum (Accruing Daily)”, changes in the level of the notional interest rate may offset changes in the levels of the index underlying assets. In addition, historically, a significant portion of the index exposure has been to the money market position, which reflects the notional returns accruing to a hypothetical investor from an investment in a money market account denominated in U.S. dollars that accrues interest at the notional interest rate. As a result, the discontinuance of 3-month USD LIBOR and the use of a substitute or successor rate may affect the performance of the index and the amount payable in respect of your notes.

Regulation and Reform of “Benchmarks”, Including LIBOR and Other Types of Benchmarks, May Cause such “Benchmarks” to Perform Differently Than in the Past, or to Disappear Entirely, or Have Other Consequences Which Cannot be Predicted

LIBOR and other interest rate, equity, foreign exchange rate and other types of indices which are deemed to be “benchmarks” are the subject of recent national, international and other regulatory guidance and proposals for reform.

Some of these reforms are already effective while others are still to be implemented. These reforms may cause such “benchmarks” to perform differently than in the past, or to disappear entirely, or have other consequences which cannot be predicted. Any such consequence could have a material adverse effect on your notes.

Any of the international, national or other proposals for reform or the general increased regulatory scrutiny of “benchmarks” could increase the costs and risks of administering or otherwise participating in the setting of a “benchmark” and complying with any such regulations or requirements. Such factors may have the effect of discouraging market participants from continuing to administer or contribute to certain “benchmarks”, trigger changes in the rules or methodologies used in certain “benchmarks” or lead to the disappearance of certain “benchmarks”. The disappearance of a “benchmark” or changes in the manner of administration of a “benchmark” could result in discretionary valuation by the index sponsor (including any index calculation agent acting on the index sponsor’s behalf) or the note calculation agent or other consequence in relation to your notes. Any such consequence could have a material adverse effect on the value of and return on your notes.

The Historical Levels of the Notional Interest Rate Are Not an Indication of the Future Levels of the Notional Interest Rate

In the past, the level of the notional interest rate (3-month USD LIBOR) has experienced significant fluctuations. You should note that historical levels, fluctuations and trends of the notional interest rate are not necessarily indicative of future levels. Any historical upward or downward trend in the notional interest rate is not an indication that the notional interest rate is more or less likely to increase or decrease at any time, and you should not take the historical levels of the notional interest rate as an indication of its future performance.

Risks Related to the Eligible ETFs

General risks related to the eligible ETFs

The Eligible ETFs Are Passively Managed To Track an Index and May Not Perform as Well as an Actively Managed Fund or Another Investment

The eligible ETFs are not actively managed and may be affected by a general decline in the assets tracked by their underlying indices. Each passively managed eligible ETF invests in assets included in, or representative of, the underlying index. These eligible ETFs' investment advisors do not attempt to take defensive positions under any market conditions, including during declining markets. This means, among other things, that the investment advisor typically will not sell a particular holding just because it is performing poorly. Instead, the ETF seeks to track the index regardless of whether the index level is increasing or decreasing. As a result, shares of the passively managed eligible ETFs may not perform as well as an investment in actively managed ETFs or a basket comprised solely of actively managed ETFs or some other investment that seeks to outperform a benchmark or market.

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Except to the Extent That The Goldman Sachs Group, Inc. is the Issuer of Equity, Debt Securities or Preferred Stock in an Underlying Index, There is No Affiliation Between Us and Any Issuer of Assets Held by Any Eligible ETF or Any Sponsor of Any Eligible ETF

The common stock of The Goldman Sachs Group, Inc. is one of the index stocks comprising the S&P 500<sup>®</sup> Index and debt securities and preferred stock of The Goldman Sachs Group, Inc. are part of the Markit iBoxx<sup>®</sup> USD Liquid Investment Grade Index and the iShares<sup>®</sup> Preferred and Income Securities ETF, respectively. GS&Co. and one or more of our other affiliates may act, from time to time, as authorized participants in the distribution of shares of eligible ETFs, and, at any time, may hold shares of eligible ETFs. We are not otherwise affiliated with the issuers of the assets held by the eligible ETFs, the underlying index sponsors or the eligible ETF sponsors or investment advisors. However, our affiliates may currently or from time to time in the future own securities of, or engage in business with, the eligible ETFs, their sponsors, their investment advisors, the sponsors of the underlying indexes or the issuers of assets held by the eligible ETFs. Nevertheless, neither we nor any of our affiliates has verified the accuracy or the completeness of any information about the eligible ETFs, the investment advisors or the issuers of assets held by the eligible ETFs, and we have consulted only publicly available sources of information about them. You, as an investor in the notes, should make your own investigation into the eligible ETFs, the investment advisors and the issuers of the assets held by the eligible ETFs. See “The Eligible Underlying Assets” below for additional information about the eligible ETFs.

None of the eligible ETF sponsors, the sponsors of the underlying indexes, the eligible ETFs’ investment advisors and the issuers of assets held by the eligible ETFs are involved in the offering of your notes in any way and none of them have any obligation of any sort with respect to your notes. Thus, none of the eligible ETF sponsors, the sponsors of the underlying indexes, the eligible ETFs’ investment advisors and the issuers of assets held by the eligible ETFs have any obligation to take your interests into consideration for any reason, including in taking any corporate actions that might adversely affect the level of an index or making any investment decision for the eligible ETFs.

The Policies of the Eligible ETF Sponsors and/or Investment Advisor, and the Policies of Any Sponsor of an Underlying Index Tracked by an Eligible ETF, Could Affect the Level of the Index

Any eligible ETF sponsor or investment advisor may from time to time be called upon to make certain decisions or judgments with respect to the implementation of the strategy of the eligible ETF’s investment advisor concerning additions, deletions or substitutions of securities or assets held by the eligible ETF, the manner in which changes affecting the underlying index, if any, are reflected in the eligible ETF, the means of executing trading on behalf of an eligible ETF, and the best means of tracking an underlying index, if any. The eligible ETF sponsor’s or investment advisor’s decisions or judgments could affect the market price of the shares of the eligible ETF and may adversely affect the level of the index.

In addition, the sponsor of an underlying index tracked by an eligible ETF is responsible for the design and maintenance of such underlying index. The policies of the sponsor of such underlying index concerning the calculation of the underlying index, including decisions regarding the addition, deletion or substitution of the assets included in the underlying index, could affect the level of the underlying index and, consequently, could affect the market price of shares of the eligible ETF and could adversely affect the level of the index, the amount payable on your notes and the market value of your notes.

There Are Risks Associated with the Eligible ETFs

Although all of the shares of the eligible ETFs are listed for trading on NYSE Arca, Inc. (NYSE Arca) or the NASDAQ Stock Market (NASDAQ) and a number of similar products have been traded on the NYSE Arca, NASDAQ or other securities exchanges for varying periods of time, there is no assurance that an active trading market



will continue for the eligible ETFs or that there will be liquidity in any such trading market.

Further, each eligible ETF is subject to custody risk, which refers to the risks in the process of clearing and settling trades and the holding of securities by local banks, agents and depositories. Low trading volumes and volatile prices in less developed markets make trades harder to complete and settle, and governments or trade groups may compel local agents to hold securities in designated depositories that are not subject to independent evaluation. The less developed a country's securities market is, the greater the likelihood of custody problems.

Further, under continuous listing standards adopted by NYSE Arca and NASDAQ, each eligible ETF will be required to confirm on an ongoing basis that the components of its underlying index satisfy the applicable listing requirements. In the event that an underlying index of an eligible ETF does not comply with the applicable listing requirements, such eligible ETF would be required to rectify such non-compliance by requesting that the applicable underlying index sponsor modify such underlying index, adopting a new underlying index or obtaining relief from the Securities and Exchange Commission. There can be no assurance that an underlying index sponsor would so modify such underlying index or that relief would be obtained from the Securities and Exchange Commission and, therefore, non-compliance with the continuous listing standards may result in an eligible ETF being delisted by the exchange on which it is currently listed.

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### The Eligible ETFs May Be Subject to Pricing Dislocations and Other Market Forces, Which May Adversely Affect the Level of the Index

Even if the net asset value of an eligible ETF's assets is increasing, the market price of its shares may not. Shares of an eligible ETF may trade in the secondary market at times when the eligible ETF does not accept orders to purchase or redeem shares. At such times, shares may trade in the secondary market with more significant premiums or discounts than might be experienced at times when the eligible ETF accepts purchase and redemption orders. Further, from time to time, an authorized participant, a third party investor, an eligible ETF advisor, an affiliate of an eligible ETF advisor or a fund may invest in an eligible ETF and hold its investment for a specific period of time in order to facilitate commencement of an eligible ETF's operations or for the eligible ETF to achieve size or scale, which could negatively impact such eligible ETF. In addition, shares of each eligible ETF trade at prices at, above or below the most recent net asset value of the ETF's assets. The trading prices of an eligible ETF's shares fluctuate continuously throughout trading hours based on market supply and demand rather than the net asset value. The trading prices of the eligible ETF's shares may deviate significantly from the ETF's net asset value during periods of market volatility, and disruptions due to creations and redemptions of the eligible ETF's shares by authorized participants (or disruptions due to the lack of authorized participants able to create or redeem the eligible ETF's shares) or the existence of extreme market volatility may result in trading prices for shares of the eligible ETF that differ significantly from its net asset value. If any of these dislocations were to occur, the level of the index, the amount payable on your notes and the market value of your notes may be adversely affected.

### The Values of the Eligible ETFs May Not Completely Track the Level of the Indices Underlying Such Eligible ETFs

Although the trading characteristics and valuations of the shares of an eligible ETF will usually mirror to some extent the characteristics and valuations of the underlying index, the value of the shares of an eligible ETF may not completely track the level of the underlying index. One of the common reasons this occurs is that an index is a theoretical financial calculation of the performance of certain assets, but an eligible ETF holds an actual investment portfolio. The value of a share of the eligible ETF may reflect transaction costs and fees incurred or imposed by the investment advisor of the eligible ETF as well as the costs to the ETF to buy and sell its assets. These costs and fees are not included in the calculation of the underlying index. Additionally, because an eligible ETF may not actually hold all of the assets that comprise the underlying index, and may invest in securities that are not part of the underlying index, the eligible ETF may not closely track the performance of the underlying index. Some additional reasons for these tracking differences are described under "The Eligible Underlying Assets" below. As a result of these tracking differences, the index may not perform as well as an investment linked directly to the underlying indices of the eligible ETFs.

### The Eligible ETFs May Be Subject to Global or Regional Financial Risks, Which May Adversely Affect the Level of the Index

Many of the eligible ETFs invest wholly or substantially in regionally-focused debt or equity securities. If a financial crisis occurs in a region, or if there is another global financial crisis such as the one experienced beginning in 2007/2008, any number (if not all) of the eligible ETFs may be severely affected, which may adversely affect the level of the index.

### Risks related to eligible ETFs holding foreign assets

(including the iShares<sup>®</sup> MSCI EAFE ETF, the iShares<sup>®</sup> MSCI Japan ETF, the iShares<sup>®</sup> iBoxx \$ High Yield Corporate Bond ETF, the iShares<sup>®</sup> iBoxx \$ Investment Grade Corporate Bond ETF, the iShares<sup>®</sup> Emerging Markets ETF and the iShares<sup>®</sup> Preferred and Income Securities ETF)

Your Notes Will Be Subject to Foreign Currency Exchange Rate Risk

Certain eligible ETFs hold assets that are denominated or trade in non-U.S. dollar currencies. The value of the assets held by such eligible ETFs that are denominated in non-U.S. dollar currencies may be adjusted to reflect their U.S. dollar value by converting the price of such assets from the non-U.S. dollar currency to U.S. dollars. Consequently, if the value of the U.S. dollar strengthens against the non-U.S. dollar currency in which an asset is denominated or trades, the market price of the eligible ETF's shares may not increase even if the non-dollar value of the asset held by the eligible ETF increases. This also may occur because the income received by the eligible ETF on its assets is adversely affected, in dollar terms, by the exchange rate.

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

- existing and expected rates of inflation;
- existing and expected interest rate levels;
- the balance of payments among countries;
- the extent of government surpluses or deficits in the relevant foreign country and the United States; and
- other financial, economic, military and political factors.

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

The market price of the notes and level of the index could also be adversely affected by delays in, or refusals to grant, any required governmental approval for conversions of a local currency and remittances abroad or other de facto restrictions on the repatriation of U.S. dollars.

#### Regulators Are Investigating Potential Manipulation of Published Currency Exchange Rates

It has been reported that the U.K. Financial Conduct Authority and regulators from other countries, including the United States, are in the process of investigating the potential manipulation of published currency exchange rates. If such manipulation has occurred or is continuing, certain published exchange rates may have been, or may be in the future, artificially lower (or higher) than they would otherwise have been. Any such manipulation could have an adverse impact on any payments on, and the value of, your notes and the trading market for your notes. In addition, we cannot predict whether any changes or reforms affecting the determination or publication of exchange rates or the supervision of currency trading will be implemented in connection with these investigations. Any such changes or reforms could also adversely impact your notes.

#### Even Though Currencies Trade Around-The-Clock, Your Notes Will Not

Certain eligible ETFs hold assets that are denominated or trade in non-U.S. dollar currencies and that are adjusted to reflect their U.S. dollar value. The interbank market in foreign currencies is a global, around-the-clock market. Therefore, the hours of trading for your notes, if any trading market develops, will not conform to the hours during which the currencies trade. Significant price and rate movements may take place in the underlying foreign currency exchange markets that will not be reflected immediately in the price of your notes. The possibility of these movements should be taken into account. There is no systematic reporting of last-sale information for foreign currencies. Reasonably current bid and offer information is available in certain brokers' offices, in bank foreign currency trading offices and to others who wish to subscribe for this information, but this information will not necessarily be reflected in the level of the index. There is no regulatory requirement that those quotations be firm or revised on a timely basis. The absence of last-sale information and the limited availability of quotations to individual investors may make it difficult for many investors to obtain timely, accurate data about the state of the underlying foreign currency exchange markets.

#### Intervention in the Foreign Currency Exchange Markets by the Countries Issuing Any Currency In Which an Asset Held by an Eligible ETF Trades or Is Denominated Could Adversely Affect the Level of the Index

Foreign currency exchange rates can be volatile and are affected by numerous factors specific to each foreign country. Foreign currency exchange rates can be fixed by the sovereign government, allowed to float within a range of exchange rates set by the government, or left to float freely. Governments, including those issuing the currencies in which the underlying assets held by the eligible ETFs trade or are denominated, use a variety of techniques, such as intervention by their central bank or imposition of regulatory controls or taxes, to affect the exchange rates of their respective currencies. Currency developments may occur in any of the countries issuing the currencies in which the underlying assets held by the eligible ETFs trade or are denominated. Often, these currency developments impact foreign currency exchange rates in ways that cannot be predicted.

Governments may also issue a new currency to replace an existing currency, fix the exchange rate or alter the exchange rate or relative exchange characteristics by devaluation or revaluation of a currency. Thus, a special risk in purchasing the notes is that the market price of certain of the eligible ETFs' shares and the income it receives from its assets, and therefore the index, could be affected by the actions of sovereign governments that could change or

interfere with previously freely determined currency valuations, fluctuations in response to other market forces and the movement of currencies across borders.

The note calculation agent is not obligated to make any offsetting adjustment or change in the event of any devaluation or revaluation or imposition of exchange or other regulatory controls or taxes or in the event of other developments affecting any eligible ETF or any asset held by an eligible ETF during the life of your notes.

Because certain eligible ETFs may convert the prices of underlying assets that trade in foreign currencies to their U.S. dollar equivalents or hold assets denominated in foreign currencies, a weakening in the exchange rate of any such foreign currency relative to the U.S. dollar may have an adverse effect on the level of the index.

#### Suspensions or Disruptions of Market Trading in One or More Foreign Currencies May Adversely Affect the Value of Your Notes

The foreign currency exchange markets are subject to temporary distortions or other disruptions due to various factors, including government regulation and intervention, the lack of liquidity in the markets and the participation of speculators. Because the eligible ETFs convert the prices of underlying assets that trade in foreign currencies to their U.S. dollar equivalents, circumstances could adversely affect the relevant foreign currency exchange rates and, therefore, the share price of certain of the eligible ETFs and the level of the index.

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## Your Investment in the Notes Will Be Subject to Risks Associated with Foreign Securities Markets

Certain eligible ETFs hold assets issued by foreign companies or entities. Investments in foreign securities markets involve particular risks. Any foreign securities market, and in particular emerging markets, in which assets held by the eligible ETFs trade may be less liquid, more volatile and affected by global or domestic market developments in a different way than are the U.S. securities market or other foreign securities markets. Both government intervention in a foreign securities market, either directly or indirectly, and cross-shareholdings in foreign companies, may affect trading prices and volumes in that market. Also, there is generally less publicly available information about foreign companies than about those U.S. companies that are subject to the reporting requirements of the U.S. Securities and Exchange Commission (SEC). Further, foreign companies are subject to accounting, auditing and financial reporting standards and requirements that differ from those applicable to U.S. reporting companies.

