

GOLDMAN SACHS GROUP INC
Form 424B2
October 31, 2018

Filed Pursuant to Rule 424(b)(2)
Registration Statement No. 333-219206

The information in this preliminary pricing supplement is not complete and may be changed. This preliminary pricing 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 October 30, 2018.

GS Finance Corp.

\$

Callable Contingent Coupon Index-Linked Notes due
guaranteed by

The Goldman Sachs Group, Inc.

The notes will not pay a fixed coupon and may pay no coupon on a payment date. The amount that you will be paid on your notes is based on the performances of the NASDAQ-100 Index[®] and the Russell 2000[®] Index. The notes will mature on November 30, 2028, unless we redeem them.

We may redeem your notes at 100% of their face amount plus any coupon then due on any payment date (expected to be the last calendar day of each February and the 30th day of each May, August and November, commencing in February 2019 and ending on the stated maturity date) on or after the payment date in November 2019 up to the payment date in August 2028.

If we do not redeem your notes, if the closing level of each index is greater than or equal to 75% of its initial level (set on the trade date, expected to be November 28, 2018) on a coupon observation date (expected to be the tenth scheduled trading day for all indices prior to each payment date), you will receive on the applicable payment date a coupon of between \$21.25 and \$23.75 (set on the trade date) for each \$1,000 face amount of your notes. If the closing level of any index on a coupon observation date is less than 75% of its initial level, you will not receive a coupon on the applicable payment date.

If we do not redeem your notes, the amount that you will be paid on your notes at maturity, in addition to the final coupon, if any, is based on the performance of the lesser performing index (the index with the lowest index return). The index return for each index is the percentage increase or decrease in the final level of such index on the final determination date from its initial level.

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

if the index return of each index is greater than or equal to -25% (the final level of each index is greater than or equal to 75% of its initial level), \$1,000 plus the final coupon of between \$21.25 and \$23.75;

if the index return of each index is greater than or equal to -40% (the final level of each index is greater than or equal to 60% of its initial level) but the index return of any index is less than -25% (the final level of any index is less than 75% of its initial level), \$1,000. You will not receive a coupon; or

if the index return of any index is less than -40% (the final level of any index is less than 60% of its initial level), the sum of (i) \$1,000 plus (ii) the product of (a) the lesser performing index return times (b) \$1,000. You will receive less than 60% of the face amount of your notes and you will not receive a final coupon.

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 PS-12.

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.

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Original issue date: expected to be November 30, 2018 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; Conflicts of Interest” on page PS-51.

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

Pricing Supplement No. dated , 2018.

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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 pricing 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 pricing supplement and the accompanying documents listed below. This pricing supplement constitutes a supplement to the documents listed below, does not set forth all of the terms of your notes and therefore should be read in conjunction with such documents:

General terms supplement no. 1,734 dated July 10, 2017

Prospectus supplement dated July 10, 2017

Prospectus dated July 10, 2017

The information in this pricing 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 pricing supplement as the "offered notes" or the "notes". Each of the offered notes has the terms described below. Please note that in this pricing 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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TERMS AND CONDITIONS

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

These terms and conditions relate to pricing supplement no. dated ,2018 of GS Finance Corp. and The Goldman Sachs Group, Inc. with respect to the issuance by GS Finance Corp. of its Callable Contingent Coupon 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: 40056EDT2/ US40056EDT29

Company (Issuer): GS Finance Corp.

Guarantor: The Goldman Sachs Group, Inc.

Underliers (each individually, an underlier): the NASDAQ-100 Index® (current Bloomberg symbol: “NDX Index”), or any successor underlier, and the Russell 2000® Index (current Bloomberg symbol: “RTY Index”), or any successor underlier, as each 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: Subject to redemption by the company as provided under “— Company’s redemption right ” below, on the stated maturity date, in addition to the final coupon, if any, the company will pay, for each \$1,000 of the outstanding face amount, an amount, if any, in cash equal to the cash settlement amount.

Cash settlement amount:

·if the final underlier level of each underlier is greater than or equal to its trigger buffer level, \$1,000; or
· if the final underlier level of any underlier is less than its trigger buffer level, the sum of (i) \$1,000 plus (ii) the product of (a) the lesser performing underlier return times (b) \$1,000.

Company’s redemption right: the company may redeem the notes, at its option, in whole but not in part, on each coupon payment date commencing in November 2019 and ending in August 2028 for an amount in cash for each \$1,000 of the outstanding face amount on the redemption date equal to 100% of such \$1,000 face amount plus any coupon then due.

If the company chooses to exercise the company’s redemption right, it will notify the holder of your notes and the trustee by giving at least ten business days’ prior notice. The day the company gives the notice, which will be a business day, will be the redemption notice date and the immediately following coupon payment date, which the company will state in the redemption notice, will be the redemption date.

The company will not give a redemption notice that results in a redemption date later than the August 2028 coupon payment date. A redemption notice, once given, shall be irrevocable.

Initial underlier level (set on the trade date): with respect to an underlier, the closing level of such underlier on the trade date

Final underlier level: with respect to an underlier, the closing level of such underlier on the determination date, subject to adjustment as provided in “— Consequences of a market disruption event or non-trading day” and “— Discontinuance or modification of an underlier” below

Underlier return: with respect to an underlier on the determination date, the quotient of (i) its final underlier level minus its initial underlier level divided by (ii) its initial underlier level, expressed as a positive or negative percentage

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Lesser performing underlier return: the underlier return of the lesser performing underlier

Lesser performing underlier: the underlier with the lowest underlier return

Trigger buffer level: for each underlier, 60% of its initial underlier level

Coupon: subject to the company's redemption right, on each coupon payment date, for each \$1,000 of the outstanding face amount, the company will pay an amount in cash equal to:

· if the closing level of each underlier on the related coupon observation date is greater than or equal to its coupon trigger level, between \$21.25 and \$23.75; or

· if the closing level of any underlier on the related coupon observation date is less than its coupon trigger level, \$0

Coupon trigger level: for each underlier, 75% of its initial underlier level

Trade date: expected to be November 28, 2018

Original issue date (set on the trade date): expected to be November 30, 2018

Determination date: the last coupon observation date, expected to be November 15, 2028, subject to adjustment as described under “— Coupon observation dates” below. If the stated maturity date is postponed due to a non-business day as described under “Stated maturity date” below, such postponement of the stated maturity date will not postpone the determination date.

Stated maturity date (set on the trade date): expected to be November 30, 2028, unless that day is not a business day, in which case the stated maturity date will be postponed to the next following business day. If the determination date is postponed as described under “— Determination date” above, such postponement of the determination date will not postpone the stated maturity date.