The prices of securities in a foreign country are subject to political, economic, financial and social factors that are unique to such foreign country's geographical region. These factors include: recent changes, or the possibility of future changes, in the applicable foreign government's economic and fiscal policies; the possible implementation of, or changes in, currency exchange laws or other laws or restrictions applicable to foreign companies or investments in foreign equity securities; fluctuations, or the possibility of fluctuations, in currency exchange rates; and the possibility of outbreaks of hostility, political instability, natural disaster or adverse public health developments. The United Kingdom has voted to leave the European Union (popularly known as "Brexit"). The effect of Brexit is uncertain, and Brexit has and may continue to contribute to volatility in the prices of securities of companies located in Europe and currency exchange rates, including the valuation of the euro and British pound in particular. Any one of these factors, or the combination of more than one of these factors, could negatively affect such foreign securities market and the price of securities therein. Further, geographical regions may react to global factors in different ways, which may cause the prices of securities in a foreign securities market to fluctuate in a way that differs from those of securities in the U.S. securities market or other foreign securities markets. Foreign economies may also differ from the U.S. economy in important respects, including growth of gross national product, rate of inflation, capital reinvestment, resources and self-sufficiency, which may have a positive or negative effect on foreign securities prices.

The eligible ETFs may hold assets that trade in countries considered to be emerging markets. Countries with emerging markets may have relatively less stable governments, may present the risks of nationalization of businesses, restrictions on foreign ownership and prohibitions on the repatriation of assets, and may have less protection of property rights than more developed countries. The economies of countries with emerging markets may be based on only a few industries, may be highly vulnerable to changes in local or global trade conditions, and may suffer from extreme and volatile debt burdens or inflation rates. Local securities markets may trade a small number of securities and may be unable to respond effectively to increases in trading volume, potentially making prompt liquidation of holdings difficult or impossible at times. It will also likely be more costly and difficult for an eligible ETF sponsor to enforce the laws or regulations of a foreign country or trading facility, and it is possible that the foreign country or trading facility may not have laws or regulations which adequately protect the rights and interests of investors in the assets included in such eligible ETFs. In particular, the iShares<sup>®</sup> MSCI Emerging Markets ETF invests in equity securities issued by foreign companies in countries that are considered emerging markets and the iShares<sup>®</sup> MSCI EAFE ETF and the iShares<sup>®</sup> MSCI Japan ETF invests in equity securities issued by foreign companies, many of which trade on foreign securities markets. The iShares<sup>®</sup> iBoxx \$ High Yield Corporate Bond ETF and the iShares<sup>®</sup> iBoxx \$ Investment Grade Corporate Bond ETF also may invest in foreign company debt securities so long as they are U.S.-dollar denominated.

In addition, because foreign exchanges may be open on days when the eligible ETFs are not traded, the value of the assets underlying such eligible ETFs may change on days when the exchanges on which the eligible ETFs are listed are closed. This could result in premiums or discounts to such eligible ETF's net asset value that may be greater than those experienced by eligible ETFs that do not hold foreign assets.

Risks related to eligible ETFs holding U.S. government debt securities

Your Investment is Subject to Concentration Risks

Certain of the eligible ETFs invest in U.S. Treasury bonds that are all obligations of the United States, including the iShares<sup>®</sup> 20+ Year Treasury Bond ETF, the iShares<sup>®</sup> 7-10 Year Treasury Bond ETF and the iShares<sup>®</sup> TIPS Bond ETF. In addition, the iShares<sup>®</sup> 20+ Year Treasury Bond ETF invests in securities with a similar remaining time to maturity. As a result, these eligible ETFs are concentrated in the performance of bonds issued by a single issuer and having the same general tenor and terms. Although your investment in the notes will not result in the ownership or other direct interest in the U.S. Treasury bonds held by any eligible ETF, the return on your investment in the notes will be subject to certain risks similar to those associated with direct investment in a U.S. Treasury bonds. This increases the risk that any downgrade of the credit ratings of the U.S. government from its current ratings, any increase in risk that the U.S. Treasury may default on its obligations by the market (whether for credit or legislative process reasons) or any other market events that create a decrease in demand for U.S. Treasury bonds would significantly adversely affect such eligible ETFs and may adversely affect the level of the index. In addition, to the extent that any such decrease in demand is more

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concentrated in particular U.S. Treasury bond maturities, the eligible ETFs that are concentrated in those maturities could be severely affected, which may adversely affect the level of the index.

#### ETFs Holding U.S. Government Bonds May Change in Unexpected Ways

The indexes to which ETFs holding U.S. Treasury bonds tend to be linked tend to have very limited public disclosure about the underlying indexes. The index sponsors of these indexes retain discretion to make changes to the indexes at any time. The lack of detailed information about the indexes and how their constituents may change in the future creates the risk that the indexes could change in the future to perform much differently from the way they would perform if such changes were not made. If the indexes are changed in unexpected ways, the ETFs holding such bonds would similarly change to better reflect the indexes. The performance of the ETFs holding such bonds could be adversely affected in that case, which could adversely affect your investment in the notes.

#### Risks related to eligible ETFs holding debt securities

##### Your Investment is Subject to Income Risk and Interest Rate Risk

The income of eligible ETFs that invest in debt securities, or “bonds,” may decline when interest rates fall. This decline can occur because the eligible ETF must invest in lower-yielding bonds as bonds in its portfolio fall outside the time to maturity limits required by the eligible ETF’s investment objective or are called, bonds in the underlying index are substituted or the eligible ETF otherwise needs to purchase additional bonds. In addition, an increase in interest rates may cause the value of the fixed rate bonds held by an eligible ETF to decrease, may lead to heightened volatility in the fixed income markets and may adversely affect the liquidity of certain fixed income bonds. Securities with longer durations tend to be more sensitive to interest rate changes, usually making them more volatile than securities with shorter durations. If any of these events occur, the shares of the eligible ETFs invested in bonds and the level of the index could be adversely affected.

##### Your Investment is Subject to Investment-Grade Credit Risk

Generally, the prices of debt securities are influenced by the creditworthiness of the issuers of those debt securities. The credit ratings of investment grade debt securities in particular may be downgraded to non-investment grade levels, which could lead to a significant decrease in the value of those debt securities and a lack of liquidity in the trading markets for those debt securities. If that occurs, the share price of the eligible ETFs holding the formerly investment-grade debt and level of the index may be adversely affected. The iShares® iBoxx \$ Investment Grade Corporate Bond ETF holds mostly, if not solely, investment grade securities.

#### Risks related to the iShares® 20+ Year Treasury Bond ETF

##### The iShares® 20+ Year Treasury Bond ETF Recently Changed the Index it Tracks

The iShares® 20+ Year Treasury Bond ETF will generally invest in the securities included in the index it tracks, but may invest in cash, cash equivalents and other securities not included in the index. Previously, the iShares® 20+ Year Treasury Bond ETF tracked the Barclays U.S. 20+ Year Treasury Bond Index, but, beginning on April 1, 2016, the iShares® 20+ Year Treasury Bond ETF began tracking the ICE U.S. Treasury 20+ Year Bond Index. Any historical information about the performance of the iShares® 20+ Year Treasury Bond ETF for any period before April 1, 2016 was during a period in which the iShares® 20+ Year Treasury Bond ETF tracked a different index, and therefore should not be considered information relevant to how the iShares® 20+ Year Treasury Bond ETF will perform as it tracks the ICE U.S. Treasury 20+ Year Bond Index. It is impossible to predict the effect the change in index will have on the iShares® 20+ Year Treasury Bond ETF.



The Index Which the iShares® 20+ Year Treasury Bond ETF Tracks Is a New Index Without a Historical Track Record

The ICE U.S. Treasury 20+ Year Bond Index was launched on December 31, 2015. Because it is a new index, it is impossible to predict how it, and therefore the iShares® 20+ Year Treasury Bond ETF, will perform. The index sponsor of the ICE U.S. Treasury 20+ Year Bond Index has published hypothetical historical information regarding the historical performance of ICE U.S. Treasury 20+ Year Bond Index prior to December 31, 2015. Because the ICE U.S. Treasury 20+ Year Bond Index was not published during those periods, these levels should not be relied upon when making your investment decision.

Risks related to the iShares® 7-10 Year Treasury Bond ETF

The iShares® 7-10 Year Treasury Bond ETF Recently Changed the Index it Tracks

The iShares® 7-10 Year Treasury Bond ETF will generally invest in the securities included in the index it tracks, but may invest in cash, cash equivalents and other securities not included in the index. Previously, the iShares® 7-10 Year Treasury Bond ETF tracked the Barclays U.S. 7-10 Year Treasury Bond Index, but, beginning on April 1, 2016, the iShares® 7-10 Year Treasury Bond ETF began tracking the ICE U.S. Treasury 7-10 Year Bond Index. Any historical performance of the iShares® 7-10 Year Treasury Bond ETF for any period before April 1, 2016 was during a period in

which the iShares® 7-10 Year Treasury Bond ETF tracked a different index, and therefore should not be considered information relevant to how the iShares® 7-10 Year Treasury Bond ETF will perform as it tracks the ICE U.S. Treasury 7-10 Year Bond Index. It is impossible to predict the effect the change in index will have on the iShares® 7-10 Year Treasury Bond ETF.

The Index Which the iShares® 7-10 Year Treasury Bond ETF Tracks Is a New Index Without a Historical Track Record

The ICE U.S. Treasury 7-10 Year Bond Index was launched on December 31, 2015. Because it is a new index, it is impossible to predict how it, and therefore the iShares® 7-10 Year Treasury Bond ETF, will perform. The index sponsor of the ICE U.S. Treasury 7-10 Year Bond Index has published hypothetical historical information regarding the historical performance of ICE U.S. Treasury 7-10 Year Bond Index prior to December 31, 2015. Because the ICE U.S. Treasury 7-10 Year Bond Index was not published during those periods, these levels should not be relied upon when making your investment decision.

Risks related to the iShares® Nasdaq Biotechnology ETF

The Sponsor of the Underlying Index Tracked by the iShares® Nasdaq Biotechnology ETF Retains Significant Control and Discretionary Decision-Making Over the Underlying Index, Which May Have an Adverse Effect on the Level of the Underlying Index and on Your Notes

Under the methodology document that governs the NASDAQ Biotechnology Index, which is the index underlying the iShares® Nasdaq Biotechnology ETF, the index sponsor of the NASDAQ Biotechnology Index retains the right, from time to time, to exercise reasonable discretion as it deems appropriate in order to ensure index integrity. Although it is unclear how and to what extent this discretion could or would be exercised, it is possible that it could be exercised by the index sponsor in a manner that adversely affects the level of the NASDAQ Biotechnology Index and therefore the iShares® Nasdaq Biotechnology ETF. The index sponsor of the NASDAQ Biotechnology Index is not obligated to, and will not, take account of your interests in exercising the discretion described above.

Risks related to the iShares® Preferred and Income Securities ETF

The iShares® Preferred and Income Securities ETF currently holds primarily preferred stock. Unlike interest payments on debt securities, dividend payments on a preferred stock typically must be declared by the issuer's board of directors. An issuer's board of directors is generally not under any obligation to pay a dividend (even if such dividends have accrued) and may suspend payment of dividends on a preferred stock at any time. In the event an issuer of preferred stock experiences economic difficulties, the issuer's preferred stock may lose substantial value due to the reduced likelihood that the issuer's board of directors will declare a dividend and the fact that the preferred stock may be subordinated to other securities of the same issuer. Certain additional risks associated with preferred stock could adversely affect the value of the iShares® Preferred and Income Securities ETF. Because many preferred stocks pay dividends at a fixed rate, their market price can be sensitive to changes in interest rates in a manner similar to bonds — that is, as interest rates rise, the value of any preferred stocks held by the iShares® Preferred and Income Securities ETF are likely to decline. To the extent that the iShares® Preferred and Income Securities ETF invests in fixed-rate preferred stocks, rising interest rates may cause the value of the iShares® Preferred and Income Securities ETF's investments to decline. In addition, because many preferred stocks allow holders to convert the preferred stock into common stock of the issuer, their market price can be sensitive to changes in the value of the issuer's common stock. To the extent that the iShares® Preferred and Income Securities ETF invests in convertible preferred stocks, declining common stock values may also cause the value of the iShares® Preferred and Income Securities ETF's investments to decline. There is a chance that the issuer of any preferred stock held by the iShares® Preferred and Income Securities ETF will have its ability to pay dividends deteriorate or will default (i.e., fail to make scheduled dividend payments on

the preferred stock or scheduled interest payments on other obligations of the issuer not held by the iShares® Preferred and Income Securities ETF), which would negatively affect the value of any such holding. Preferred stocks are subject to market volatility and the prices of preferred stocks will fluctuate based on market demand. Preferred stocks often have call features which allow the issuer to redeem the security at its discretion. If a preferred stock is redeemed by the issuer, it will be removed from the index the iShares® Preferred and Income Securities ETF currently tracks. The redemption of preferred stocks having a higher than average yield may cause a decrease in the yield of the iShares® Preferred and Income Securities ETF and the index it currently tracks.

The iShares® Preferred and Income Securities ETF Has, and in the Future May Have, Limited Historical Information Tracking Its Underlying Index

Prior to February 1, 2019, the iShares® Preferred and Income Securities ETF tracked the S&P U.S. Preferred Stock Index™ (the “prior index”). Effective February 1, 2019, the iShares® Preferred and Income Securities ETF replaced the prior index it tracked with the ICE Exchange-Listed Preferred & Hybrid Securities Transition Index (the “transition index”), which allocates exposure between the ICE US Listed Preferred Securities Index and the ICE Exchange-Listed Preferred & Hybrid Securities Index (the “new index”). It is expected that, on and after November 1, 2019, such ETF will track in full the new index. Any historical information about the performance of such ETF for any period before February 1, 2019 is during a period in which such ETF tracked a different underlying index, and therefore should not be considered

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information relevant to how such ETF will perform tracking the transition index or the new index. In addition, there can be no assurance that such ETF will not further change the underlying index it tracks in the future. See “The Eligible Underlying Assets — iShares® Preferred and Income Securities ETF” below for more information on the underlying index such ETF tracks.

#### Risks related to the iShares® TIPS Bond ETF

The iShares® TIPS Bond ETF includes inflation-protected bonds, which typically have lower yields than conventional fixed rate bonds because of their inflation adjustment feature. If inflation is low, the benefit received from the inflation-protected feature of the underlying bonds may not sufficiently compensate for this reduced yield. The performance of the iShares® TIPS Bond ETF is also affected by the Consumer Price Index (CPI). The Bureau of Labor Statistics (BLS) revises the calculation of CPI whenever there are significant changes in consumer buying habits or shifts in population distribution or demographics. The BLS monitors changing buying habits on an annual basis, and the census conducted every 10 years by the Census Bureau provides information that enables the BLS to reselect a new geographic sample that accurately reflects the current population distribution and other demographic factors. In addition, as a matter of policy, BLS continually researches improved statistical methods. Thus, even between major revisions, changes to the calculation of the CPI are made. Any of these changes may affect the performance of treasury inflation protected securities held by the iShares® TIPS Bond ETF, and therefore may adversely affect the index.

#### Risks related to the iShares® iBoxx \$ High Yield Corporate Bond ETF

The iShares® iBoxx \$ High Yield Corporate Bond ETF holds generally U.S. dollar-denominated liquid high yield corporate bonds, sometimes referred to as “junk” bonds. High yield bonds (rated below investment grade, which means a rating of BB+ or lower by S&P or Fitch and Ba1 or lower by Moody’s), compared to higher-rated securities of similar maturities, tend to have more volatile prices and increased price sensitivity to changing interest rates and to adverse economic and business developments, greater risk of loss due to default or declining credit quality, greater likelihood that adverse economic or company specific events will make the issuer of such bonds unable to make interest and/or principal payments, and greater susceptibility to negative market sentiments leading to depressed prices and decrease in liquidity. In addition, even under normal economic conditions, high yield bonds may be less liquid than higher rated fixed-income securities and judgment may play a greater role in valuing certain of the iShares® iBoxx \$ High Yield Corporate Bond ETF’s securities than is the case with securities trading in a more liquid market.

The companies that issue high yield bonds are often highly leveraged, and their ability to service their debt obligations during an economic downturn or periods of rising interest rates may be impaired. In addition, these companies may not have access to more traditional methods of financing and may be unable to repay debt at maturity by refinancing. The risk of loss due to default in payment of interest or principal by these issuers is significantly greater than with higher quality securities because medium and lower quality securities generally are unsecured and subordinated to senior debt. Default, or the market’s perception that a high yield issuer is likely to default, could reduce the value and liquidity of the issuer’s securities.