Coupon observation dates (set on the trade date): expected to be the tenth scheduled trading day for all underliers prior to each coupon payment date, unless the calculation agent determines that, with respect to any underlier, a market disruption event occurs or is continuing on that day or that day is not otherwise a trading day. If a coupon payment date is postponed due to a non-business day as described under “— Coupon payment dates” below, such postponement of the coupon payment date will not postpone the related coupon observation date.

In the event the originally scheduled coupon observation date is a non-trading day with respect to any underlier, the coupon observation date will be the first day thereafter that is a trading day for all underliers (the “first qualified coupon trading day”) provided that no market disruption event occurs or is continuing with respect to an underlier on that day. If a market disruption event with respect to an underlier occurs or is continuing on the originally scheduled coupon observation date or the first qualified coupon trading day, the coupon observation date will be the first following trading day on which the calculation agent determines that each underlier has had at least one trading day (from and including the originally scheduled coupon observation date or the first qualified coupon trading day, as applicable) on which no market disruption event has occurred or is continuing and the closing level of each underlier for that coupon observation date will be determined on or prior to the postponed coupon observation date as set forth under “— Consequences of a market disruption event or a non-trading day” below. (In such case, the coupon observation date may differ from the date on which the level of an underlier is determined for the purpose of the calculations to be performed on the coupon observation date.) In no event, however, will the coupon observation date be postponed by more than three scheduled trading days for all underliers from the originally scheduled coupon observation date either due to the occurrence of serial non-trading days or due to the occurrence of one or more market disruption events. (For the avoidance of doubt, a day that is a scheduled trading day for only one underlier will not count as one of the three scheduled trading days for this purpose.) On such last possible coupon observation date applicable to the relevant coupon payment date, if a market disruption event occurs or is continuing with respect to an underlier that has not yet had such a trading day on which no market disruption event has occurred or is continuing or if such last possible day is not a trading day with respect to such underlier, that day will nevertheless be the coupon observation date.

Coupon payment dates (set on the trade date): expected to be the last calendar day of each February and the 30th day of each May, August and November, commencing in February 2019 and ending on the stated maturity date, unless, for any such coupon payment date, that day is not a business day, in which case such coupon payment date will be postponed to the next following business day. If a coupon observation date is postponed as described under “— Coupon observation dates” above, such postponement of the coupon observation date will not postpone the related coupon payment date.

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Closing level: on any trading day, (i) with respect to the NASDAQ-100 Index[®], the official closing level of such underlier or any successor underlier published by the underlier sponsor on such trading day for such underlier and (ii) with respect to the Russell 2000[®] Index, the closing level of such underlier or any successor underlier reported by Bloomberg Financial Services, or any successor reporting service the company may select, on such trading day for that underlier (as of the trade date, whereas the underlier sponsor publishes the official closing level of the Russell 2000[®] Index to six decimal places, Bloomberg Financial Services reports the closing level to fewer decimal places)

Trading day: with respect to an underlier, a day on which the respective principal securities markets for all of the underlier stocks are open for trading, the underlier sponsor is open for business and such underlier is calculated and published by the underlier sponsor. A day is a scheduled trading day with respect to an underlier if, as of the trade date, the respective underlier sponsor is scheduled to be open for business, such underlier is expected to be calculated and published and the respective principal securities markets for all of its underlier stocks are scheduled to be open for trading on such day.

Successor underlier: with respect to an underlier, any substitute underlier approved by the calculation agent as a successor as provided under “— Discontinuance or modification of an underlier” below

Underlier sponsor: with respect to an underlier, at any time, the person or entity, including any successor sponsor, that determines and publishes such underlier as then in effect. The notes are not sponsored, endorsed, sold or promoted by any underlier sponsor or any affiliate thereof and no underlier sponsor or affiliate thereof makes any representation regarding the advisability of investing in the notes.

Underlier stocks: with respect to an underlier, at any time, the stocks that comprise such underlier as then in effect, after giving effect to any additions, deletions or substitutions

Market disruption event: With respect to any given trading day, any of the following will be a market disruption event with respect to an underlier:

a suspension, absence or material limitation of trading in underlier stocks constituting 20% or more, by weight, of the underlier on their respective primary markets, in each case for more than two consecutive hours of trading or during the one-half hour before the close of trading in that market, as determined by the calculation agent in its sole discretion,

a suspension, absence or material limitation of trading in option or futures contracts relating to the underlier or to underlier stocks constituting 20% or more, by weight, of such underlier in the respective primary markets for those contracts, in each case for more than two consecutive hours of trading or during the one-half hour before the close of trading in that market, as determined by the calculation agent in its sole discretion, or

underlier stocks constituting 20% or more, by weight, of the underlier, or option or futures contracts, if available, relating to an underlier or to underlier stocks constituting 20% or more, by weight, of the underlier do not trade on what were the respective primary markets for those underlier stocks or contracts, as determined by the calculation agent in its sole discretion,

and, in the case of any of these events, the calculation agent determines in its sole discretion that such event could materially interfere with the ability of the company or any of its affiliates or a similarly situated person to unwind all or a material portion of a hedge that could be effected with respect to this note.

The following events will not be market disruption events:

a limitation on the hours or numbers of days of trading, but only if the limitation results from an announced change in the regular business hours of the relevant market, and

a decision to permanently discontinue trading in option or futures contracts relating to an underlier or to any underlier stock.

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

a price change exceeding limits set by that market,

an imbalance of orders relating to that underlier stock or those contracts, or

a disparity in bid and ask quotes relating to that underlier stock or those contracts,

will constitute a suspension or material limitation of trading in that stock or those contracts in that market.

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A market disruption event with respect to one underlier will not, by itself, constitute a market disruption event for the other unaffected underlier.

As is the case throughout this pricing supplement, references to the underlier in this description of market disruption events includes any successor underlier as it may be modified, replaced or adjusted from time to time.