#### Risks related to the iShares® U.S. Real Estate ETF

The iShares® U.S. Real Estate ETF invests in shares of companies that directly or indirectly invest in real estate. The performance of the real estate industry is affected by multiple factors, including general economic and political conditions, the availability of financing for real estate, governmental actions that affect real estate, liquidity in the real estate market and interest rates. The value of shares of companies that invest in real estate and the performance of the iShares® U.S. Real Estate ETF will be negatively affected by a downturn in the real estate industry and may remain flat or decrease in periods of low growth. In addition, real estate markets tend to be local or regional, and an increase

in one area may not offset a downturn in another area. Further, the iShares® U.S. Real Estate ETF invests in real estate investment trusts, the performance of which is subject to concentration and management risks similar to those to which the eligible ETFs are subject.

#### Risks related to SPDR® S&P® Oil & Gas Exploration & Production ETF

#### The SPDR® S&P® Oil & Gas Exploration & Production ETF is Concentrated in Oil & Gas Companies and Does Not Provide Diversified Exposure

The SPDR® S&P® Oil & Gas Exploration & Production ETF is not diversified. The SPDR® S&P® Oil & Gas Exploration & Production ETF's assets will be concentrated in oil and gas companies, which means the SPDR® S&P® Oil & Gas Exploration & Production ETF is more likely to be more adversely affected by any negative performance of oil and gas companies than an ETF that has more diversified holdings across a number of sectors. Oil and gas companies develop and produce crude oil and natural gas and provide drilling and other energy resources production and distribution related services. Stock prices for these types of companies are affected by supply and demand both for their specific product or service and for energy products in general. The price of oil and gas, exploration and production spending, government regulation, world events and economic conditions will likewise affect the performance of these companies. Correspondingly, securities of companies in the energy field are subject to swift price and supply fluctuations caused by events relating to international politics, energy conservation, the success of exploration projects, and tax and other

governmental regulatory policies. Weak demand for the companies' products or services or for energy products and services in general, as well as negative developments in these other areas, would adversely impact the performance of the SPDR<sup>®</sup> S&P<sup>®</sup> Oil & Gas Exploration & Production ETF. For example, the SPDR<sup>®</sup> S&P<sup>®</sup> Oil & Gas Exploration & Production ETF suffered a significant negative performance for each of the years 2014 and 2015 primarily due to negative developments in the oil & gas sector, while the broader S&P<sup>®</sup> 500 index achieved a positive return for each of the same periods. In addition, oil and gas exploration and production can be significantly affected by natural disasters as well as changes in exchange rates, interest rates, government regulation, world events and economic conditions. Companies in the oil & gas sector may also be at risk for environmental damage claims.

#### Risks related to SPDR<sup>®</sup> Gold Trust

##### Termination or Liquidation of the SPDR<sup>®</sup> Gold Trust Could Adversely Affect the Value of the Index

The SPDR<sup>®</sup> Gold Trust is a Delaware statutory trust. The trust may be required to terminate and liquidate at a time that is disadvantageous to you. If the trust is required to terminate and liquidate, such termination and liquidation could occur at a time when the price of gold is lower than the price of gold at the time when you purchased your notes, which could have an adverse impact on the level of the index.

##### Your Investment is Subject to Concentration Risks

The SPDR<sup>®</sup> Gold Trust is concentrated in a single commodity. As a result, the performance of the SPDR<sup>®</sup> Gold Trust will be concentrated in the performance of that specific commodity. Although your investment in the notes will not result in the ownership or other direct interest in the commodity held (directly or indirectly) by the SPDR<sup>®</sup> Gold Trust, the return on your investment in the notes will be subject to certain risks similar to those associated with direct investment in that commodity. This increases the risk that any market events that create a decrease in demand for or the trading price of the commodity would significantly adversely affect the SPDR<sup>®</sup> Gold Trust and could have an adverse impact on the level of the index.

##### Fees and Expenses Payable by the SPDR<sup>®</sup> Gold Trust Are Charged Regardless of Profitability and May Result in a Depletion of its Assets

The SPDR<sup>®</sup> Gold Trust is subject to fees and expenses, which are payable irrespective of profitability. Interest earned on the assets posted as collateral is paid to the SPDR<sup>®</sup> Gold Trust and is used to pay fees and expenses. A prolonged decline in interest rates could materially affect the amount of interest paid to the SPDR<sup>®</sup> Gold Trust. In the case of either an extraordinary expense and/or insufficient interest income to cover ordinary expenses, the SPDR<sup>®</sup> Gold Trust could be forced to liquidate its positions in gold to pay such expenses.

##### Legal and Regulatory Changes Could Adversely Affect the Level of the Index

The Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank), which effected substantial changes to the regulation of the futures and over-the-counter (OTC) derivatives markets, was enacted in July 2010. Dodd-Frank requires regulators, including the Commodity Futures Trading Commission (CFTC), to adopt regulations to implement many of the requirements of the legislation. While the CFTC has adopted many of the required regulations, a number of them have only recently become effective, and certain requirements remain to be finalized. The ultimate impact of the regulatory scheme, therefore, cannot yet be fully determined. Under Dodd-Frank, the CFTC approved a final rule to impose limits on the size of positions that can be held by market participants in futures and OTC derivatives on physical commodities. Those rules were challenged in federal court by industry groups and were vacated by a decision of the court in 2012. While the CFTC subsequently proposed new rules that have not yet been adopted governing position limits, and has recently adopted final rules governing the aggregation of positions by

market participants under common control and by trading managers, their ultimate scope and impact, as well as the content, scope or impact of other CFTC rules, cannot be conclusively determined at present, and these limits could restrict the ability of certain market participants to participate in the commodities, futures and swap markets and markets for other OTC derivatives on physical commodities to the extent and at the levels that they have in the past. These factors may also have the effect of reducing liquidity and increasing costs in these markets as well as affecting the structure of the markets in other ways.

In addition, these legislative and regulatory changes have increased, and will continue to increase, the level of regulation of markets and market participants, and therefore the costs of participating in the commodities, futures and OTC derivatives markets. Without limitation, these changes require many OTC derivatives transactions to be executed on regulated exchanges or trading platforms and cleared through regulated clearing houses. Swap dealers (as defined by the CFTC) are also required to be registered and are subject to various regulatory requirements, including, but not limited to, margin, recordkeeping, reporting and various business conduct requirements, as well as proposed minimum financial capital requirements. These legislative and regulatory changes, and the resulting increased costs and regulatory oversight requirements, could result in market participants being required to, or deciding to, limit their trading activities, which could cause reductions in market liquidity and increases in market volatility. In addition, transaction costs incurred by market participants are likely to be higher than in the past, reflecting the costs of compliance with the new regulations. These consequences could adversely affect the level of the index, which could in turn adversely affect the return on and value of your notes.

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In addition, other regulatory bodies have passed or proposed, or may propose in the future, legislation similar to that proposed by Dodd-Frank or other legislation containing other restrictions that could adversely impact the liquidity of and increase costs of participating in the commodities markets. For example, the European Union (“EU”) Markets in Financial Instruments Directive (Directive 2014/65/EU) and Markets in Financial Instruments Regulation (Regulation (EU) No 600/2014) (together “MiFID II”), which has applied since January 3, 2018, governs the provision of investment services and activities in relation to, as well as the organized trading of, financial instruments such as shares, bonds, units in collective investment schemes and derivatives. In particular, MiFID II requires EU Member States to apply position limits to the size of a net position which a person can hold at any time in commodity derivatives traded on EU trading venues and in “economically equivalent” OTC contracts. By way of further example, the European Market Infrastructure Regulation (Regulation (EU) No 648/2012) (“EMIR”) introduced certain requirements in respect of OTC derivatives including: (i) the mandatory clearing of OTC derivative contracts declared subject to the clearing obligation; (ii) risk mitigation techniques in respect of uncleared OTC derivative contracts, including the mandatory margining of uncleared OTC derivative contracts; and (iii) reporting and recordkeeping requirements in respect of all derivative contracts. In the event that the requirements under EMIR and MiFID II apply, these are expected to increase the cost of transacting derivatives.

#### Ongoing Commodities-Related Regulatory Investigations And Private Litigation Could Affect Prices for Commodities, Which Could Adversely Affect Your Notes

An increased focus on price setting and trading prices by regulators and exchanges recently have resulted in a number of changes to the ways in which prices are determined, including prices for commodities. This increased focus also resulted in the publication of standards for benchmark setting by the International Organization of Securities Commissions. Investigations by regulatory authorities, enforcement actions and criminal proceedings in the United States and around the world, and private litigation regarding potential direct and indirect manipulation of the trading prices of certain commodities, are ongoing against a number of firms.

These ongoing investigations, actions, proceedings and litigations may result in further review by exchanges and regulators of the methods by which commodities prices are determined and the manner in which commodities are traded and changes to those methods. In addition, changes to other commodity-related activities, such as storage facilities and delivery methods, may also occur. If any of these changes occur, the price of the commodity to which your notes may be linked may be affected, which may thereby adversely affect the level of the index and your notes.

In addition, if alleged trading price manipulation or other alleged conduct that may have artificially affected prices has occurred or is continuing, certain published commodity prices (including historical prices) may have been, or may be in the future, artificially lower (or higher) than they would otherwise have been. In particular, the historical trading information of the commodity to which your notes may be linked may be incorrect and, as a result, may not be representative of the prices or changes in prices or the volatility of the commodity to which your notes may be linked. In the future, any such artificially lower (or higher) prices could have an adverse impact on the relevant commodities or commodity contracts and any payments on, and the value of, your notes and the trading market for your notes.

#### Potential Discrepancies, or Future Changes, in the Calculation of the LBMA Gold Price PM Could Have an Adverse Effect on the Value of the SPDR® Gold Trust Shares

The value of the gold held by the SPDR® Gold Trust is determined using the LBMA Gold Price PM, which is the LBMA Gold Price determined at 3:00 pm (London time) on the particular day. ICE Benchmark Administration (IBA) is the administrator for the LBMA Gold Price PM, and IBA provides the auction platform, methodology as well as overall independent administration and governance for the LBMA Gold Price. As the administrator of the LBMA Gold Price, IBA operates an electronic and tradeable auction process. The price formation is in U.S. dollars only and prices are set twice daily at 10:30 a.m. and 3:00 p.m. (London time). Within the process, aggregated gold bids and



offers are updated in real-time with the imbalance calculated and the price updated every 30 seconds until the buy and sell orders are matched.

If the LBMA Gold Price PM does not prove to be an accurate benchmark, and the LBMA Gold Price PM varies materially from the price of gold determined by other mechanisms, the net asset value of the SPDR<sup>®</sup> Gold Trust and, therefore, the value of an investment in the shares could be adversely impacted. Further, the calculation of the LBMA Gold Price PM is not an exact process, but is based upon a procedure of matching orders from participants in the auction process and their customers to sell gold with orders from participants in the auction process and their customers to buy gold at particular prices. The LBMA Gold Price PM does not therefore purport to reflect each buyer or seller of gold in the market, nor does it purport to set a definitive price for gold at which all orders for sale or purchase will take place on that particular day or time. All orders placed into the auction process by the participants will be executed on the basis of the price determined pursuant to the LBMA Gold Price PM auction process. Any future developments or changes in the determination of the LBMA Gold price PM, to the extent they have a material impact on the LBMA Gold Price PM, could adversely impact the net asset value of the SPDR<sup>®</sup> Gold Trust and the value of the shares and therefore the index.

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The Value of the Shares of SPDR® Gold Trust Relates Directly to the Value of the Gold Held by SPDR® Gold Trust and Fluctuations in the Price of Gold Could Materially Adversely Affect an Investment in SPDR® Gold Trust's Shares

The shares are designed to mirror as closely as possible the performance of the price of gold, and the value of the shares relates directly to the value of the gold held by SPDR® Gold Trust, less the trust's liabilities (including estimated accrued expenses). The price of gold has fluctuated widely over the past several years. Several factors may affect the price of gold, including, but not limited to:

global supply and demand of gold, which may be influenced by such factors as gold's uses in jewelry, technology and industrial applications, purchases made by investors in the form of bars, coins and other gold products, forward selling by gold producers, purchases made by gold producers to unwind their hedge positions, central bank purchases and sales, and production and cost levels in the major gold-producing countries such as South Africa, the United States and Australia;

interest rates;

investors' expectations concerning inflation rates;

currency exchange rates;

investment and trading activities of hedge funds and commodity funds;

global or regional political, economic or financial events and situations, especially those unexpected in nature; and other economic variables such as income growth, economic output and monetary policies.

If gold markets continue to be subject to sharp fluctuations, this may result in potential losses if the index allocates away from shares at a time when the price of gold is lower. In addition, gold markets have historically experienced extended periods of flat or declining prices, in addition to sharp fluctuations.

The Amount of Gold Represented by the Shares of SPDR® Gold Trust Will Continue to Be Reduced During the Life of SPDR® Gold Trust Due to SPDR® Gold Trust's Expenses

Each outstanding share represents a fractional, undivided interest in the gold held by SPDR® Gold Trust. The SPDR® Gold Trust does not generate any income and regularly sells gold to pay for its ongoing expenses. Therefore, the amount of gold represented by each share has gradually declined over time. This is also true with respect to shares that are issued in exchange for additional deposits of gold into the SPDR® Gold Trust, as the amount of gold required to create shares proportionately reflects the amount of gold represented by the shares outstanding at the time of creation. Assuming a constant gold price, the trading price of the shares is expected to gradually decline relative to the price of gold as the amount of gold represented by the shares gradually declines.

## USE OF PROCEEDS

We intend to lend the net proceeds from the sale of the offered notes to The Goldman Sachs Group, Inc. or its affiliates. The Goldman Sachs Group, Inc. expects to use the proceeds from such loans for the purposes we describe in the accompanying prospectus under “Use of Proceeds”. We or our affiliates may also use those proceeds in transactions intended to hedge our obligations under the offered notes as described below.

## HEDGING

In anticipation of the sale of the offered notes, we and/or our affiliates expect to enter into cash-settled hedging transactions involving purchases of listed or over-the-counter options, futures and/or other instruments linked to the index, the eligible underlying assets or 3-month USD LIBOR on or before the trade date. In addition, from time to time after we issue the offered notes, we and/or our affiliates expect to enter into additional hedging transactions and to unwind those we have entered into, in connection with the offered notes and perhaps in connection with other index-linked notes we issue, some of which may have returns linked to the index, the eligible underlying assets or 3-month USD LIBOR. Consequently, with regard to your notes, from time to time, we and/or our affiliates:

expect to acquire, or dispose of, cash-settled positions in listed or over-the-counter options, futures or other instruments linked to the index or some or all of the eligible underlying assets or 3-month USD LIBOR, may take or dispose of positions in the assets held by the eligible ETFs, may take or dispose of positions in listed or over-the-counter options or other instruments based on indices designed to track the performance of the New York Stock Exchange or other components of the U.S. equity market, may take short positions in the eligible underlying assets or other securities of the kind described above — i.e., we and/or our affiliates may sell securities of the kind that we do not own or that we borrow for delivery to purchaser, and/or may take or dispose of positions in interest rate swaps, options swaps and treasury bonds. We and/or our affiliates may acquire a long or short position in securities similar to the offered notes from time to time and may, in our or their sole discretion, hold or resell those securities.

In the future, we and/or our affiliates expect to close out hedge positions relating to the notes and perhaps relating to other notes with returns linked to the index, the eligible underlying assets, 3-month USD LIBOR or assets held by the eligible ETFs. We expect our affiliates’ steps to involve sales of instruments linked to the index, the eligible underlying assets, 3-month USD LIBOR or assets held by the eligible ETFs on or shortly before the determination date. Our affiliates’ steps also may involve sales and/or purchases of some or all of the listed or over-the-counter options, futures or other instruments linked to the index.

The hedging activity discussed above may adversely affect the market value of your notes from time to time and the value of the consideration that we will deliver on your notes at maturity. See “Additional Risk Factors Specific to Your Notes” above for a discussion of these adverse effects.

## THE INDEX

### General Overview

The GS Momentum Builder<sup>®</sup> Multi-Asset 5S ER Index (the index) measures the extent to which the performance of the exchange-traded funds and a money market position (together with the ETFs, the underlying assets) included in the index outperform the sum of the return on the notional interest rate, which is a rate equal to 3-month USD LIBOR, plus 0.65% per annum (accruing daily). The money market position reflects the notional returns accruing to a hypothetical investor from an investment in a money market account denominated in U.S. dollars that accrues interest at the notional interest rate. The index rebalances on each index business day from among 15 underlying assets that have been categorized in the following asset classes: broad-based equities; fixed income; emerging markets; alternatives; commodities; inflation; and cash equivalent. The index attempts to track the positive price momentum in the underlying assets, subject to limitations on volatility and a minimum and maximum weight for each underlying asset and each asset class, each as described below.