Consequences of a market disruption event or a non-trading day: With respect to any underlier, if a market disruption event occurs or is continuing on a day that would otherwise be a coupon observation date (and the determination date in the case of the last coupon observation date), or such day is not a trading day, then such coupon observation date will be postponed as described under “— Coupon observation dates” above. If any coupon observation date (and the determination date in the case of the last coupon observation date) is postponed to the last possible date due to the occurrence of serial non-trading days, the level of each underlier will be the calculation agent’s assessment of such level, in its sole discretion, on such last possible postponed coupon observation date (and the determination date in the case of the last coupon observation date). If any coupon observation date (and the determination date in the case of the last coupon observation date) is postponed due to a market disruption event with respect to any underlier, the closing level of each underlier with respect to such coupon observation date (and the final underlier level with respect to the determination date) will be calculated based on (i) for any underlier that is not affected by a market disruption event on the applicable originally scheduled coupon observation date or the first qualified coupon trading day thereafter (if applicable), the closing level of the underlier on that date, (ii) for any underlier that is affected by a market disruption event on the applicable originally scheduled coupon observation date or the first qualified coupon trading day thereafter (if applicable), the closing level of the underlier on the first following trading day on which no market disruption event exists for such underlier and (iii) the calculation agent’s assessment, in its sole discretion, of the level of any underlier on the last possible postponed coupon observation date with respect to such underlier as to which a market disruption event continues through the last possible postponed coupon observation date. As a result, this could result in the closing level on any coupon observation date (or final underlier level on the determination date) of each underlier being determined on different calendar dates. For the avoidance of doubt, once the closing level for an underlier is determined for a coupon observation date (or the determination date in the case of the last coupon observation date), the occurrence of a later market disruption event or non-trading day will not alter such calculation. Discontinuance or modification of an underlier: If an underlier sponsor discontinues publication of an underlier and such underlier sponsor or anyone else publishes a substitute underlier that the calculation agent determines is comparable to such underlier and approves as a successor underlier, or if the calculation agent designates a substitute underlier, then the calculation agent will determine the coupon payable, if any, on the relevant coupon payment date or the cash settlement amount on the stated maturity date, as applicable, by reference to such successor underlier. If the calculation agent determines on a coupon observation date or the determination date, as applicable, that the publication of an underlier is discontinued and there is no successor underlier, the calculation agent will determine the coupon or the cash settlement amount, as applicable, on the related coupon payment date or the stated maturity date, as applicable, by a computation methodology that the calculation agent determines will as closely as reasonably possible replicate such underlier.

If the calculation agent determines that an underlier, the underlier stocks comprising that underlier or the method of calculating that underlier 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 underlier or of the underlier stocks and whether the change is made by the underlier sponsor under its existing policies or following a modification of those policies, is due to the publication of a successor underlier, is due to events affecting one or more of the underlier stocks or their issuers or is due to any other reason — and is not otherwise reflected in the level of the underlier by the underlier sponsor pursuant to the then-current underlier methodology of the underlier, then the calculation agent will be permitted (but not required) to make such adjustments in such underlier or the method of its calculation as it believes are appropriate to ensure that the levels of such underlier used to determine the coupon or cash settlement amount, as applicable, on the related coupon payment date or the stated maturity date, as applicable, is equitable.

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

Regular record dates: the scheduled business day immediately preceding the day on which payment is to be made (as such payment date may be adjusted)

Calculation agent: Goldman Sachs & Co. LLC ("GS&Co.")

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Tax characterization: The holder, on behalf of itself and any other person having a beneficial interest in this note, hereby agrees with the company (in the absence of a change in law, an administrative determination or a judicial ruling to the contrary) to characterize this note for all U.S. federal income tax purposes as an income-bearing pre-paid derivative contract in respect of the underliers.

Overdue principal rate and overdue coupon rate: the effective Federal Funds rate

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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 (i) the impact that various hypothetical closing levels of the underliers on a coupon observation date could have on the coupon payable, if any, on the related coupon payment date and (ii) the impact that various hypothetical closing levels of the lesser performing underlier 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 underlier levels that are entirely hypothetical; no one can predict what the closing level of any underlier will be on any day throughout the life of your notes, what the closing level of any underlier will be on any coupon observation date and what the final underlier level of the lesser performing underlier will be on the determination date. The underliers have been highly volatile in the past — meaning that the underlier levels have changed substantially in relatively short periods — and their 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 or date of early redemption. If you sell your notes in a secondary market prior to the stated maturity date or date of early redemption, as the case may be, 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 interest rates, the volatility of the underliers, 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 PS-12 of this pricing 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
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Coupon	\$21.25
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Trigger buffer level	with respect to each underlier, 60% of its initial underlier level
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Coupon trigger level	with respect to each underlier, 75% of its initial underlier level
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Neither a market disruption event nor a non-trading day occurs on any originally scheduled coupon observation date or the originally scheduled determination date

No change in or affecting any of the underlier stocks or the method by which the applicable underlier sponsor calculates any underlier

Notes purchased on original issue date at the face amount and held to the stated maturity date or date of early redemption

Moreover, we have not yet set the initial underlier levels that will serve as the baseline for determining the coupon payable on each coupon payment date, if any, if the notes will be redeemed, the underlier returns and the amount that we will pay on your notes, if any, at maturity. We will not do so until the trade date. As a result, the actual initial underlier levels may differ substantially from the underlier levels prior to the trade date. They may also differ substantially from the underlier levels at the time you purchase your notes.

For these reasons, the actual performance of the underliers over the life of your notes, the actual underlier levels on any coupon observation date, as well as the coupon payable, if any, on each coupon payment date, may bear little relation to the hypothetical examples shown below or to the historical underlier levels shown elsewhere in this pricing supplement. For information about the underlier levels during recent periods, see “The Underliers — Historical Closing Levels of the Underliers” on page PS-27. Before investing in the notes, you should consult publicly available information to determine the underlier levels between the date of this pricing supplement and the date of your purchase of the notes.

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 underlier stocks.

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Hypothetical Coupon Payments

The examples below show hypothetical performances of each underlier as well as the hypothetical coupons, if any, that we would pay on each coupon payment date with respect to each \$1,000 face amount of the notes if the hypothetical closing level of each underlier on the applicable coupon observation date was the percentage of its initial underlier level shown.

Scenario 1

Hypothetical Coupon Observation Date	Hypothetical Closing Level of the NASDAQ-100 Index® (as Percentage of Initial Underlier Level)	Hypothetical Closing Level of the Russell 2000® Index (as Percentage of Initial Underlier Level)	Hypothetical Coupon
First	110%	40%	\$0
Second	50%	50%	\$0
Third	60%	55%	\$0
Fourth	90%	85%	\$21.25
Fifth	55%	50%	\$0
Sixth	50%	55%	\$0
Seventh	80%	95%	\$21.25
Eighth	60%	50%	\$0
Ninth	60%	50%	\$0
Tenth	65%	45%	\$0
Eleventh	50%	110%	\$0
Twelfth – Fortieth	55%	50%	\$0
		Total Hypothetical Coupons	\$42.50

In Scenario 1, the hypothetical closing level of each underlier increases and decreases by varying amounts on each hypothetical coupon observation date. Because the hypothetical closing level of each underlier on the fourth and seventh hypothetical coupon observation dates is greater than or equal to its hypothetical coupon trigger level, the total of the hypothetical coupons in Scenario 1 is \$42.50. Because the hypothetical closing level of at least one underlier on all other hypothetical coupon observation dates is less than its hypothetical coupon trigger level, no further coupons will be paid, including at maturity.