On each index business day (in the following context, a base index rebalancing day), the index is rebalanced. For each day in the weight averaging period related to that base index rebalancing day, the portfolio of underlying assets that would have provided the highest historical return during three return look-back periods (nine months, six months and three months) is calculated. Each portfolio is subject to a limit of 5% on the degree of variation in the daily closing prices or closing level, as applicable, of the aggregate of such underlying assets (a measure known as “realized volatility”) over the related realized volatility look-back period (the prior six months, three months and one month for the nine-month, six-month and three-month return look-back periods, respectively) and subject to a minimum and maximum weight for each underlying asset and each asset class. This results in three potential portfolios of underlying assets (one for each return look-back period) for each day in that weight averaging period. The weight of each underlying asset for a given day in a weight averaging period (the “target weight”) will equal the average of the weights of such underlying asset in the three potential portfolios while the weight of each underlying asset for the base index rebalancing will equal the average of such target weights. The weight averaging period for any base index rebalancing day will be the period from (but excluding) the 22nd index business day on which no index market disruption event occurs or is continuing with respect to any underlying asset prior to such day to (and including) such day. As a result of this step, the index may include as few as four eligible underlying assets (as few as three eligible ETFs) and may not include some of the underlying assets or asset classes during the entire term of the notes.

After a base index rebalancing, if on such index business day (in the following context, a daily total return index rebalancing day) the realized volatility of the index underlying assets exceeds the volatility cap of 6% for the applicable volatility cap period (the prior one month), the index will be rebalanced again in order to reduce such realized volatility to 6% by ratably reallocating a portion of the exposure to the index ETFs to the money market position. As a result of this step, the index may not include any ETFs and may allocate its entire exposure to the money market position, which will always be less than the sum of the return on the notional interest rate plus 0.65% per annum (accruing daily). Historically, a significant portion of the index exposure has been to the money market position.

The index reflects the return of the index underlying assets less the sum of the return on the notional interest rate plus 0.65% per annum (accruing daily). Any cash dividend paid on an index ETF is deemed to be reinvested in such index ETF and subject to subsequent changes in the value of the index ETF. In addition, any interest accrued on the money market position is similarly deemed to be reinvested on a daily basis in such money market position and subject to subsequent changes in the notional interest rate. For further information regarding how the index value is calculated see “— How is the index value calculated on any day?” below.

The notional interest rate is a rate equal to 3-month USD LIBOR, which generally will be the offered rate for 3-month deposits in U.S. dollars, as that rate appears on the Reuters screen 3750 page as of 11:00 a.m., London time, as observed two London business days prior to the relevant notional interest rate reset date (such day, a “USD LIBOR interest determination date”). A notional interest rate reset date will occur daily, or, if such date is not an index business day, on the index business day immediately following such date on which the notional interest rate is reset. A London business day is a day on which commercial banks and foreign currency markets settle payments and are open for general business in London.

If the index committee determines that 3-month USD LIBOR has been discontinued, then the index committee shall replace 3-month USD LIBOR with a substitute or successor rate that it has determined in its sole discretion is most comparable to 3-month USD LIBOR, provided that if the index committee determines there is an industry accepted successor rate, then the index committee shall use such successor rate. If the index committee has determined a substitute or successor rate in accordance with the foregoing, the index committee in its sole discretion may determine an alternative to London business day, USD LIBOR interest determination date and notional interest rate reset date to be used and any other relevant methodology for calculating such substitute or successor rate, including any adjustment factor needed to make such substitute or successor rate comparable to 3-month USD LIBOR, in a manner that is consistent with industry-accepted practices for such substitute or successor rate. Unless the index committee replaces 3-month USD LIBOR with a substitute or successor rate as so provided, the following will apply:

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If the rate described above does not so appear on the Reuters screen 3750 page, then 3-month USD LIBOR will be determined on the basis of the rates at which three-month deposits in U.S. dollars are offered by four major banks in the London interbank market selected by the index calculation agent at approximately 12:00 p.m., London time, on the relevant USD LIBOR interest determination date, to prime banks in the London interbank market, beginning on the relevant notional interest rate reset date, and in a representative amount. The index calculation agent will request the principal London office of each of these major banks to provide a quotation of its rate. If at least two quotations are provided, 3-month USD LIBOR for the relevant notional interest rate reset date will be the arithmetic mean of the quotations. If fewer than two of the requested quotations described above are provided, 3-month USD LIBOR for the relevant notional interest rate reset date will be the arithmetic mean of the rates quoted by major banks in New York City, selected by the index calculation agent, at approximately 11:00 a.m., New York City time, on the relevant notional interest rate reset date, for loans in U.S. dollars to leading European banks for a period of three months, beginning on the relevant notional interest rate reset date, and in a representative amount.

If no quotation is provided as described in the preceding paragraph, then the index calculation agent, after consulting such sources as it deems comparable to any of the foregoing quotations or display page, or any such source as it deems reasonable from which to estimate 3-month USD LIBOR or any of the foregoing lending rates, shall determine 3-month USD LIBOR for that notional interest rate reset date in its sole discretion.

The value of the index is calculated in U.S. dollars on each index business day by reference to the performance of the total return index value net of the sum of the return on the notional interest rate in effect at that time plus 0.65% per annum (accruing daily). The total return index value on each index business day is calculated by reference to the weighted performance of:

the base index, which is the weighted combination of underlying assets that comprise the index at the applicable time as a result of the most recent daily base index rebalancing; and

any additional exposure to the money market position resulting from any daily total return index rebalancing.

The underlying assets that comprise the base index as the result of the most recent daily base index rebalancing may include a combination of ETFs and the money market position, or solely ETFs. A daily total return index rebalancing will occur effective after the close of business on any daily total return index rebalancing day if the realized volatility of the base index exceeds the volatility cap of 6% for the volatility cap period applicable to such index business day.

As a result of a daily total return index rebalancing, the index will have exposure to the money market position even if the base index has no such exposure resulting from its most recent daily base index rebalancing.

For the purpose of the index:

an “eligible underlying asset” is one of the ETFs or the money market position that is eligible for inclusion in the index on an index business day;

an “eligible ETF” is one of the ETFs that is eligible for inclusion in the index on an index business day (when we refer to an “ETF” we mean an exchange traded fund, which for purposes of this prospectus supplement includes the following exchange traded products: SPDR<sup>®</sup> S&P 500<sup>®</sup> ETF Trust and SPDR<sup>®</sup> Gold Trust;

an “index underlying asset” is an eligible underlying asset with a non-zero weighting on any index business day;

an “index ETF” is an ETF that is an eligible ETF with a non-zero weighting on any index business day; and

an “index business day” is a day on which the New York Stock Exchange is open for its regular trading session.

How frequently is the index rebalanced?

On each daily base index rebalancing day, the index rebalances from among the 15 eligible underlying assets by calculating, for each day in the weight averaging period related to that base index rebalancing day, the portfolio of underlying assets that would have provided the highest historical return during three return look-back periods (nine months, six months and three months). Each portfolio is subject to a limit of 5% on the degree of variation in the daily

closing prices or closing level, as applicable, of the aggregate of such underlying assets (a measure known as “realized volatility”) over the related realized volatility look-back period (the prior six months, three months and one month for the nine-month, six-month and three-month return look-back periods, respectively) and subject to a minimum and maximum weight for each underlying asset and each asset class. This results in three potential portfolios of underlying assets (one for each return look-back period) for each day in that weight averaging period. The weight of each underlying asset for a given day in a weight averaging period will equal the average of the weights of such underlying asset in the three potential portfolios while the weight of each underlying asset for the daily base index rebalancing will equal the average of such target weights. This daily rebalancing is referred to as the base index rebalancing and the resulting portfolio of index underlying assets comprise the base index effective after the close of business on the day such daily rebalancing occurs. The weight averaging period for any base index rebalancing day will be the period from (but excluding) the 22nd index business day on which no index market disruption event occurs or is continuing with respect to any underlying asset prior to such day to (and including) such day. Certain aspects of index business day and base index rebalancing day adjustments are described under “— Could index market disruption events or corporate events impact the calculation of

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the index or a daily base index rebalancing or a daily total return index rebalancing by the index calculation agent?" below.

After a base index rebalancing, if, on such index business day, the realized volatility of the base index exceeds the volatility cap of 6% for the applicable volatility cap period (the prior one month), the index will be rebalanced again in order to reduce such realized volatility to 6% by ratably reallocating a portion of the exposure to the eligible ETFs to the money market position. This type of rebalancing has the effect of reducing the exposure of the index to the performance of the eligible ETFs. This daily rebalancing is referred to as the daily total return index rebalancing.

For a discussion of how the look-back periods for rebalancing are determined, see “— What is realized volatility and how are the weights of the underlying assets influenced by it?” and “— How do the weights of the index underlying assets change as a result of a daily total return index rebalancing?”, respectively, below.

How is the index value calculated on any day?

The value of the index was set to 100 on the index base date, July 31, 2015. On each index business day, the value of the index changes by reference to the performance of the total return index value net of the sum of the return on the notional interest rate in effect at that time plus 0.65% per annum (accruing daily). The total return index value on each index business day is calculated by reference to the weighted performance of:

the base index, which is the weighted combination of underlying assets that comprise the index at the applicable time as a result of the most recent daily base index rebalancing (whether partially or fully implemented); and any additional exposure to the money market position resulting from any daily total return index rebalancing. The underlying assets that comprise the base index as the result of the most recent daily base index rebalancing may include a combination of ETFs and the money market position, or solely ETFs. A daily total return index rebalancing will occur effective after the close of business on any daily total return index rebalancing day if the realized volatility of the base index exceeds the volatility cap of 6% for the volatility cap period applicable to such daily total return index rebalancing day. As a result of a daily total return index rebalancing, the index will have exposure to the money market position even if the base index has no such exposure resulting from its most recent daily base index rebalancing.

On any index business day, the index value will equal (a) the index value on the immediately preceding notional interest rate reset date multiplied by (b) the return on the total return index on such index business day reduced by the sum of (i) the prorated notional interest rate (compounded daily) and (ii) the prorated 0.65% per annum (accruing daily), with such prorated 0.65% per annum applied after such return on the total return index is reduced by such prorated notional interest rate. The return on the total return index for any such index business day will equal the quotient of the total return index value as of such index business day divided by the total return index value as of the immediately preceding notional interest rate reset date. The prorated notional interest rate and prorated 0.65% per annum are each calculated on an actual/360 day count basis from but excluding the immediately preceding notional interest rate reset date. The notional interest rate is reset on daily notional interest rate reset dates, or, if such date is not an index business day, on the index business day immediately following such date. Regardless of whether the index underlying assets include the money market position on a base index rebalancing day, if the index has ratably rebalanced into the money market position as a result of the daily volatility control feature, then the index also will include the value of the money market position.

The value of any index ETF is equal to the result of multiplying the weight applicable to such index ETF and the adjusted level of such index ETF. The adjusted level of such index ETF reflects any price change in such index ETF as well as any cash dividend paid on such index ETF. Any cash dividend paid on an index ETF is deemed to be reinvested in such index ETF and subject to subsequent changes in the value of the index ETF.



The value of the money market position reflects, on any day, the amount of interest accrued at the notional interest rate on an investment in a notional U.S. dollar denominated money market account. The money market position will have a positive notional return if the notional interest rate is positive. Any interest accrued on the money market position is deemed to be reinvested on a daily basis in such money market position and subject to subsequent changes in the notional interest rate.

The contribution of any index underlying asset to the performance of the index will depend on its weight and performance. The effects of potential adjustment events are described under “— Could index market disruption events or corporate events impact the calculation of the index or a daily base index rebalancing or a daily total return index rebalancing by the index calculation agent?” below.

How does the index attempt to provide exposure to price momentum?

The index uses the historical return performance of the eligible underlying assets to determine the composition of the index on a base index rebalancing day. The nine-month, six-month and three-month historical returns are used as an indication of price momentum. Although the index methodology seeks to select index underlying assets with the highest nine-month, six-month and three-month historical return reflecting price momentum, the underlying asset maximum weights, the asset class maximum weights, the 5% volatility target, the averaging of eligible underlying asset weights in

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the realized volatility look-back periods, the further averaging of such target weights during the applicable weight averaging period and the daily volatility control, as well as how the eligible underlying assets correlate, may limit the exposure to those underlying assets with the highest nine-month, six-month and three-month historical returns.

The nine-month, six-month and three-month historical return for an eligible underlying asset is calculated to include, with respect to the ETFs, price changes and any cash dividends paid during the relevant nine-month, six-month and three-month period being evaluated.

Who calculates and oversees the index?

The index is calculated using a methodology developed by GS&Co., the index sponsor. The complete index methodology, which may be amended from time to time, is available at [solactive.com/indices/](http://solactive.com/indices/). We are not incorporating by reference this website or any material it includes into this prospectus supplement.

An index committee is responsible for overseeing the index and its methodology. The index committee may exercise discretion in the case of any changes to the eligible underlying assets and any index market disruption event or potential adjustment event that occurs in relation to one or more eligible underlying assets. The index committee is comprised of employees of The Goldman Sachs Group, Inc. or one or more of its affiliates. At least forty percent of the committee is comprised of employees of control side functions, with at least two members from the compliance department and two members from the legal department. Other members consist of employees of The Goldman Sachs Group, Inc.'s securities division, which includes employees who regularly trade the eligible ETFs. If the index committee exercises any discretion related to the index, it must be approved by 100% of the control side employees present at the relevant index committee meeting.

Changes to the index methodology made by the index committee will be publicly announced on the index calculation agent's website at least 60 index business days prior to their effective date. Adjustments made by the index calculation agent in response to index market disruption events and potential adjustment events will be publicly announced as promptly as is reasonably practicable on the index calculation agent's website.

The index committee may exercise limited discretion with respect to the index, including in the situations described below under "— Can the eligible underlying assets change?". Any such changes or actions are publicly announced as promptly as is reasonably practicable and normally at least five index business days prior to their effective date.

The index sponsor has retained Solactive AG to serve as index calculation agent. The index calculation agent calculates the value of the index and implements the methodology determined by the index committee. The index sponsor can replace the index calculation agent at any time, or the index calculation agent can resign on 60 days notice to the index sponsor. In the event the index sponsor appoints a replacement index calculation agent, a public announcement will be made via press release.

The index calculation agent is responsible for the day to day implementation of the methodology of the index and for its calculation. The index calculation agent calculates and publishes the value of the index every 15 seconds on each index business day and publishes it on the Bloomberg page GSMBMA5S Index and Reuters page GSMBMA5S. The index calculation agent may from time to time consult the index committee on matters of interpretation with respect to the methodology.

What underlying assets are included in the universe of potential index underlying assets?

As of the date of this prospectus supplement, there are 14 eligible ETFs included in the 15 eligible underlying assets. These eligible underlying assets track assets that have been categorized in the following asset classes: broad-based

equities; fixed income; emerging markets; alternatives; commodities; inflation; and cash equivalent. The 14 ETFs are as follows:

SPDR® S&P 500® ETF Trust (SPY) — SPY seeks investment results that correspond generally to the price and yield performance, before fees and expenses, of publicly traded securities in leading industries of the U.S. economy, as measured by the S&P 500® Index. SPY has been categorized in the equities asset class.

iShares® MSCI EAFE ETF (EFA) — EFA seeks investment results that correspond generally to the price and yield performance, before fees and expenses, of publicly traded securities in the European, Australasian and Far Eastern markets, as measured by the MSCI EAFE® Index. EFA has been categorized in the equities asset class.

iShares® MSCI Japan ETF (EWJ) — EWJ seeks investment results that correspond generally to the price and yield performance, before fees and expenses, of publicly traded securities in the Japanese market as measured the MSCI Japan Index. EWJ has been categorized in the equities asset class.

iShares® 20+ Year Treasury Bond ETF (TLT) — TLT seeks investment results that correspond generally to the price and yield performance, before fees and expenses, of public obligations of the U.S. Treasury that have a minimum term to maturity of greater than 20 years, as measured by the ICE U.S. Treasury 20+ Year Bond Index. TLT has been categorized in the fixed income asset class.

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iShares® iBoxx \$ Investment Grade Corporate Bond ETF (LQD) — LQD seeks investment results that correspond generally to the price and yield performance, before fees and expenses, of U.S. dollar-denominated, investment grade corporate bonds, as measured by the Markit iBoxx® USD Liquid Investment Grade Index. LQD has been categorized in the fixed income asset class.

iShares® iBoxx \$ High Yield Corporate Bond ETF (HYG) — HYG seeks investment results that correspond generally to the price and yield performance, before fees and expenses, of the U.S. dollar-denominated liquid high yield corporate bond market, as measured by the Markit iBoxx® USD Liquid High Yield Index. HYG has been categorized in the fixed income asset class.

iShares® 7-10 Year Treasury Bond ETF (IEF) — IEF seeks investment results that correspond generally to the price and yield performance, before fees and expenses, of public obligations of the U.S. Treasury that have a minimum term to maturity of greater than 7 years and less than or equal to 10 years, as measured by the ICE U.S. Treasury 7-10 Year Bond Index. IEF has been categorized in the fixed income asset class.

iShares® MSCI Emerging Markets ETF (EEM) — EEM seeks investment results that correspond generally to the price and yield performance, before fees and expenses, of publicly traded securities in emerging markets, as measured by the MSCI Emerging Markets Index. EEM has been categorized in the emerging markets asset class.

iShares® U.S. Real Estate ETF (IYR) — IYR seeks investment results that correspond generally to the price and yield performance, before fees and expenses, of the real estate sector of the U.S. equity market, as represented by the Dow Jones U.S. Real Estate Index. The Dow Jones U.S. Real Estate Index is designed to represent Real Estate Investment Trusts (REITs) and other companies that invest directly or indirectly in real estate through development, management or ownership, including property agencies. IYR has been categorized in the alternatives asset class.

iShares® Preferred and Income Securities ETF (PFF) — PFF seeks investment results that correspond generally to the price and yield performance, before fees and expenses, of a select group of exchange-listed, U.S. dollar denominated preferred securities, hybrid securities and convertible preferred securities listed on the New York Stock Exchange or NASDAQ Capital Market, as represented by the ICE Exchange-Listed Preferred & Hybrid Securities Transition Index, which allocates exposure between the ICE US Listed Preferred Securities Index and the ICE Exchange-Listed Preferred & Hybrid Securities Index (the “new index”). PFF has been categorized in the alternatives asset class. During the period from February 1, 2019 to October 31, 2019, the ETF will track the ICE Exchange-Listed Preferred & Hybrid Securities Transition Index. On and after November 1, 2019, the ETF is expected to track in full the new index. Prior to February 1, 2019, the ETF tracked the S&P U.S. Preferred Stock Index™.

iShares® Nasdaq Biotechnology ETF (IBB) — IBB seeks investment results that correspond generally to the price and yield performance, before fees and expenses, of securities listed on The NASDAQ Stock Market that are classified as either biotechnology or pharmaceutical according to the Industry Classification Benchmark, as measured by the NASDAQ Biotechnology Index. IBB has been categorized in the alternatives asset class.

SPDR® S&P® Oil & Gas Exploration & Production ETF (XOP) — XOP seeks investment results that correspond generally to the total return performance, before fees and expenses, of securities listed in the S&P Total Market Index that are classified under the Global Industry Classification Standard in the oil and gas exploration & production industry group, as measured by the S&P Oil & Gas Exploration & Production Select Industry Index. XOP has been categorized in the commodities asset class.

SPDR® Gold Trust (GLD) — GLD seeks investment results that correspond generally to the price and yield performance, before fees and expenses, of gold bullion held by the SPDR® Gold Trust. GLD has been categorized in the commodities asset class.

iShares® TIPS Bond ETF (TIP) — TIP seeks investment results that correspond generally to the price and yield performance, before fees and expenses, of inflation-protected public obligations of the U.S. Treasury that have at least one year remaining to maturity, are rated investment grade and have \$250 million or more of outstanding face value, as measured by the Bloomberg Barclays U.S. Treasury Inflation Protected Securities (TIPS) Index (Series-L). TIP has been categorized in the short-term U.S. treasury bills and inflation asset class.

In addition to the above referenced ETFs, the eligible underlying assets also include the money market position. The money market position is included in the cash equivalent asset class and reflects the notional returns accruing to a

hypothetical investor from an investment in a money market account denominated in U.S. dollars that accrues interest at the notional interest rate, which is a rate equal to 3-month USD LIBOR.

For further description of these eligible underlying assets, please see “The Eligible Underlying Assets” herein.

What are the minimum and maximum potential weights of each eligible underlying asset and each asset class for the base index rebalancing on a base index rebalancing day?

The maximum potential weight and minimum potential weight of each eligible underlying asset and each asset class on each base index rebalancing day is listed below. The maximum weight of each eligible underlying asset and each asset class limits the exposure to each eligible underlying asset and each asset class. Thus, even if the 5% volatility target would be met during each realized volatility look-back period (the prior six months, three months and one month), the

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index would not allocate its entire exposure to the single eligible underlying asset that has the highest historical return during the related return look-back period (the prior nine months, six months and three months for the six-month, three-month and one-month volatility look-back period, respectively) among all of the eligible underlying assets because of the maximum weight limitations. The minimum weight restricts short exposure to any eligible underlying asset or any asset class. Because of these limitations, after giving effect to a daily base index rebalancing, the index is expected to have exposure to only a limited subset of the 15 eligible underlying assets (which could be as few as four eligible underlying assets) and you may not have any exposure to some of the 15 eligible underlying assets or asset classes during the entire term of the notes. Further, as a result of a daily total return index rebalancing, the index may not include any ETFs and may allocate its entire exposure to the money market position.

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Broad-Based Equities	0%	50%	SPDR® S&P 500® ETF Trust	SPY	0%	20%
			iShares® MSCI EAFE ETF	EFA	0%	20%
			iShares® MSCI Japan ETF	EWJ	0%	10%
Fixed Income	0%	50%	iShares® 20+ Year Treasury Bond ETF	TLT	0%	20%
			iShares® iBoxx \$ Investment Grade Corporate Bond ETF	LQD	0%	20%
			iShares® iBoxx \$ High Yield Corporate Bond ETF	HYG	0%	20%
			iShares® 7-10 Year Treasury Bond ETF	IEF	0%	20%
Emerging Markets	0%	20%	iShares® MSCI Emerging Markets ETF	EEM	0%	20%
Alternatives	0%	25%	iShares® U.S. Real Estate ETF	IYR	0%	20%
			iShares® Preferred and Income Securities ETF	PFF	0%	10%
			iShares® Nasdaq Biotechnology ETF	IBB	0%	10%
Commodities	0%	25%	SPDR® S&P® Oil & Gas Exploration & Production ETF	XOP	0%	20%
			SPDR® Gold Trust	GLD	0%	20%
Inflation	0%	10%	iShares® TIPS Bond ETF	TIP	0%	10%
Cash Equivalent	0%	50%**	Money Market Position	N/A	0%	50%**

\* The value of a share of an eligible ETF may reflect transaction costs and fees incurred or imposed by the investment advisor of the eligible ETF as well as the costs to the ETF to buy and sell its assets. These costs and fees are not included in the calculation of the index underlying the eligible ETF. For more fee information relating to an eligible ETF, see “The Eligible Underlying Assets” on page S-65.

\*\* With respect to the money market position, the related asset class maximum weight and underlying asset maximum weight limitations do not apply to daily total return index rebalancing, and, therefore, as a result of daily total return index rebalancing, the index may allocate its entire exposure to the money market position.

What is realized volatility and how are the weights of the underlying assets influenced by it?

Realized volatility is a measurement of the degree of movement in the price or value of an asset observed over a specified period. Realized volatility is calculated by specifying a measurement period, determining the average value during such measurement period and then comparing each measured point during such measurement period to such average. The index utilizes historical realized volatility over three separate realized volatility look-back periods (six-months, three-months and one-month) for each daily base index rebalancing, which is calculated by the index calculation agent from daily closing net asset prices or the closing level, as applicable, over the prior six month, three month and one month period, as applicable. For example, an eligible underlying asset will have a higher realized volatility during a specific historical period than another eligible underlying asset if such eligible underlying asset has greater price movement (increases or decreases) relative to its average price during the measurement period. An eligible underlying asset with a stable price during a specific historical period will have a lower realized volatility than an eligible underlying asset which has relatively larger price movements during that same period. Further, an eligible underlying asset will have a higher realized volatility with respect to a specific measurement period if such underlying asset has greater price movements (increases and decreases) in such measurement period as compared to the price movements of the same underlying asset in a different measurement period.

In choosing the weights for the index underlying assets for any base index rebalancing day, the 5% volatility target limits the overall level of realized volatility that may be reflected by the index underlying assets. Since the volatility target limits the base index as a whole, when creating the three potential portfolios the realized volatility of each eligible underlying asset for the applicable look-back period needs to be compared relative to the realized volatilities of the remaining eligible underlying assets for the same look-back period. An eligible underlying asset may have a relatively high historical return during one or more return look-back periods relative to other eligible underlying assets, but may be excluded from inclusion as an index underlying asset for a given base index rebalancing day (or may be assigned a weight below its maximum weight) because that eligible underlying asset has a high realized volatility in the related volatility look-back period (or periods) relative to other eligible underlying assets. However, because the weight of each underlying asset for each base index rebalancing will equal the average of the average of the weights of such underlying asset across three



potential portfolios (one for each return look-back period) for each day in the weight averaging period related to that base index rebalancing day, the impact of a low realized volatility for one look-back period may be lessened by a higher realized volatility for a different look-back period. In addition, an eligible underlying asset with a relatively high realized volatility may be included as an index underlying asset because its realized volatility is offset by another eligible underlying asset that is also included as an index underlying asset. Because the historical returns and realized volatility are measured on an aggregate basis within each potential portfolio, highly correlated eligible underlying assets may be excluded from a potential portfolio, in whole or in part, on a base index rebalancing day. Such highly correlated eligible underlying assets may be excluded even if, on an independent basis, such eligible underlying assets have a relatively high historical return or relatively low realized volatility for the applicable look-back period. Since realized volatility is based on historical data, there is no assurance that the historical level of volatility of an index underlying asset included in the index in a base index rebalancing day rebalancing will continue.

The look-back period relevant for calculating the applicable historical return and applicable historical realized volatility of each combination of eligible underlying assets is the period beginning on (and including) the day that is nine, six, three or one calendar months (or, if any such day is not an index business day, the preceding index business day), as applicable, before the third index business day immediately preceding such base index rebalancing day to (but excluding) the third index business day prior to the given index business day. The weight averaging period for any base index rebalancing day will be the period from (but excluding) the 22nd index business day on which no index market disruption event occurs or is continuing with respect to any underlying asset prior to such day to (and including) such day.

With respect to each potential portfolio, if at a base index rebalancing day no combination of eligible underlying assets complies with the 5% volatility target, asset class maximum weights and underlying asset maximum weights, then such portfolio will select, from all combinations of eligible underlying assets that comply with the asset class maximum weights and the underlying asset maximum weights, the combination with the lowest historical realized volatility for the realized volatility look-back period applicable to such potential portfolio, regardless of that combination's nine-month, six-month and three-month performance, as applicable. The particular combination so selected will exceed the 5% volatility target.

How do the weights of the index underlying assets change as a result of a daily total return index rebalancing?

The index calculation agent calculates the historical realized volatility of the base index for the applicable volatility cap period, which is the prior one month as determined below. As long as, on any given daily total return index rebalancing day, the calculated one-month realized volatility of the base index for the applicable volatility cap period is equal to or less than the volatility cap, no change to the then-current weights of the index underlying assets is made on that daily total return index rebalancing day. However, if on any given daily total return index rebalancing day the calculated volatility of the base index for the volatility cap period exceeds the volatility cap of 6%, the exposure of the index is partially rebalanced into the money market position to reduce the historical realized volatility for such volatility cap period. This is achieved by partially rebalancing, to the money market position, the exposure of the total return index to the base index through a reduction of the base index weight to the percentage that is equal to the volatility cap divided by such calculated volatility. As a result of a daily total return index rebalancing, the index may not include any ETFs (e.g., if the base index weight is reduced to zero) and may allocate its entire exposure to the money market position.

With respect to any given daily total return index rebalancing day, the volatility cap period is the period beginning on (and including) the day which is one calendar month (or, if any such date is not an index business day, the preceding index business day) before the second index business day prior to the given daily total return index rebalancing day to (and including) the third index business day prior to the given daily total return index rebalancing day. The volatility cap period with respect to any given total return index rebalancing day will not be affected by the occurrence of an

index market disruption event, and the exposure to the base index will be calculated on the total return index rebalancing day as described under “— Could index market disruption events or corporate events impact the calculation of the index or a daily base index rebalancing or a daily total return index rebalancing by the index calculation agent?” below.

#### Examples of hypothetical daily total return index rebalancing

The following table displays hypothetical one-month realized volatility for the base index and the percent weighting of the base index for purposes of calculating the total return index value as a result of hypothetical daily total return index rebalancing in different situations. You should note that the base index itself may contain exposure to the money market position which would be in addition to any exposure to the money market position that the index reflects as a result of a daily total return index rebalancing. For purposes of highlighting the effect of a daily total return index rebalancing, the table assumes that the base index itself did not contain exposure to the money market position as a result of a daily base index rebalancing. This information is intended to illustrate the operation of the index on each daily total return index rebalancing day and is not indicative of how the index may perform in the future.

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Day	1	2	3	4	5	6	7	8	9	10
Historical One-Month Realized Volatility of the Base Index	3.0	4.9	6.1	5.3	6.2	5.6	8.5	6.0	7.4	3.9
Weight of Base Index For Purposes of Calculating the Total Return Index Value	100.00%	100.00%	98.36%	100.00%	96.77%	100.00%	70.59%	100.00%	81.08%	100.00%
Weight of Money Market Position	0.00%	0.00%	1.64%	0.00%	3.23%	0.00%	29.41%	0.00%	18.92%	0.00%

On days 1, 2, 4, 6, 8 and 10 the historical realized volatility of the base index for the applicable volatility cap period is equal to or less than the volatility cap, so the index did not ratably rebalance into the money market position on such daily total return index rebalancing day.

On days 3, 5, 7 and 9, because the historical realized volatility of the base index for the applicable volatility cap period is greater than the volatility cap, then the weight allocated to the base index for such daily total return index rebalancing day is ratably rebalanced into the money market position. Please see “Underlying Asset Weightings” below for data regarding the frequency of daily total return index rebalancing.

What is the money market position?

The money market position is a hypothetical investment intended to express the notional returns accruing to a hypothetical investor from an investment in a money market account denominated in U.S. dollars that accrues interest at the notional interest rate, which is a rate equal to 3-month USD LIBOR. Allocation of the index to the money market position is intended to reduce the volatility of the index.

The index will provide exposure to the money market position (1) if on a daily base index rebalancing day the money market position has a relatively high performance compared to the other eligible underlying assets in a potential portfolio and/or, with respect to a realized volatility look-back period, such index underlying asset has a comparatively low realized volatility compared to the other eligible index underlying assets and is used to reduce the realized volatility of the index underlying assets in a potential portfolio on an aggregate basis and/or (2) on a daily total return index rebalancing day, if the realized volatility of the index underlying assets for the applicable volatility cap period is higher than the volatility cap, resulting in a daily total return index rebalancing.

Can the eligible underlying assets change?

Except as otherwise noted above, the eligible underlying assets and the notional interest rate are not expected to change or be replaced. However, the index committee, in its sole discretion, may eliminate an eligible ETF or notional interest rate (and/or designate a successor) if for any reason any of the following events occur with respect to such ETF or rate, in the determination of the index committee in its sole discretion:

- the ETF ceases to exist, is delisted, terminated, wound up, liquidated or files for bankruptcy, is combined with another ETF that has a different investment objective, or changes its currency of denomination;
- the ETF suspends creations or redemptions for five consecutive index business days or announces a suspension of unlimited or unspecified duration for such creations or redemptions;
- the net asset value of the ETF is not calculated or is not announced by either the ETF or its sponsor for five consecutive index business days, or an index market disruption event occurs and is continuing for five consecutive index business days;
- there has been a material diminution in the daily trading volume of the ETF or the net asset value of such ETF (where net asset value is measured as the value of an entity’s assets less the value of its liabilities as publicly disclosed by this ETF or its sponsor);

the sponsor or investment adviser of the ETF files for bankruptcy and there is no solvent immediate successor;  
limitations on ownership are imposed on the ETF due to a change in law or regulation, loss of regulatory exemptive relief or otherwise, and the index committee, in its sole discretion, determines that such limitations materially adversely affect the ability of holders of the ETF to hold, acquire or dispose of shares of such ETF;  
the tax treatment of the ETF changes in a way that would have a material adverse effect on holders of shares of such ETF;  
there has been a material change to the expense ratio or fee structure of such ETF that is adverse to holders of shares of such ETF;

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the ETF has changed the index underlying or otherwise referenced by such ETF to an index that is materially different, or the methodology for the index is materially modified (other than a modification in the ordinary course of administration of the index underlying or otherwise referenced by such ETF);

the index underlying or otherwise referenced by the ETF is no longer compiled, or the closing level of such index is not calculated or published for five consecutive index business days;

the index sponsor determines in its sole discretion that it is not practicable for the ETF to continue to be included in the index for any reason, including due to:

a) a dispute as to whether a license is required to use the ETF or the related index, or

b) to the extent there is an agreement in place governing such use, changes in the terms upon which the ETF or related index is made available to the index sponsor for inclusion in the index that the index sponsor, in its sole discretion, determines to be materially adverse to it; or

the notional interest rate has been discontinued.

The successor ETF or rate shall be that which, in the determination of the index committee in its sole discretion, (i) with respect to a successor ETF, most closely replicates the relevant ETF or (ii) with respect to the successor rate, is determined in accordance with the procedures set forth above under “The Index – General Overview”. If the index committee determines in its sole discretion that no successor ETF exists, such ETF will be removed from the index. No successor ETF or rate may fail to satisfy any of the conditions described above for replacing or removing an ETF or rate at the time the index committee decides to appoint such successor ETF or rate.

Could index market disruption events or corporate events impact the calculation of the index or a daily base index rebalancing or a daily total return index rebalancing by the index calculation agent?