Scenario 2

Hypothetical Coupon Observation Date	Hypothetical Closing Level of the NASDAQ-100 Index® (as Percentage of Initial Underlier Level)	Hypothetical Closing Level of the Russell 2000® Index (as Percentage of Initial Underlier Level)	Hypothetical Coupon
First	50%	60%	\$0
Second	55%	65%	\$0
Third	40%	55%	\$0
Fourth	45%	60%	\$0
Fifth	50%	65%	\$0
Sixth	110%	55%	\$0
Seventh	35%	45%	\$0

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Eighth	45%	40%	\$0
Ninth	55%	55%	\$0
Tenth	50%	50%	\$0
Eleventh	60%	110%	\$0
Twelfth – Fortieth	55%	60%	\$0
		Total Hypothetical Coupons	\$0

In Scenario 2, the hypothetical closing level of each underlier increases and decreases by varying amounts on each hypothetical coupon observation date. Because in each case the hypothetical closing level of at least one underlier on the related coupon observation date is less than its hypothetical coupon trigger level, you will not receive a coupon payment on the applicable hypothetical coupon payment date. Since this occurs on every hypothetical coupon observation date, the overall return you earn on your notes will be zero or less. Therefore, the total of the hypothetical coupons in Scenario 2 is \$0.

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Scenario 3

Hypothetical Coupon Observation Date	Hypothetical Closing Level of the NASDAQ-100 Index® (as Percentage of Initial Underlier Level)	Hypothetical Closing Level of the Russell 2000® Index (as Percentage of Initial Underlier Level)	Hypothetical Coupon
First	50%	45%	\$0
Second	55%	40%	\$0
Third	50%	55%	\$0
Fourth	110%	115%	\$21.25
		Total Hypothetical Coupons	\$21.25

In Scenario 3, the hypothetical closing level of each underlier is less than its hypothetical coupon trigger level on the first three hypothetical coupon observation dates, but increases to a level that is greater than its hypothetical initial underlier level on the fourth hypothetical coupon observation date. Further, we also exercise our early redemption right with respect to a redemption on the fourth coupon payment date (which is also the first hypothetical date with respect to which we could exercise such right). Therefore, on the fourth coupon payment date (the redemption date), in addition to the hypothetical coupon of \$21.25, you will receive an amount in cash equal to \$1,000 for each \$1,000 face amount of your notes.

Hypothetical Payment at Maturity

If the notes are not redeemed, the cash settlement amount we would deliver for each \$1,000 face amount of your notes on the stated maturity date will depend on the performance of the lesser performing underlier on the determination date, as shown in the table below. The table below assumes that the notes have not been redeemed, does not include the final coupon, if any, and reflects hypothetical cash settlement amounts that you could receive on the stated maturity date. If the final underlier level of the lesser performing underlier (as a percentage of the initial underlier level) is less than its trigger buffer level, you will not be paid a final coupon at maturity.

The levels in the left column of the table below represent hypothetical final underlier levels of the lesser performing underlier and are expressed as percentages of the initial underlier level of the lesser performing underlier. The amounts in the right column represent the hypothetical cash settlement amounts, based on the corresponding hypothetical final underlier level of the lesser performing underlier (expressed as a percentage of the initial underlier level of the lesser performing underlier), 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 underlier level of the lesser performing underlier (expressed as a percentage of the initial underlier level of the lesser performing underlier) and the assumptions noted above.

The Notes Have Not Been Redeemed

Hypothetical Final Underlier Level of the Lesser Performing Underlier (as Percentage of Initial Underlier Level)	Hypothetical Cash Settlement Amount (as Percentage of Face Amount)
175.000%	100.000%*
150.000%	100.000%*
125.000%	100.000%*
100.000%	100.000%*
80.000%	100.000%*
75.000%	100.000%*

65.000%	100.000%
60.000%	100.000%
59.999%	59.999%
50.000%	50.000%
35.000%	35.000%
25.000%	25.000%
10.000%	10.000%
0.000%	0.000%

*Does not include the final coupon

If, for example, the notes have not been redeemed and the final underlier level of the lesser performing underlier were determined to be 25.000% of its initial underlier level, the cash settlement amount that we

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would deliver on your notes at maturity would be 25.000% 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 at the face amount and held them to the stated maturity date, you would lose 75.000% of your investment (if you purchased your notes at a premium to face amount you would lose a correspondingly higher percentage of your investment). In addition, if the final underlier level of the lesser performing underlier were determined to be 175.000% of its initial underlier level, the cash settlement amount that we would deliver on your notes at maturity would be limited to 100.000% of each \$1,000 face amount of your notes, as shown in the table above. As a result, if you held your notes to the stated maturity date, you would not benefit from any increase in the final underlier level over the initial underlier level.

The cash settlement amounts shown above are entirely hypothetical; they are based on market prices for the underlier stocks 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 the Notes — The Market Value of Your Notes May Be Influenced by Many Unpredictable Factors” on page S-3 of the accompanying general terms supplement no. 1,734.

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 pricing supplement.

We cannot predict the actual closing levels of the underliers on any day, the final underlier levels of the underliers or what the market value of your notes will be on any particular trading day, nor can we predict the relationship between the closing levels of the underliers and the market value of your notes at any time prior to the stated maturity date. The actual coupon payment, if any, that a holder of the notes will receive on each coupon payment date, the actual amount that you will receive at maturity, if any, and the rate of return on the offered notes will depend on whether or not the notes are redeemed and the actual initial underlier levels and coupon, which we will set on the trade date, and on the actual closing levels of the underliers and the actual final underlier levels determined by the calculation agent as described above. Moreover, the assumptions on which the hypothetical examples are based may turn out to be inaccurate. Consequently, the coupon to be paid in respect of your notes, if any, and the cash amount to be paid in respect of your notes on the stated maturity date, if any, may be very different from the information reflected in the examples above.

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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, in the accompanying prospectus supplement and under “Additional Risk Factors Specific to the Notes” in the accompanying general terms supplement no. 1,734. You should carefully review these risks and considerations as well as the terms of the notes described herein and in the accompanying prospectus, the accompanying prospectus supplement and the accompanying general terms supplement no. 1,734. Your notes are a riskier investment than ordinary debt securities. Also, your notes are not equivalent to investing directly in the underlier stocks, i.e., with respect to an underlier to which your notes are linked, the stocks comprising such underlier. You should carefully consider whether the offered notes are suited to your particular circumstances.