If a daily base index rebalancing day must be effected on an index business day which corresponds to the first day of a given index market disruption event (as defined below) with respect to any index underlying asset, the index calculation agent shall then rebalance the index as if (i) for each index underlying asset that had not been affected by an index market disruption event, the daily base index rebalancing day occurred on such day and (ii) for each index underlying asset that had been affected by such index market disruption event, such daily base index rebalancing day did not occur on such day. (i.e., each index underlying asset that was affected by such index market disruption event is disregarded for purposes of base index rebalancing). A base index rebalancing day will be deemed not to occur on an index business day if an index market disruption event is continuing (as opposed to occurring for the first time).

If a daily total return index rebalancing day must be effected on an index business day which corresponds to the first day of a given index market disruption event or on which an index market disruption event is continuing from the prior index business day with respect to any index underlying asset, the index calculation agent shall then rebalance the index as if (i) for each index underlying asset that had not been affected by an index market disruption event, the daily total return index rebalancing day occurred on such day and (ii) for each index underlying asset that had been affected by such index market disruption event, the daily total return index rebalancing day did not occur on such day, provided that for purposes of calculating realized volatility the alternative calculations set forth in the next paragraph apply (i.e., other than for purposes of calculating the realized volatility in the manner set forth in the next paragraph, each index underlying asset that was affected by such index market disruption event is disregarded for purposes of daily total return index rebalancing). Consequently, if, for example, an index market disruption event were to occur for the first time on a base index rebalancing day with respect to only one of the index underlying assets, then on the base index rebalancing day on which the index market disruption event occurred the weight of all index underlying assets not affected by the index market disruption event would be determined and the weight of the affected index underlying asset would be disregarded. Further, for purposes of any daily total return index rebalancing, the exposure of the total return index to the affected index underlying asset would not be reduced but the exposure of the total return index to the remainder of the base index would be reduced so that the base index (including the affected index

underlying asset) and the money market position together do not exceed the volatility cap. As a result, the weight of an index underlying asset affected by an index market disruption event could be temporarily underrepresented or overrepresented in the base index.

Solely for purposes of calculating realized volatility which includes an index business day on which a market disruption event has occurred or is continuing with respect to any eligible underlying asset, the value of the base index will include any underlying asset that has been affected by an index market disruption event and will be calculated (i) in the event of a trading disruption related to movements in price that exceed limits established by the relevant exchange, by assuming the level of the affected eligible underlying asset is equal to such price limit on such index business day or (ii) in the event of an index market disruption event which is not a trading disruption related to movements in price that exceed limits established by the relevant exchange, by multiplying the level of the affected eligible underlying asset on the immediately preceding relevant index business day by the percentage change (whether positive or negative) of the underlying asset having the largest absolute change in value from the immediately preceding relevant index business day to the relevant index business day; provided, that if a market disruption event has occurred and is continuing with respect to more than one eligible underlying asset on an index business day, then the index calculation agent shall consult with the index

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committee to determine the values to be used for such disrupted eligible underlying assets for purposes of calculating realized volatility and such determination to be made by the index committee in its sole discretion based on its review of such market and other information as it believes relevant to such determination.

On the sixth index business day following the occurrence of an index market disruption event with respect to any index underlying asset, if such index market disruption event is continuing, the index committee may instruct the index calculation agent to rebalance the index using a specified price. In the event the index committee determines on such sixth index business day, in its sole discretion, that no such instructions should be given to the index calculation agent, the index committee may revisit such determination on any index business day thereafter on which the index market disruption event is continuing. Notwithstanding the foregoing, in the event of a force majeure event (as defined below) in which all of the index underlying assets are affected, the calculation and publication of the index shall be postponed until, in the determination of the index calculation agent, such force majeure event has been resolved.

An “index market disruption event” will have occurred in any of the following situations: (i) the official closing price, level, rate or other measure of any eligible underlying asset is unavailable on any relevant day on which such measure is scheduled to be published, (ii) a relevant exchange (as defined below) is not open for trading during its regular trading session, or closes prior to its scheduled closing time, on any relevant day or there is a material exchange disruption (as defined below) as determined by the index calculation agent, (iii) upon the occurrence or existence of a trading disruption (as defined below) for more than two hours of trading or at any time during the one-hour period that ends at the scheduled closing time of the exchange, (iv) the net asset value per share of an eligible ETF is not calculated or is not announced by the eligible ETF or the sponsor of such ETF and such event has a material impact on the index as determined by the index sponsor, (v) the eligible ETF or the relevant sponsor of any eligible ETF suspends creations or redemptions of shares of such ETF and such event has a material impact on the index as determined by the index sponsor, (vi) upon the occurrence or existence of an index dislocation (as defined below), (vii) upon the occurrence or existence of a force majeure event (as defined below) or (viii) upon the occurrence of an interest rate disruption event (as defined below).

A “trading disruption” means any suspension of or limitation imposed on trading by the exchange or related exchange (as defined below), and whether by reason of movements in price exceeding limits permitted by the exchange or otherwise, relating to the eligible ETF shares, related index or futures or options on the eligible ETF shares or underlying index.

An “exchange disruption” means any event that disrupts or impairs (as determined by the index calculation agent in consultation with the index committee) the ability of market participants in general to effect transactions in, or obtain market values for, the shares of the ETF on the exchange or futures or options on the ETF shares or underlying index, in each case on the relevant related exchange.

An “exchange” means the primary exchange on which shares of an eligible ETF are listed.

A “related exchange” means, in respect of an eligible ETF or underlying index, as the case may be, the primary exchange (or exchanges) or quotation system (or quotation systems) on which futures or options contracts relating to such eligible ETF or underlying index, as the case may be, are traded, if any.

An “index dislocation” means the index calculation agent (in consultation with the index committee) determines that a market participant, as a result of a market-wide condition relating to the index or any eligible underlying asset, would (i) be unable, after using commercially reasonable efforts, to acquire, establish, re-establish, substitute, maintain, unwind, or dispose of all or a material portion of any hedge position relating to the index or an eligible underlying asset or (ii) incur a materially increased cost in doing so, including due to any capital requirements or other law or regulation.

A “force majeure event” will have occurred if the index calculation agent determines that there has been the occurrence of a systems failure, natural or man-made disaster, act of God, armed conflict, act of terrorism, riot or labor disruption or any similar intervening circumstance that is beyond the reasonable control of the index sponsor, index calculation agent or any of their respective affiliates that the index calculation agent determines is likely to have a material effect on an eligible underlying asset, or on its ability to perform its role in respect of the index.

An “interest rate disruption event” means (and an interest rate disruption event shall be deemed to have occurred if), with respect to the notional interest rate and a relevant day: (i) such notional interest rate is not published on a date on which it is scheduled for publication or (ii) such notional interest rate is no longer published.

In the event that an index ETF is affected by a potential adjustment event, the index committee may make adjustments to the level of such index ETF and/or the quantities of the index underlying assets. Any of the following will be a potential adjustment event with respect to an index ETF:

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Potential Adjustment Event	Adjustment	Adjustment Description
Cash Dividends	Yes	The dividend is reinvested in that index ETF.
Special / Extraordinary Dividends	Yes	The dividend is reinvested in that index ETF.
Return of Capital	Yes	The capital is reinvested in that index ETF.
Stock Dividend	Yes	Where shareholders receive “B” new shares for every “A” share held, the number of shares is adjusted by multiplying the original number of shares by the quotient of (a) the sum of A and B divided by (b) A.
Stock Split	Yes	Where shareholders receive “B” new shares for every “A” share held, the number of shares is adjusted by multiplying the original number of shares by the quotient of B divided by A.

Potential adjustment events also include any other event that could have a diluting or concentrative effect on the theoretical value of the index ETF shares and would not otherwise be accounted for in the index. The index calculation agent may make adjustments in such cases.

If the index calculation agent determines that the price made available for an index ETF (or the published level of a notional interest rate) reflects a manifest error, the calculation of the index or level shall be delayed until such time as a corrected price or level is made available. In the event a corrected price or level is not made available on a timely basis or in the event that the price made available for an index ETF (or the published level of a notional interest rate) is subsequently corrected and such correction is published, then the index calculation agent may, if practicable and if the index calculation agent determines acting in good faith that such error is material, adjust or correct the relevant calculation or determination, including the level of the index ETF, as of any index business day to take into account such correction. This convention, however, will not change the starting index value for the notes. However, the note calculation agent may adjust the method of calculation of the level of the index to ensure that the level of the index used to determine the amount payable on the stated maturity date is equitable. See “Terms and Conditions — Discontinuance or modification of the index” above.

On any index business day during which the price for an eligible ETF reflects such an error (and such error has not been corrected), the weights will be calculated using the price made available by the relevant exchange (notwithstanding any manifest error). If the index calculation agent determines that any such error is material (as described above) and if the relevant exchange subsequently corrects such price it has made available, the index value may be calculated using such corrected price, but the quantities of the underlying assets implied by the weights (prior to the error being corrected) will not be adjusted.

What is the historical performance of the index?

The closing level of the index has fluctuated in the past and may, in the future, experience significant fluctuations. Any upward or downward trend in the historical or hypothetical closing level of the index during any period shown below is not an indication that the index is more or less likely to increase or decrease at any time during the life of your notes.

You should not take the historical index performance information or hypothetical performance data of the index as an indication of the future performance of the index. We cannot give you any assurance that the future performance of the index, the index underlying assets, the notional interest rate will result in receiving an amount greater than the outstanding face amount of your notes on the stated maturity date.

Neither we nor any of our affiliates make any representation to you as to the performance of the index. Before investing in the offered notes, you should consult publicly available information to determine the relevant index levels between the date of this prospectus supplement and the date of your purchase of the offered notes. The actual performance of the index over the life of the offered notes, as well as the cash settlement amount at maturity, may bear little relation to the historical index performance information or hypothetical performance data shown below.

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### Daily Closing Levels of the Index

The following graph shows the daily closing levels of the index from February 26, 2009 to February 26, 2019. Since the index was launched on May 16, 2016 and has a limited operating history, the graph includes hypothetical performance data for the index prior to its launch on May 16, 2016.

The historical closing levels from May 16, 2016 (the index launch date) to February 26, 2019 were obtained from Bloomberg Financial Services and Solactive AG, without independent verification. (In the graph, historical closing levels can be found to the right of the vertical solid line marker.) You should not take the historical index performance information as an indication of the future performance of the index.

The hypothetical performance data from February 26, 2009 to May 15, 2016 is based on the historical levels of the eligible underlying assets using the same methodology that is used to calculate the index. The hypothetical performance data prior to the launch of the index on May 16, 2016 refers to simulated performance data created by applying the index's calculation methodology to historical levels of the underlying assets that comprise the index. Such simulated performance data has been produced by the retroactive application of a back-tested methodology, and may reflect a bias towards underlying assets or related indices that have performed well in the past. No future performance of the index can be predicted based on the simulated performance described herein. You should not take the hypothetical performance data as an indication of the future performance of the index.

### Historical Performance of the GS Momentum Builder<sup>®</sup> Multi Asset 5S ER Index

## Underlying Asset Weightings

As of February 12, 2019, the following chart sets forth the weighting of each eligible underlying asset and the hypothetical and historical average percentage weightings of the eligible underlying assets, the highest percentage weightings of the eligible underlying assets and the percentage of index business days with positive weightings for the eligible underlying assets from August 29, 2008 to February 12, 2019 (the period for which eligible underlying assets is available). This data reflects the same historical information and hypothetical data as in the previous tables. You should not take the historical information or hypothetical data as an indication of the future performance of the index.

Eligible Underlying Asset	Weighting (as of February 12, 2019)*	Average Weighting	Highest Weighting	Percentage of Index Business Days
				When Underlying Asset is Included as an Index Underlying Asset
SPDR® S&P 500® ETF Trust	0.54%	8.69%	20.00%	89.78%
iShares® MSCI EAFE ETF	0.00%	3.10%	20.01%	50.51%
iShares® MSCI Japan ETF	0.00%	2.20%	10.00%	68.07%
iShares® 20+ Year Treasury Bond ETF	14.70%	8.69%	20.00%	88.45%
iShares® iBoxx \$ Investment Grade Corporate Bond ETF	6.31%	8.66%	20.00%	90.00%
iShares® iBoxx \$ High Yield Corporate Bond ETF	2.50%	7.57%	20.00%	91.94%
iShares® 7-10 Year Treasury Bond ETF	19.94%	9.16%	20.00%	89.32%
iShares® MSCI Emerging Markets ETF	5.25%	2.36%	18.26%	58.34%
iShares® U.S. Real Estate ETF	14.41%	4.97%	18.09%	83.31%
iShares® Preferred and Income Securities ETF	0.00%	4.98%	10.01%	88.71%
iShares® Nasdaq Biotechnology ETF	1.85%	4.15%	10.02%	92.13%
SPDR® S&P® Oil & Gas Exploration & Production ETF	0.00%	2.50%	17.21%	70.92%
SPDR® Gold Trust	13.33%	4.87%	19.77%	81.45%
iShares® TIPS Bond ETF	0.78%	4.20%	10.00%	89.93%
Money Market Position	20.39%	23.90%	50.00%	98.67%

\*Current weighting information is updated from time to time by Solactive AG, the index calculation agent, at [solactive.com/indices/](http://solactive.com/indices/). We are not incorporating by reference the website or any material it includes in this prospectus supplement.

The following chart and table provide a comparison between the index (using historical information and hypothetical data, as explained below) and certain classes of assets (in each case, represented by a benchmark ETF or a benchmark index, which are distinct from the asset classes in which the 15 underlying assets have been categorized for purposes of this index) from August 29, 2008 to February 26, 2019. Benchmark ETF data and benchmark index data is based on the historical levels of the benchmark ETFs and benchmark indices, respectively. The historical index information from May 16, 2016 (the index launch date) to February 26, 2019 reflects the actual performance of the index. (In the chart, this historical index information can be found to the right of the vertical solid line marker.) The hypothetical index data from August 29, 2008 to May 15, 2016 is based on the historical levels of the eligible underlying assets, using the same methodology that is used to calculate the index. Please note that the hypothetical index data is presented from August 29, 2008 to minimize assumptions about the level of the iShares® Preferred and Income Securities ETF prior to November 29, 2007, which is the first date on which such ETF had a continuously published level. As a result, the following chart and table do not reflect the entirety of the global financial crisis, which had a severe and negative effect on certain of the benchmark ETFs, benchmark indices and eligible underlying assets and would have had a severe and negative effect on the index. Please also note that the benchmark ETFs and benchmark indices that are used to represent asset classes for purposes of the following table and chart may not be eligible underlying assets for purposes of the index and in some cases differ from the eligible underlying assets that are used to represent classes of assets with the same or similar titles for purposes of the index. You should not take the historical index information, hypothetical index data or historical benchmark ETF and benchmark index data as an indication of the future performance of the index.

Effective Performance (1 Month)	1.09%	0.87%	4.93%	4.13%	3.20%
Effective Performance (6 Month)	-4.35%	1.11%	-3.94%	-10.72%	2.61%
Annualized* Performance (since August 2008)	4.18%	3.11%	5.63%	-11.65%	6.62%
Annualized* Realized Volatility (since August 2008)**	5.10%	4.86%	16.75%	22.62%	30.96%
Return over Risk (since August 2008)***	0.82	0.64	0.34	-0.51	0.21
Maximum Peak-to-Trough Drawdown****	-11.49%	-12.96%	-48.43%	-78.65%	-65.74%

\* Calculated on a per annum percentage basis.

\*\* Calculated on the same basis as realized volatility used in calculating the index.

\*\*\* Calculated by dividing the annualized performance by the annualized realized volatility since August 29, 2008.

\*\*\*\* The largest percentage decline experienced in the relevant measure from a previously occurring maximum level.

While reviewing the charts and related information that follow, you should consider the following:

On any given day, we expect that the index will have exposure to only a limited subset of the 15 underlying assets. For example, on the rebalancing conducted on June 14, 2016, only 12 eligible underlying assets (11 of which were ETFs) were selected for the upcoming day. Thus, the index did not target any exposure upon such rebalancing to 3 of the eligible underlying assets.

The index will not necessarily allocate the maximum weight or any weight to eligible underlying assets with relatively high historical returns on an index business day due to the limitation imposed by the 5% volatility target (which volatility is measured on a basket basis and is not determined based on the realized volatility of each eligible underlying asset standing alone). To illustrate, even an underlying asset with the highest average historical returns over the applicable 22-day weight averaging period may have less than its maximum weight on any index business day due to the 5% volatility target limitations.

Asset class maximum weight limitations may prevent an eligible underlying asset from being allocated its maximum weight in the index despite relatively high historical returns on an index business day. This result could, in part, be due to each of the other assets in that asset class being allocated their respective maximum weights.

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Positive returns during the period used to calculate the historical returns do not ensure that an underlying asset will provide positive returns after a daily rebalancing if selected as an index underlying asset. To illustrate, an underlying asset that had a positive historical return on a base index rebalancing day could have a negative return for the day immediately following such base index rebalancing day.

You should not take the historical information above as an indication of the future performance of the index.

The following chart sets forth the daily allocation on each index business day between each asset class from August 29, 2008 to February 12, 2019, using the historical index information and hypothetical index data previously supplied above. (In the chart, this historical information can be found to the right of the vertical solid line marker.) You should not take the historical information or hypothetical data as an indication of the future performance of the index.

The following chart sets forth the number of index underlying assets included in the index on each index business day during the period from August 29, 2008 to February 12, 2019 based on the historical index information and hypothetical index data previously supplied above. You should not take the historical information or hypothetical data as an indication of the future performance of the index.

Number of Index Underlying Assets	Percent of Days Included
0	0.00%
1	0.00%
2	0.00%
3	0.00%
4	0.00%
5	0.00%
6	0.00%
7	0.00%
8	1.03%
9	2.58%
10	8.59%
11 or more	87.80%

The following chart sets forth the percentage of index business days during the period from August 29, 2008 to February 12, 2019 on which the asset class maximum weight restrictions reduced the weighting of one or more index underlying assets or prevented one or more eligible underlying assets from becoming an index underlying asset due to its affect on some or all of the weight averaging period with respect to the relevant index business day. These percentages are based on the historical index information and hypothetical index data previously supplied above. You should not take the historical information or hypothetical data as an indication of the future performance of the index.

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Percent of Index Business Days That Asset Class Maximum Weight Restriction Reduced an Index Underlying Asset Weighting or Prevented an Eligible Underlying Asset From Becoming an Index Underlying Asset Due to its Affect on Some or All of the Weight Averaging Period With Respect to the Relevant Index Business Day

Asset Class

Broad-Based	3.12%
Equities	
Fixed Income	25.28%
Emerging	0.91%
Markets	
Alternatives	20.94%
Commodities	0.91%
Inflation	36.30%
Cash	22.46%

Equivalent

The following chart sets forth the percentage of index business days during the period from August 29, 2008 to February 12, 2019 on which the underlying asset maximum weight restrictions reduced the weighting of the applicable index underlying assets due to its affect on some or all of the weight averaging period with respect to the relevant index business day. These percentages are based on the historical index information and hypothetical index data previously supplied above. You should not take the historical information or hypothetical data as an indication of the future performance of the index.

Percent of Index Business Days That Underlying Asset Maximum Weight Restriction Reduced an Index Underlying Asset Weighting or Prevented an Eligible Underlying Asset From Becoming an Index Underlying Asset Due to its Affect on Some or All of the Weight Averaging Period With Respect to the Relevant Index Business Day

Eligible Underlying Asset

SPDR® S&P 500® ETF	24.48%
Trust	
iShares® MSCI EAFE	10.41%
ETF	
iShares® MSCI Japan	9.16%
ETF	
iShares® 20+ Year	24.52%
Treasury Bond ETF	
iShares® iBoxx \$	22.54%
Investment Grade	
Corporate Bond ETF	
iShares® iBoxx \$ High	20.56%
Yield Corporate Bond	
ETF	34.70%

iShares® 7-10 Year Treasury Bond ETF	
iShares® MSCI Emerging Markets ETF	0.91%
iShares® U.S. Real Estate ETF	2.77%
iShares® Preferred and Income Securities ETF	45.80%
iShares® Nasdaq Biotechnology ETF	24.67%
SPDR® S&P® Oil & Gas Exploration & Production ETF	0.00%
SPDR® Gold Trust	5.21%
iShares® TIPS Bond ETF	36.30%
Money Market Position	22.46%

The index ratably rebalanced some or all of the exposure to the index ETFs into the money market position on 23.34% of the total return index rebalancing days during the period from August 29, 2008 to February 12, 2019, based on the historical index information and hypothetical index data previously supplied above. Daily total return index rebalancing occurs on some daily base index rebalancing days because daily base index rebalancing is based on realized volatility over the three realized volatility look-back periods (the prior six months, three months and one month for the nine-month, six-month and three-month return look-back periods, respectively) and the daily total return index rebalancing mechanic is based on the realized volatility of the base index for the applicable volatility cap period, which is the prior one month. You should not take the historical information or hypothetical data as an indication of the future performance of the index.

The following chart displays the percentage of index exposure to the index underlying assets during the period from August 29, 2008 to February 12, 2019 based on the historical index information and hypothetical index data previously supplied above. (In the chart, this historical information can be found to the right of the vertical solid line marker.) A

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percentage less than 100% means that a daily total return index rebalancing has occurred, reducing exposure in the existing ETFs and increasing exposure to the money market position. You should not take the historical information or hypothetical data as an indication of the future performance of the index.

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### Examples of Index Return Calculations

The following examples are provided to illustrate how the return on the index is calculated on an index business day given the key assumptions specified below. The examples assume the specified index underlying assets specified below. The return of the index underlying assets will be calculated as the sum of the products, as calculated for each index underlying asset, of the return for each index underlying asset multiplied by its weighting, expressed as a percentage. The examples are based on a range of final levels for the specified index underlying assets that are entirely hypothetical; no one can predict which eligible underlying assets will be chosen as index underlying assets on any day, the weightings of the index underlying assets or what the returns will be for any index underlying assets. The actual performance of the index on any index business day may bear little relation to the hypothetical examples shown below or to the historical index performance information and hypothetical performance data shown elsewhere in this prospectus supplement. These examples should not be taken as an indication or prediction of future performance of the index and investment results. The numbers in the examples below have been rounded for ease for analysis.

#### Key Assumptions

Index underlying assets during hypothetical period and percentage weighting	EEM 20%
	LQD 5%
	IYR 20%
	PFF 5%
	Money Market Position 50%
Notional interest rate	6% per annum

Neither an index market disruption event nor a non-index business day occurs.

No change in or affecting any of the index underlying assets, index stocks or the policies of the applicable investment advisor or the method by which the underlying indices are calculated.

No dividends are paid on any index ETF.

Example 1: Each index underlying asset appreciates. The sum of the weighted returns of each index underlying asset is greater than the sum of the notional interest rate plus the accrued portion of the 0.65% per annum for the day. The volatility cap is never breached.

	Column A	Column B	Column C	Column D	Column E
Index Underlying Asset (Ticker)	Hypothetical Initial Level	Hypothetical Final Level	Return of Index Underlying Asset (Column B / Column A)-1	Weighting	Column C x Column D
EEM	100.000	100.500	0.500%	20.000%	0.100%
LQD	100.000	100.750	0.750%	5.000%	0.038%
IYR	100.000	101.000	1.000%	20.000%	0.200%
PFF	100.000	101.250	1.250%	5.000%	0.063%
Money Market Position	100.000	100.017	0.017%	50.000%	0.008%
				Return of Index Underlying Assets:	0.408%
				Return of Notional Cash Investment in the Notional Interest Rate:	0.017%
				Accrued Portion of the 0.65% Per Annum:	0.002%
				Index Return:	0.390%

In this example, the index underlying assets all had positive returns. The return of the index underlying assets prior to adjustment for the notional interest rate and the accrued portion of the 0.65% per annum for the day equals 0.408% for the day and, once the notional interest rate for the day and accrued portion of the 0.65% per annum for the day are subtracted, the return of the index for the day equals 0.390%.

Example 2: Each index underlying asset appreciates. The sum of the weighted returns of each index underlying asset is less than the sum of the notional interest rate plus the accrued portion of the 0.65% per annum for the day. The volatility cap is never breached.

	Column A	Column B	Column C	Column D	Column E
Index Underlying Asset (Ticker)	Hypothetical Initial Level	Hypothetical Final Level	Return of Index Underlying Asset (Column B / Column A)-1	Weighting	Column C x Column D
EEM	100.000	100.010	0.010%	20.000%	0.002%
LQD	100.000	100.010	0.010%	5.000%	0.001%
IYR	100.000	100.010	0.010%	20.000%	0.002%
PFF	100.000	100.010	0.010%	5.000%	0.001%
Money Market Position	100.000	100.017	0.017%	50.000%	0.008%
				Return of Index Underlying Assets:	0.013%
				Return of Notional Cash Investment in the Notional Interest Rate:	0.017%
				Accrued Portion of the 0.65% Per Annum:	0.002%
				Index Return:	-0.005%

In this example, the index underlying assets all had positive returns. The return of the index underlying assets prior to adjustment for the notional interest rate equals 0.013% for the day and, since the sum of the notional interest rate plus the accrued portion of the 0.65% per annum for the day is greater than such return, once the notional interest rate for the day and accrued portion of the 0.65% per annum for the day are subtracted, the return of the index for the day is negative and equals -0.005%.

Example 3: Each index underlying asset depreciates. The volatility cap is never breached.

	Column A	Column B	Column C	Column D	Column E
Index Underlying Asset (Ticker)	Hypothetical Initial Level	Hypothetical Final Level	Return of Index Underlying Asset (Column B / Column A)-1	Weighting	Column C x Column D
EEM	100.000	99.500	-0.500%	20.000%	-0.100%
LQD	100.000	99.250	-0.750%	5.000%	-0.038%
IYR	100.000	99.000	-1.000%	20.000%	-0.200%
PFF	100.000	98.750	-1.250%	5.000%	-0.063%
Money Market Position	100.000	100.017	0.017%	50.000%	0.008%
				Return of Index Underlying Assets:	-0.392%
				Return of Notional Cash Investment in the Notional Interest Rate:	
				Accrued Portion of the 0.65% Per Annum:	0.002%
				Index Return:	-0.410%

In this example, the index underlying assets all had negative returns. The return of the index underlying assets prior to adjustment for the notional interest rate and the accrued portion of the 0.65% per annum for the day equals -0.392% for the day and once the notional interest rate for the day and accrued portion of the 0.65% per annum for the day are subtracted the return of the index for the day is further reduced and equals -0.410%.

Example 4: The index underlying assets have mixed returns. The volatility cap is never breached.

	Column A	Column B	Column C	Column D	Column E
Index Underlying Asset (Ticker)	Hypothetical Initial Level	Hypothetical Final Level	Return of Index Underlying Asset (Column B / Column A)-1	Weighting	Column C x Column D
EEM	100.000	100.500	0.500%	20.000%	0.100%
LQD	100.000	100.750	0.750%	5.000%	0.038%
IYR	100.000	99.000	-1.000%	20.000%	-0.200%
PFF	100.000	98.750	-1.250%	5.000%	-0.063%
Money Market Position	100.000	100.017	0.017%	50.000%	0.008%
				Return of Index Underlying Assets:	-0.117%
				Return of Notional Cash Investment in the Notional Interest Rate:	
				Accrued Portion of the 0.65% Per Annum:	0.002%
				Index Return:	-0.135%

In this example, three of the index underlying assets had a negative return and two had positive returns. The return of the index underlying assets prior to adjustment for the notional interest rate and the accrued portion of the 0.65% per annum for the day equals -0.117% for the day and, once the notional interest rate for the day and accrued portion of the 0.65% per annum for the day are subtracted, the return of the index for the day is further reduced and equals -0.135%.



Example 5: As a result of daily total return index rebalancing, the index ratably rebalances into the money market position on an index business day.

		Column A	Column B	Column C	Column D	Column E
	Index Underlying Asset (Ticker)	Hypothetical Initial Level	Hypothetical Final Level	Return of Index Underlying Asset (Column B / Column A)-1	Weighting	Column C x Column D
With Initial Exposure to the Money Market Position (prior to daily total return index rebalancing)	EEM	100.000	100.500	0.500%	20.000%	0.100%
	LQD	100.000	100.750	0.750%	5.000%	0.038%
	IYR	100.000	101.000	1.000%	20.000%	0.200%
	PFF	100.000	101.250	1.250%	5.000%	0.063%
	Money Market Position	100.000	100.017	0.017%	50.000%	0.008%
						Return of Index Underlying Assets: Return of Notional Cash Investment in the Notional Interest Rate: Accrued Portion of the 0.65% Per Annum: Index Return:

		Column A	Column B	Column C	Column D	Column E
	Index Underlying Asset (Ticker)	Hypothetical Initial Level	Hypothetical Final Level	Return of Index Underlying Asset (Column B / Column A)-1	Weighting	Column C x Column D
With Additional Exposure to the Money Market Position (after daily total return index rebalancing)	EEM	100.000	100.500	0.500%	16.000%	0.080%
	LQD	100.000	100.750	0.750%	4.000%	0.030%
	IYR	100.000	101.000	1.000%	16.000%	0.160%
	PFF	100.000	101.250	1.250%	4.000%	0.050%
	Money Market Position	100.000	100.017	0.017%	60.000%	0.010%
					Return of Index Underlying Assets:	0.330%
					Return of Notional Cash Investment in the Notional Interest Rate:	0.017%
					Accrued Portion of the 0.65% Per Annum:	0.002%
					Index Return:	0.312%

In this example, in order to highlight the effect of rebalancing into the money market position as a result of daily total return index rebalancing, we have assumed that the realized volatility for the applicable cap period exceeds the volatility cap by 1.5%, thereby reducing the exposure to the base index (and, consequently, each index underlying asset) by 20%. We have shown what the index underlying assets' returns would have been for the index business day both without and with the daily total return index rebalancing. Since the returns on EEM, LQD, IYR and PFF were higher than the money market position, the increased weighting to the money market position for the index business day caused the return of the index to be lower than it would have been without the daily total return index rebalancing feature.

We cannot predict which eligible underlying assets will be chosen as index underlying assets on any day, the weights of the index underlying assets or what the final levels will be for any index underlying assets or the notional interest rate. The actual amount that you will receive maturity and the rate of return on the offered notes will depend on the performance of the index which will be determined by the index underlying assets chosen and their weightings.

## THE ELIGIBLE UNDERLYING ASSETS

The defined terms provided in the description of each eligible underlying asset apply only in the description in which they are used. Unless otherwise indicated, these definitions are not intended to be used in other sections of this prospectus supplement.

The eligible underlying asset descriptions below are provided in the following order:

Broad-Based Equities	SPDR <sup>®</sup> S&P 500 <sup>®</sup> ETF Trust	SPY
	iShares <sup>®</sup> MSCI EAFE ETF	EFA
	iShares <sup>®</sup> MSCI Japan ETF	EWJ
Fixed Income	iShares <sup>®</sup> 20+ Year Treasury Bond ETF	TLT
	iShares <sup>®</sup> iBoxx \$ Investment Grade Corporate Bond ETF	LQD
	iShares <sup>®</sup> iBoxx \$ High Yield Corporate Bond ETF	HYG
	iShares <sup>®</sup> 7-10 Year Treasury Bond ETF	IEF
Emerging Markets	iShares <sup>®</sup> MSCI Emerging Markets ETF	EEM
Alternatives	iShares <sup>®</sup> U.S. Real Estate ETF	IYR
	iShares <sup>®</sup> Preferred and Income Securities ETF	PFF
	iShares <sup>®</sup> Nasdaq Biotechnology ETF	IBB
Commodities	SPDR <sup>®</sup> S&P <sup>®</sup> Oil & Gas Exploration & Production ETF	XOP
	SPDR <sup>®</sup> Gold Trust	GLD
Inflation	iShares <sup>®</sup> TIPS Bond ETF	TIP
Cash Equivalent	Money Market Position	N/A
Some Common Concepts		

Each of the eligible ETFs may be an exchange-traded fund, a unit investment trust, a commodity pool or another entity. Each description of an eligible ETF provides information about the particular structure (type of entity) of that eligible ETF. Each of the eligible ETFs files information with the SEC. Information provided to or filed with the SEC can be inspected and copied at the public reference facilities maintained by the SEC or through the SEC's website at [sec.gov](http://sec.gov). The descriptions below will provide the "CIK number" for each of the eligible ETFs, which is an identifying number that will assist you in finding information about the eligible ETFs filed with the SEC.

Each of the eligible ETFs also has certain concepts in common with most or all of the other eligible ETFs. We have described some of these common concepts below.

## Investment Objective

The investment objective of most eligible ETFs is to achieve investment results that correspond generally to the price and yield performance, before fees and expenses, of a particular index. That type of eligible ETF, sometimes called a "tracking ETF," uses a passive or indexing approach to try to achieve the ETF's investment objective. The investment advisor to the ETF does not try to beat the index; the ETF tracks and does not seek temporary defensive positions when markets decline or appear overvalued. This means, among other things, that a tracking ETF typically will not sell a particular holding just because it is performing poorly. Instead, the ETF seeks to track the index regardless of whether the index level is increasing or decreasing. The descriptions below will indicate the investment objective of

each ETF and will indicate which index a particular ETF tracks if it is a tracking ETF. The description also will state how much of the ETF's assets generally will be invested in the securities in the index and what else the ETF may invest in. The descriptions also will state the strategy the investment advisor uses to track the index.