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 “Additional Risk Factors Specific to the Notes — The Market Value of Your Notes May Be Influenced by Many Unpredictable Factors” on page S-3 of the accompanying general terms supplement no. 1,734.

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

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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.

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

Although the coupons (if any) and return on the notes will be based on the performance of each underlier, 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 42 of the accompanying prospectus.

You May Lose Your Entire Investment in the Notes

You can lose your entire investment in the notes. Subject to our redemption right, the cash settlement amount on your notes, if any, on the stated maturity date will be based on the performance of the lesser performing of the underliers as measured from their initial underlier levels set on the trade date to their closing levels on the determination date. If the final underlier level of the lesser performing underlier for your notes is less than its trigger buffer level, you will have a loss for each \$1,000 of the face amount of your notes equal to the product of the lesser performing underlier return times \$1,000. Thus, you may lose your entire investment in the notes, which would include any premium to face amount you paid when you purchased the notes.

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.

The Return on Your Notes May Change Significantly Despite Only a Small Change in the Level of the Lesser Performing Underlier

If your notes are not redeemed and the final underlier level of the lesser performing underlier is less than its trigger buffer level, you will receive less than the face amount of your notes and you could lose all or a substantial portion of your investment in the notes. This means that while a decrease in the final underlier level of the lesser performing underlier to its trigger buffer level will not result in a loss of principal on the notes, a decrease in the final underlier level of the lesser performing underlier to less than its trigger buffer level will result in a loss of a significant portion of the face amount of the notes despite only a small change in the level of the lesser performing underlier.

You May Not Receive a Coupon on Any Coupon Payment Date

If the closing level of any underlier on the related coupon observation date is less than its coupon trigger level, you will not receive a coupon payment on the applicable coupon payment date. If this occurs on every coupon observation date, the overall return you earn on your notes will be zero or less and such return will be less than you would have earned by investing in a note that bears interest at the prevailing market rate.

You will only receive a coupon on a coupon payment date if the closing level of each underlier on the related coupon observation date is greater than or equal to its coupon trigger level. You should be aware that, with respect to any prior coupon observation dates that did not result in the payment of a coupon, you will not be compensated for any opportunity cost implied by inflation and other factors relating to the time value of

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money. Further, there is no guarantee that you will receive any coupon payment with respect to the notes at any time and you may lose your entire investment in the notes.

We Are Able to Redeem Your Notes at Our Option

On each coupon payment date commencing in November 2019 and ending in August 2028, we will be permitted to redeem your notes at our option. Even if we do not exercise our option to redeem your notes, our ability to do so may adversely affect the value of your notes. It is our sole option whether to redeem your notes prior to maturity and we may or may not exercise this option for any reason. Because of this redemption option, the term of your notes could be reduced.

The Coupon Does Not Reflect the Actual Performance of the Underliers from the Trade Date to Any Coupon Observation Date or from Coupon Observation Date to Coupon Observation Date

The coupon for each quarterly coupon payment date is different from, and may be less than, a coupon determined based on the percentage difference of the closing levels of the underliers between the trade date and any coupon observation date or between two coupon observation dates. Accordingly, the coupons, if any, on the notes may be less than the return you could earn on another instrument linked to the underliers that pays coupons based on the performance of the underliers from the trade date to any coupon observation date or from coupon observation date to coupon observation date.

The Cash Settlement Amount Will Be Based Solely on the Lesser Performing Underlier

If the notes are not redeemed by us, the cash settlement amount will be based on the lesser performing underlier without regard to the performance of the other underlier. As a result, you could lose all or some of your initial investment if the lesser performing underlier return is negative, even if there is an increase in the level of the other underlier. This could be the case even if the other underlier increased by an amount greater than the decrease in the lesser performing underlier.

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 you will be paid for your notes on the stated maturity date, if any, or the amount we will pay you upon any early redemption of your notes 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 or date of early redemption 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 or date of early redemption, 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.

As Compared to Other Index Sponsors, Nasdaq, Inc. Retains Significant Control and Discretionary Decision-Making Over the NASDAQ-100 Index[®], Which May Have an Adverse Effect on the Level of the NASDAQ-100 Index[®] and on Your Notes

Pursuant to the NASDAQ-100 Index[®] methodology, Nasdaq, Inc. retains the right, from time to time, to exercise reasonable discretion as it deems appropriate in order to ensure NASDAQ-100 Index[®] integrity, including, but not limited to, changes to quantitative inclusion criteria. Nasdaq, Inc. may also, due to special circumstances, apply discretionary adjustments to ensure and maintain quality of the NASDAQ-100 Index[®]. 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 Nasdaq, Inc. in a manner that materially and adversely affects the level of the NASDAQ-100 Index[®] and therefore your notes. Nasdaq, Inc. is not obligated to, and will not, take account of your interests in exercising the discretion described above.

You Have No Shareholder Rights or Rights to Receive Any Underlier Stock

Investing in your notes will not make you a holder of any of the underlier stocks. Neither you nor any other holder or owner of your notes will have any rights with respect to the underlier stocks, including any voting

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rights, any right to receive dividends or other distributions, any rights to make a claim against the underlier stocks or any other rights of a holder of the underlier stocks. Your notes will be paid in cash, as will any coupon payments, and you will have no right to receive delivery of any underlier stocks.

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.

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 pricing supplement. The issue price of the notes in the subsequent sale may differ substantially (higher or lower) from the issue price you paid as provided on the cover of this pricing supplement.

An Investment in the Offered Notes Is Subject to Risks Associated with Foreign Securities

The value of your notes is linked, in part, to an index (the NASDAQ-100 Index[®]) that is comprised, in part, of stocks from one or more foreign securities markets. Investments linked to the value of foreign equity securities involve particular risks. Any foreign securities market 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. 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 Tax Consequences of an Investment in Your Notes Are Uncertain

The tax consequences of an investment in your notes are uncertain, both as to the timing and character of any inclusion in income in respect of your notes.

The Internal Revenue Service announced on December 7, 2007 that it is considering issuing guidance regarding the tax treatment of an instrument such as your notes, and any such guidance could adversely affect the value and the tax treatment of your notes. Among other things, the Internal Revenue Service may decide to require the holders to accrue ordinary income on a current basis and recognize ordinary income on payment at maturity, and could subject non-U.S. investors to withholding tax. Furthermore, in 2007, legislation was introduced in Congress that, if enacted, would have required holders that acquired

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instruments such as your notes after the bill was enacted to accrue interest income over the term of such instruments. It is not possible to predict whether a similar or identical bill will be enacted in the future, or whether any such bill would affect the tax treatment of your notes. We describe these developments in more detail under “Supplemental Discussion of Federal Income Tax Consequences – United States Holders – Possible Change in Law” below. You should consult your tax advisor about this matter. Except to the extent otherwise provided by law, GS Finance Corp. intends to continue treating the notes for U.S. federal income tax purposes in accordance with the treatment described under “Supplemental Discussion of Federal Income Tax Consequences” on page PS-29 below unless and until such time as Congress, the Treasury Department or the Internal Revenue Service determine that some other treatment is more appropriate. 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.

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THE UNDERLIERS

The NASDAQ-100 Index[®]

The NASDAQ-100 Index[®] includes 100 of the largest domestic and international non-financial stocks listed on The NASDAQ Stock Market based on market capitalization. The NASDAQ-100 Index[®] is a “price return” index and is calculated using a modified market capitalization-weighted methodology. The NASDAQ-100 Index[®] is calculated, maintained and published by Nasdaq, Inc. The base date for the NASDAQ-100 Index[®] is January 31, 1985, with a base value of 125.00, as adjusted. We have derived all information contained in this document regarding the NASDAQ-100 Index[®] from publicly available information. Additional information about the NASDAQ-100 Index[®] is available on the following website: indexes.nasdaqomx.com/Index/Overview/NDX. We are not incorporating by reference the website or any material it includes in this pricing supplement.

As of October 26, 2018, the 103 stocks included in the NASDAQ-100 Index[®] were classified into ten industry sectors (with the approximate percentage currently included in such sectors indicated in parentheses): Technology (55.55%), Consumer Services (24.49%), Health Care (8.76%), Consumer Goods (5.95%), Industrials (4.44%), Telecommunications (0.81%), Oil & Gas (0.00%), Basic Materials (0.00%), Utilities (0.00%) and Financials (0.00%). (Sector designations are determined by the underlier sponsor using criteria it has selected or developed. Index 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 underliers with different underlier sponsors may reflect differences in methodology as well as actual differences in the sector composition of the underliers.)

The top ten constituent stocks of the NASDAQ-100 Index[®] as of October 26, 2018, by weight, are: Apple Inc. (13.27%), Microsoft Corporation (10.42%), Amazon.com Inc. (10.18%), Alphabet Inc. Class C (4.76%), Facebook Inc. (4.45%), Alphabet Inc. Class A (4.11%), Intel Corporation (2.68%), Cisco Systems Inc. (2.64%), Comcast Corporation (2.05%) and PepsiCo Inc. (1.98%).

Underlier Stocks With Weights Equal to or in Excess of 5% of the NASDAQ-100 Index[®] as of October 10, 2018
Apple Inc., Microsoft Corporation and Amazon.com Inc. are registered under the Exchange Act. Companies with stocks registered under the Exchange Act are required to file financial and other information specified by the U.S. Securities and Exchange Commission (“SEC”) periodically. Information filed with the SEC can be inspected and copied at the SEC’s public reference room located at 100 F Street, N.E., Washington, D.C. 20549, at prescribed rates. You may obtain information on the operation of the public reference room by calling the SEC at 1-800-SEC-0330. In addition, information filed by these underlier stock issuers with the SEC electronically can be reviewed through a web site maintained by the SEC. The address of the SEC’s web site is sec.gov. Information filed with the SEC by each of the above-referenced underlier stock issuers under the Exchange Act can be located by referencing its SEC file number specified below.

The graphs below, except where otherwise indicated, show the daily historical closing prices of Apple Inc., Microsoft Corporation and Amazon.com Inc. the constituent stocks comprising 5% or more of the NASDAQ-100 Index[®], from October 26, 2008 through October 26, 2018. We obtained the prices in the graphs below using data from Bloomberg Financial Services, without independent verification. We have taken the descriptions of the underlier stock issuers set forth below from publicly available information without independent verification.

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According to publicly available information, Apple Inc. designs, manufactures and markets mobile communication and media devices, personal computers, and portable digital music players, and sells a variety of related software, services, peripherals, networking solutions, and third-party digital content and applications. Information filed with the SEC by the underlier stock issuer under the Exchange Act can be located by referencing SEC file number 001-36743 for filings on or after November 12, 2014 and SEC file number 000-10030 for filings prior to November 12, 2014. Historical Performance of Apple Inc.

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According to publicly available information, Microsoft Corporation develops, licenses and supports software products, services and devices and designs and sells hardware devices. Information filed with the SEC by the underlier stock issuer under the Exchange Act can be located by referencing SEC file number 001-37845 for filings on or after July 26, 2016 and SEC file number 000-14278 for filings prior to July 26, 2016.

Historical Performance of Microsoft Corporation

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According to publicly available information, Amazon.com Inc. is an e-commerce company. Information filed with the SEC by the underlier stock issuer under the Exchange Act can be located by referencing SEC file number 000-22513. Historical Performance of Amazon.com Inc.

Construction of the NASDAQ-100 Index[®]

The NASDAQ-100 Index[®] is a modified market capitalization-weighted index. Except under extraordinary circumstances that may result in an interim evaluation, NASDAQ-100 Index[®] composition is reviewed on an annual basis in December. First, Nasdaq, Inc. determines which stocks meet the applicable eligibility criteria.

Selection Criteria for Initial Inclusion in the NASDAQ-100 Index[®]

To be eligible for initial inclusion in the NASDAQ-100 Index[®], a stock must meet the following criteria:

- the issuer of the stock's primary U.S. listing must be exclusively listed on the NASDAQ Global Select Market or the NASDAQ Global Market (unless the stock was dually listed on another U.S. market prior to January 1, 2004 and has continuously maintained such listing);
- the stock must be issued by a non-financial company. Non-financial companies are those companies that are classified under any Industry Code except 8000 according to the Industry Classification Benchmark (ICB), a product of FTSE International Limited;
- the stock may not be issued by an issuer currently in bankruptcy proceedings;
- the stock must have a minimum three-month average daily trading volume ("ADTV") of 200,000 shares (measured annually during the ranking review process). The ADTV is determined by calculating the average of the sum product of the stock's daily trading volume for each day during the previous three month period;

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if the issuer of the stock is organized under the laws of a jurisdiction outside the U.S., then such stock must have listed options on a recognized options market in the U.S. or be eligible for listed-options trading on a recognized options market in the U.S. (measured annually during the ranking review process);

the issuer of the stock may not have entered into a definitive agreement or other arrangement which would likely result in the stock no longer being eligible for inclusion in the NASDAQ-100 Index®;

the issuer of the stock may not have annual financial statements with an audit opinion that is currently withdrawn. This will be determined based upon a stock issuer's public filings with the SEC; and

the stock must have "seasoned" on Nasdaq, NYSE or NYSE Amex. Generally, a company is considered to be seasoned if it has been listed on a market for at least three full months (excluding the first month of initial listing).