The eligible ETFs that track an equity index seek to track the performance of the "total return" version of such index. A total return index represents the total return earned in a portfolio that tracks the price return index and reinvests dividend income in the overall index, not in the specific stock paying the dividend. The difference between the price return calculation and the total return calculation of an index is that, with respect to the price return calculation, changes in the index level reflect changes in stock prices, whereas with respect to the total return calculation of the index, changes in the index level reflect both movements in stock prices and the reinvestment of dividend income. In addition, some of the eligible ETFs track an index that is calculated on a net daily total return basis, which tracks the price return index and reinvests dividend income in the overall index, except that the dividend income is reinvested net of certain withholding taxes. Notwithstanding an eligible ETF's investment objective to track the performance of the total return version of an index, the return on your notes will not reflect any dividends paid on the ETF shares, on the securities purchased by the ETF or on the securities that comprise the index such ETF tracks. See "Additional Risk Factors Specific to Your Notes —

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You Have No Shareholder Rights or Rights to Receive Any Shares or Units of Any Eligible ETF, or Any Assets Held by Any Eligible ETF or the Money Market Position” on page S-22 of this prospectus supplement.

### Tracking Error

In the case of a tracking ETF, as described above, the difference between the performance of the ETF over a period of time and the performance of the index over such period of time is called the “tracking error” over that period of time. This is typically measured as the difference between the ETF’s returns and the index returns over the same period of time. This is also sometimes referred to as the “correlation” between the index and the tracking ETF. An index and ETF are perfectly correlated if the correlation is 1.00 (i.e., the tracking error is 0.00%). Tracking errors can result for a variety of reasons, but one of the common reasons is that an index is a theoretical financial calculation of the performance of certain assets, but an eligible ETF holds an actual investment portfolio. The descriptions below will discuss some of the additional reasons for tracking errors in the eligible ETFs. The eligible ETFs provide information about the performance of the index and the performance of the eligible ETF for the same period. In some cases, the eligible ETFs assume reinvestment of share distributions when calculating the performance of the market price of the shares.

### Creation Units

Prior to trading in the secondary market, shares of an eligible ETF are issued at net asset value to certain institutional investors (typically market makers or other broker-dealers) only in large block-size units, known as creation units. As a practical matter, only institutions, market makers or large investors purchase or redeem creation units. Except when aggregated in creation units (or upon the liquidation of the ETF), shares of an eligible ETF are not redeemable securities. The descriptions below will describe the size of the creation units for each eligible ETF. For most investors, the important thing to know is that redemptions of creation units may cause temporary dislocations in tracking errors for tracking ETFs.

### Investment Advisor

Each of the eligible ETFs has an investment advisor. Depending on the structure of the eligible ETF, there may be other key roles with respect to that eligible ETF. Those roles and the entities that perform them will be described below.

### Indicative Values, Net Asset Value and Share Prices

Each of the eligible ETFs calculates a net asset value, or NAV, at the end of each trading day. This value represents the value of the eligible ETF’s assets less any applicable fees and expenses. The actual trading price of an eligible ETF’s shares or units in the secondary market generally differs (and may deviate significantly during periods of market volatility) from the eligible ETF’s daily net asset value. This is because the trading price is affected by market forces such as supply and demand, economic conditions and other factors.

The eligible ETFs are required for regulatory reasons to disseminate an approximate net asset value, often called an “indicative value,” every fifteen seconds throughout the trading day. These indicative values are disseminated by information providers or market data vendors. These approximate or indicative values should not be viewed as a “real-time” update of the net asset value of the ETF, because the approximate value may not be calculated in the same manner as the net asset value, which is computed once a day. The approximate value is generally based on quotes and closing prices from the securities’ local market and may not reflect events that occur subsequent to the local market’s close. In most cases, the approximate value is not calculated by the eligible ETF and may not be calculated using the same methodology. In any event, for purposes of your notes and the index, the trading prices of the shares or units of

the eligible ETFs included in the calculation of the index will be based on the trading prices alone and not the NAV or these approximate values.

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## SPDR® S&P 500® ETF Trust

The units of the SPDR® S&P 500® ETF Trust (the “units”) are issued by SPDR® S&P 500® ETF Trust (the “trust”), a unit investment trust that is a registered investment company.

The trust is like a tracking ETF in that it seeks investment results which correspond generally to the price and yield performance, before fees and expenses, of the index.

The index it tracks is the S&P 500® Index (the “index”).

The trust does not have an investment advisor. Its investments are adjusted by the trustee.

Trustee: State Street Global Advisors Trust Company.

Trust sponsor: PDR Services, LLC.

The units trade on the NYSE Arca under the ticker symbol “SPY”.

The trust’s SEC CIK Number is 0000884394.

The inception date for purposes of the units was January 22, 1993.

The trust’s units are issued or redeemed only in creation units of 50,000 units.

We obtained the following fee information from the trust’s publicly available information without independent verification. The Trustee is entitled to receive a fee for services performed for the trust corresponding to the net asset value of the trust, at an annual rate of 0.10% per annum for the first \$499,999,999 of assets, 0.08% per annum for assets over \$499,999,999 and up to \$2,499,999,999 and 0.06% per annum for assets of \$2,500,000,000 or more (in each case reduced or increased by an adjustment amount for transaction fees, creation and redemption expenses and interest earned on cash). As of December 31, 2018, the trust’s gross expense ratio is 0.0945% per annum. The trustee has agreed to waive a portion of its fee until February 1, 2018 to the extent operating expenses exceed 0.0945% after earnings credits are applied. After February 1, 2018, the trustee may discontinue this fee waiver.

For additional information regarding SPDR® S&P 500® ETF Trust, please consult the reports (including the Annual Report to Shareholders on Form N30-D for the fiscal year ended September 30, 2018) and other information the trust files with the SEC. Additional information regarding the trust, including its top portfolio holdings, may be obtained from other sources including, but not limited to, press releases, newspaper articles, other publicly available documents, and the SPDR® S&P 500® ETF Trust website at [spdrs.com/product/fund.seam?ticker=SPY](http://spdrs.com/product/fund.seam?ticker=SPY). We are not incorporating by reference the website, the sources listed above or any material they include in this prospectus supplement.

## Investment Objective and Strategy

The trust seeks investment results that, before expenses, correspond generally to the price and yield performance of the index. The trust strives to achieve its investment objective by holding a portfolio of the common stocks that are included in the index, with the weight of each stock in the trust’s portfolio substantially corresponding to the weight of such stock in the index. Although the trust may fail to own certain securities included in the index at any particular time, the trust generally will be substantially invested in index securities.

To maintain the correspondence between the composition and weightings of the common stocks that are actually held by the trust and the common stocks that are included in the index, the trustee adjusts the trust portfolio from time to time to conform to periodic changes made by the index sponsor to the identity and/or relative weightings of the common stocks that are included in the index. The trustee aggregates certain of these adjustments and makes changes to the trust’s portfolio at least monthly, or more frequently in the case of significant changes to the index. The trust does not hold or trade futures or swaps and is not a commodity pool.

The following table displays the top ten holdings and weightings by industry sector of the trust and index. (Sector designations are determined by the trust sponsor using criteria it has selected or developed. Index and trust sponsors may use very different standards for determining sector designations. In addition, many companies operate in a number of sectors, but are listed in only one sector and the basis on which that sector is selected may also differ. As a result, sector comparisons between indices or trusts with different sponsors may reflect differences in methodology as well as actual differences in the sector composition of the indices or trusts.) We obtained the information in the tables below from the trust website without independent verification.

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## Top Ten Holdings of Trust and Index as of February 12, 2019

Trust Issuer	Percentage of Trust (%)	Index Issuer	Percentage of Index (%)
MICROSOFT CORPORATION	3.58%	MICROSOFT CORPORATION	3.58%
APPLE INC.	3.34%	APPLE INC.	3.34%
AMAZON.COM INC.	2.92%	AMAZON.COM INC.	2.92%
BERKSHIRE HATHAWAY INC. CLASS B	1.74%	BERKSHIRE HATHAWAY INC. CLASS B	1.74%
FACEBOOK INC. CLASS A	1.72%	FACEBOOK INC. CLASS A	1.72%
JOHNSON & JOHNSON	1.56%	JOHNSON & JOHNSON	1.56%
ALPHABET INC. CLASS C	1.50%	ALPHABET INC. CLASS C	1.50%
JPMORGAN CHASE & CO.	1.48%	JPMORGAN CHASE & CO.	1.48%
ALPHABET INC. CLASS A	1.46%	ALPHABET INC. CLASS A	1.46%
EXXON MOBIL CORPORATION	1.39%	EXXON MOBIL CORPORATION	1.39%

## Weighting by Sector of Trust and Index as of February 12, 2019\*

Sector	Percentage of Trust (%)	Percentage of Index (%)
Information Technology	20.37%	20.36%
Financials	13.38%	13.36%
Health Care	14.95%	14.96%
Consumer Discretionary	9.98%	9.97%
Consumer Staples	7.24%	7.24%
Industrials	9.70%	9.71%
Energy	5.39%	5.39%
Utilities	3.18%	3.19%
Real Estate	2.99%	3.00%
Materials	2.66%	2.67%
Communication Services	10.15%	10.15%

\*The Global Industry Classification Structure, which S&P Dow Jones Indices LLC utilizes to classify the constituents of the index, was updated in September 2018. Please see “ The S&P 500 Index” below for additional information about these updates.

## Correlation

Although the trust intends to track the performance of the index as closely as possible, the trust’s return may not match or achieve a high degree of correlation with the return of the index due to expenses and transaction costs incurred in adjusting the portfolio. In addition, it is possible that the trust may not always fully replicate the performance of the index due to unavailability of certain index securities in the secondary market or due to other extraordinary circumstances (e.g., if trading in a security has been halted).

For the period ended January 31, 2019, the SPDR® website gave the following performance figures for market price of a unit and the index: unit—1 year on an annualized basis, -2.46%; 3 years on an annualized basis, 13.89%; 5 years on an annualized basis, 10.83%; 10 years on an annualized basis, 14.83%; since inception on an annualized basis, 9.28%; index—1 year on an annualized basis, -2.31%; 3 years on an annualized basis, 14.02%; 5 years on an annualized basis,

10.96%; 10 years on an annualized basis, 15.00%; since inception on an annualized basis, 9.42%.

#### Unit Dividends

Holders of units receive dividends on the last business day of each April, July, October and January in an amount corresponding to the amount of any cash dividends declared on the common stocks held by the trust, net of the fees and expenses associated with the operation of the trust, and taxes, if applicable. Because of the fees and expenses, the dividend yield for units is ordinarily less than the hypothetical dividend yield of the index. The unit dividends will be reflected in the calculation of the index as described under “— Calculation of the Total Return of the Index” on page S-70 below.

#### The S&P 500<sup>®</sup> Index

The index includes a representative sample of 500 companies in leading industries of the U.S. economy. The 500 companies are not the 500 largest companies listed on the NYSE and not all 500 companies are listed on the NYSE. S&P chooses companies for inclusion in the index with an aim of achieving a distribution by broad industry groupings that approximates the distribution of these groupings in the common stock population of the U.S. equity market. Although the index contains 500 constituent companies, at any one time it may contain greater than 500 constituent trading lines since some companies included in the index prior to July 31, 2017 may be represented by multiple share class lines in the

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index. The index is calculated, maintained and published by S&P Dow Jones Indices LLC (the “S&P”). In addition, information may be obtained from other sources including, but not limited to, press releases, newspaper articles, other publicly available documents, and on the following websites: [us.spindices.com/indices/equity/SP-500](http://us.spindices.com/indices/equity/SP-500) and [spdji.com](http://spdji.com). We are not incorporating by reference the websites, the sources listed above or any material they include in this prospectus supplement.

S&P intends for the index to provide a performance benchmark for the large-cap U.S. equity markets. Constituent changes are made on an as-needed basis and there is no schedule for constituent reviews. Constituent changes are generally announced one to five business days prior to the change. Relevant criteria for additions to the index that are employed by S&P include: the company proposed for addition should have an unadjusted company market capitalization of \$6.1 billion or more (for spin-offs, eligibility is determined using when-issued prices, if available); using composite pricing and volume, the ratio of annual dollar value traded in the proposed constituent to float-adjusted market capitalization of that company should be 1.00 or greater and the stock should trade a minimum of 250,000 shares in each of the six months leading up to the evaluation date; the company must be a U.S. company (characterized as a Form 10-K filer whose U.S. portion of fixed assets and revenues constitutes a plurality of the total and with a primary listing of the common stock on the NYSE, NYSE Arca, NYSE American (formerly NYSE MKT), NASDAQ Global Select Market, NASDAQ Select Market, NASDAQ Capital Market, Bats BZX, Bats BYX, Bats EDGA, Bats EDGX or IEX (each, an “eligible exchange”)); the proposed constituent has a public float of 50% or more of its stock; the inclusion of the company will contribute to sector balance in the index relative to sector balance in the market in the relevant market capitalization range; financial viability (the sum of the most recent four consecutive quarters’ Generally Accepted Accounting Principles (GAAP) earnings (net income excluding discontinued operations) should be positive as should the most recent quarter); and, for IPOs, the company must be traded on an eligible exchange for at least twelve months. In addition, constituents of the S&P MidCap 400<sup>®</sup> Index and the S&P SmallCap 600<sup>®</sup> Index can be added to the index without meeting the financial viability, public float and/or liquidity eligibility criteria if the S&P Index Committee decides that such an addition will enhance the representativeness of the index as a market benchmark. Certain types of organizational structures and securities are always excluded, including business development companies (BDCs), limited partnerships, master limited partnerships, limited liability companies (LLCs), OTC bulletin board issues, closed-end funds, ETFs, ETNs, royalty trusts, tracking stocks, preferred stock and convertible preferred stock, unit trusts, equity warrants, convertible bonds, investment trusts, rights and American depositary receipts (ADRs). Stocks are deleted from index when they are involved in mergers, acquisitions or significant restructurings such that they no longer meet the inclusion criteria, and when they substantially violate one or more of the addition criteria. Stocks that are delisted or moved to the pink sheets or the bulletin board are removed, and those that experience a trading halt may be retained or removed in S&P’s discretion. S&P evaluates additions and deletions with a view to maintaining index continuity.

For constituents included in the index prior to July 31, 2017, all publicly listed multiple share class lines are included separately in the index, subject to, in the case of any such share class line, that share class line satisfying the liquidity and float criteria discussed above and subject to certain exceptions. It is possible that one listed share class line of a company may be included in the index while a second listed share class line of the same company is excluded. For companies that issue a second publicly traded share class to index share class holders, the newly issued share class line is considered for inclusion if the event is mandatory and the market capitalization of the distributed class is not considered to be de minimis.

As of July 31, 2017, companies with multiple share class lines are no longer eligible for inclusion in the index. Constituents of the index prior to July 31, 2015 with multiple share class lines will be grandfathered in and continue to be included in the index. If an index constituent reorganizes into a multiple share class line structure, that company will be reviewed for continued inclusion in the index at the discretion of the S&P Index Committee.

S&P divides the 500 companies included in the index into eleven Global Industry Classification Sectors: Consumer Discretionary, Consumer Staples, Energy, Financials, Health Care, Industrials, Information Technology, Materials, Real Estate, Telecommunication Services and Utilities. As of the close of business on September 21, 2018, S&P and MSCI, Inc. updated the Global Industry Classification Sector structure. Among other things, the update broadened the Telecommunications Services sector and renamed it the Communication Services sector. The renamed sector includes the previously existing Telecommunication Services Industry group, as well as the Media Industry group, which was moved from the Consumer Discretionary sector and renamed the Media & Entertainment Industry group. The Media & Entertainment Industry group contains three industries: Media, Entertainment and Interactive Media & Services. The Media industry continues to consist of the Advertising, Broadcasting, Cable & Satellite and Publishing sub-industries. The Entertainment industry contains the Movies & Entertainment sub-industry (which includes online entertainment streaming companies in addition to companies previously classified in such industry prior to September 21, 2018) and the Interactive Home Entertainment sub-industry (which includes companies previously classified in the Home Entertainment Software sub-industry prior to September 21, 2018 (when the Home Entertainment Software sub-industry was a sub-industry in the Information Technology sector)), as well as producers of interactive gaming products, including mobile gaming applications). The Interactive Media & Services industry and sub-industry includes companies engaged in content and information creation or distribution through proprietary platforms, where revenues are derived primarily through pay-per-click advertisements, and includes search engines, social media and networking platforms, online classifieds and online

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review companies. The Global Industry Classification Sector structure changes are effective for the S&P 500® Index as of the open of business on September 24, 2018 to coincide with the September 2018 quarterly rebalancing.

#### Calculation of the Total Return of the Index

The trust tracks the performance of the total return version of the index and the index is calculated using a base-weighted aggregative methodology. The total return calculation begins with the price return of the index. The value of the price return index on any day for which an index value is published is determined by a fraction, the numerator of which is the aggregate of the market price of each stock in the index times the number of shares of such stock included in the index, and the denominator of which is the divisor, which is described more fully below. The “market value” of any underlier stock is the product of the market price per share of that stock times the number of the then-outstanding shares of such underlier stock that are then included in the index.

The index is also sometimes called a “base-