Stock types generally eligible for inclusion in the NASDAQ-100 Index® are common stocks, ordinary shares, ADRs and tracking stocks. Closed-end funds, convertible debentures, exchange traded funds, limited liability companies, limited partnership interests, preferred stocks, rights, shares or units of beneficial interest, warrants, units and other derivative stocks are not eligible for inclusion in the NASDAQ-100 Index®. For purposes of NASDAQ-100 Index® eligibility criteria, if the stock is a depositary receipt representing a stock of a non-U.S. issuer, then references to the "issuer" are references to the issuer of the underlying stock. The NASDAQ-100 Index® does not contain securities of investment companies.

Continued Eligibility Criteria

To be eligible for continued inclusion in the NASDAQ-100 Index®, a NASDAQ-100 Index® stock must meet the following criteria:

- the issuer of the stock's primary U.S. listing must be exclusively listed on the Nasdaq Global Select Market or the Nasdaq Global Market;
- the stock must be issued by a non-financial company;
- the stock may not be issued by an issuer currently in bankruptcy proceedings;
- the stock must have an ADTV of at least 200,000 shares (measured annually during the ranking review process);
- if the issuer of the stock is organized under the laws of a jurisdiction outside the U.S., then such stock must have listed options on a recognized options market in the U.S. or be eligible for listed-options trading on a recognized options market in the U.S.;
- the issuer must have an adjusted market capitalization equal to or exceeding 0.10% of the aggregate adjusted market capitalization of the NASDAQ-100 Index® at each month-end. In the event a company does not meet this criterion for two consecutive month-ends, it is removed from the NASDAQ-100 Index® effective after the close of trading on the third Friday of the following month; and
- the issuer of the stock may not have annual financial statements with an audit opinion that is currently withdrawn.

All stocks meeting the above criteria will be considered eligible for inclusion in the NASDAQ-100 Index®. Those stocks which are found to meet the applicable eligibility criteria during the annual review are then ranked by market capitalization. While there is no minimum market capitalization requirement, inclusion will be determined based on the top 100 issuers with the largest market capitalization meeting all other eligibility requirements. Market capitalization is determined by multiplying a stock's last sale price by its total number of shares outstanding. The last sale price refers to the price at which a stock last traded during regular market hours as reported on such stock's index market, which may be the Nasdaq Official Closing Price (NOCP). The index market is the index eligible stock market for which the NASDAQ-100

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Index[®] stock's prices are received and used by Nasdaq, Inc. for purposes of calculating the NASDAQ-100 Index[®]. NASDAQ-100 Index[®] eligible stocks which are already in the NASDAQ-100 Index[®] and whose issuer is ranked in the top 100 eligible companies based on market capitalization are retained in the NASDAQ-100 Index[®]. An index stock issuer ranking 101 to 125 based on market capitalization will also be retained for inclusion in the NASDAQ-100 Index[®] if such issuer was previously ranked in the top 100 issuers as of the last annual ranking review or was added to the NASDAQ-100 Index[®] subsequent to the previous ranking review and continues to meet all eligibility criteria. Index stock issuers not meeting such criteria are replaced. The replacement stocks are those eligible stocks not currently in the NASDAQ-100 Index[®] whose issuers have the next largest market capitalization.

The data used in the process of ranking by market capitalization includes end of October market data and is updated for total shares outstanding submitted in an index stock issuer's publicly filed SEC document via the Electronic Data Gathering, Analysis and Retrieval system (EDGAR) through the end of November. If a stock is a depositary receipt, the total shares outstanding is the actual depositary shares outstanding as reported by the depositary banks.

The final list of constituents included in the NASDAQ-100 Index[®], including any replacements made during the annual review, is made effective after the close of trading on the third Friday in December. Generally, the list of annual additions and deletions as a result of the annual review is publicly announced by Nasdaq, Inc. via a press release in the early part of December, in conjunction with an announcement on Nasdaq, Inc.'s website.

NASDAQ-100 Index[®] Calculation

The discussion below describes the "price return" calculation of the NASDAQ-100 Index[®]. As compared to the total return or notional net total return versions of the NASDAQ-100 Index[®], the price return version is ordinarily calculated without regard to cash dividends on the NASDAQ-100 Index[®] stocks. However, all NASDAQ-100 Index[®] calculations reflect extraordinary cash distributions and special dividends.

The NASDAQ-100 Index[®] is a modified market capitalization-weighted index. The value of the NASDAQ-100 Index[®] equals the NASDAQ-100 Index[®] market value divided by the NASDAQ-100 Index[®] divisor. The overall NASDAQ-100 Index[®] market value is the aggregate of each NASDAQ-100 Index[®] stock's market value, as may be adjusted for any corporate actions. A NASDAQ-100 Index[®] stock's market value is determined by multiplying the last sale price by its index share weight, also known as "index shares". Index shares are equal to the total number of shares outstanding for a NASDAQ-100 Index[®] stock. In other words, the value of the NASDAQ-100 Index[®] is equal to (i) the sum of the products of (a) the index shares of each of the NASDAQ-100 Index[®] stocks multiplied by (b) each such stock's last sale price (adjusted for corporate actions, if any), divided by (ii) the divisor of the NASDAQ-100 Index[®]. The price return NASDAQ-100 Index[®] divisor is calculated as the ratio of (i) the start of day market value of the NASDAQ-100 Index[®] divided by (ii) the previous day NASDAQ-100 Index[®] value.

If trading in a NASDAQ-100 Index[®] stock is halted on its primary listing market, the most recent last sale price for that stock is used for all NASDAQ-100 Index[®] computations until trading on such market resumes. Similarly, the most recent last sale price is used if trading in a NASDAQ-100 Index[®] stock is halted on its primary listing market before the market opens.

The NASDAQ-100 Index[®] is calculated in U.S. dollars during the U.S. market trading day based on the last sale price and are disseminated once per second from 09:30:01 until 17:16:00 ET. The closing value of the NASDAQ-100 Index[®] may change up until 17:15:00 ET due to corrections to the last sale price of the NASDAQ-100 Index[®] stocks. The official closing value of the NASDAQ-100 Index[®] is ordinarily disseminated at 17:16:00 ET.

NASDAQ-100 Index[®] Maintenance

Changes to NASDAQ-100 Index[®] Constituents

Changes to the NASDAQ-100 Index[®] constituents may be made during the annual ranking review. In addition, if at any time during the year other than the annual review, it is determined that an index stock issuer no longer meets the criteria for continued inclusion in the NASDAQ-100 Index[®], or is otherwise

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determined to have become ineligible for continued inclusion in the NASDAQ-100 Index[®], it is replaced with the largest market capitalization issuer not currently in the NASDAQ-100 Index[®] that meets the applicable eligibility criteria for initial inclusion in the NASDAQ-100 Index[®].

Ordinarily, a stock will be removed from the NASDAQ-100 Index[®] at its last sale price. However, if at the time of its removal the NASDAQ-100 Index[®] stock is halted from trading on its primary listing market and an official closing price cannot readily be determined, the NASDAQ-100 Index[®] stock may, in Nasdaq, Inc.'s discretion, be removed at a price of \$0.00000001 ("zero price"). This zero price will be applied to the NASDAQ-100 Index[®] stock after the close of the market but prior to the time the official closing value of the NASDAQ-100 Index[®] is disseminated.

Divisor Adjustments

The divisor is adjusted to ensure that changes in NASDAQ-100 Index[®] constituents either by corporate actions (that adjust either the price or shares of a NASDAQ-100 Index[®] stock) or NASDAQ-100 Index[®] participation outside of trading hours do not affect the value of the NASDAQ-100 Index[®]. All divisor changes occur after the close of the applicable index stock markets.

Quarterly NASDAQ-100 Index[®] Rebalancing

On a quarterly basis coinciding with the quarterly scheduled index shares adjustment procedures, as discussed below, the NASDAQ-100 Index[®] will be rebalanced if it is determined that (1) the current weight of the single NASDAQ-100 Index[®] stock with the largest market capitalization is greater than 24.0% of the NASDAQ-100 Index[®] or (2) the collective weight of those stocks whose individual current weights are in excess of 4.5% exceeds 48.0% of the NASDAQ-100 Index[®]. In addition, a "special rebalancing" of the NASDAQ-100 Index[®] may be conducted at any time if Nasdaq, Inc. determines it necessary to maintain the integrity and continuity of the NASDAQ-100 Index[®]. If either one or both of the above weight distribution conditions are met upon quarterly review, or Nasdaq, Inc. determines that a special rebalancing is necessary, a weight rebalancing will be performed. If the first weight distribution condition is met and the current weight of the single NASDAQ-100 Index[®] stock with the largest market capitalization is greater than 24.0%, then the weights of all stocks with current weights greater than 1.0% ("large stocks") will be scaled down proportionately toward 1.0% until the adjusted weight of the single largest NASDAQ-100 Index[®] stock reaches 20.0%.

If the second weight distribution condition is met and the collective weight of those stocks whose individual current weights are in excess of 4.5% (or adjusted weights in accordance with the previous step, if applicable) exceeds 48.0% of the NASDAQ-100 Index[®], then the weights of all such large stocks in that group will be scaled down proportionately toward 1.0% until their collective weight, so adjusted, is equal to 40.0%.

The aggregate weight reduction among the large stocks resulting from either or both of the rebalancing steps above will then be redistributed to those stocks with weightings of less than 1.0% ("small stocks") in the following manner. In the first iteration, the weight of the largest small stock will be scaled upwards by a factor which sets it equal to the average NASDAQ-100 Index[®] weight of 1.0%. The weights of each of the smaller remaining small stocks will be scaled up by the same factor reduced in relation to each stock's relative ranking among the small stocks such that the smaller the NASDAQ-100 Index[®] stock in the ranking, the less its weight will be scaled upward. This is intended to reduce the market impact of the weight rebalancing on the smallest component stocks in the NASDAQ-100 Index[®].

In the second iteration of the small stock rebalancing, the weight of the second largest small stock, already adjusted in the first iteration, will be scaled upwards by a factor which sets it equal to the average NASDAQ-100 Index[®] weight of 1.0%. The weights of each of the smaller remaining small stocks will be scaled up by this same factor reduced in relation to each stock's relative ranking among the small stocks such that, once again, the smaller the stock in the ranking, the less its weight will be scaled upward. Additional iterations will be performed until the accumulated increase in weight among the small stocks equals the aggregate weight reduction among the large stocks that resulted from the rebalancing in accordance with the two weight distribution conditions discussed above.

Finally, to complete the rebalancing process, once the final weighting percentages for each NASDAQ-100 Index[®] stock have been set, the index share weights (or index shares) will be determined

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anew based upon the last sale prices and aggregate capitalization of the NASDAQ-100 Index[®] at the close of trading on the last calendar day in February, May, August and November. Changes to the index shares will be made effective after the close of trading on the third Friday in March, June, September and December, and an adjustment to the divisor is made to ensure continuity of the NASDAQ-100 Index[®]. Ordinarily, new rebalanced index share weights will be determined by applying the above procedures to the current index share weights. However, Nasdaq, Inc. may, from time to time, determine rebalanced weights, if necessary, by applying the above procedure to the actual current market capitalization of the NASDAQ-100 Index[®] components. In such instances, Nasdaq, Inc. would announce the different basis for rebalancing prior to its implementation.

During the quarterly rebalancing, data is cutoff as of the previous month end and no changes are made to the NASDAQ-100 Index[®] from that cutoff until the quarterly index share change effective date, except in the case of changes due to corporate actions with an ex-date.

Corporate Actions and NASDAQ-100 Index[®] Adjustments

Aside from changes resulting from quarterly rebalancing, intra-quarter changes in index shares driven by corporate events can also result from a change in a NASDAQ-100 Index[®] stock's total shares outstanding that is greater than 10.0%. If a stock is a depositary receipt, the total shares outstanding is the actual depositary shares outstanding as reported by the depositary banks. Changes in the price and/or index shares driven by corporate events such as stock dividends, stock splits and certain spin-offs and rights issuances are adjusted on the ex-date. Changes in total shares outstanding are determined by an index stock issuer's public filings with the SEC. If the change in total shares outstanding arising from other corporate actions is greater than or equal to 10.0%, the change is made as soon as practicable. Otherwise, if the change in total shares outstanding is less than 10.0%, then all such changes are accumulated and made effective at one time on a quarterly basis after the close of trading on the third Friday in each of March, June, September and December. The index shares are derived from the stock's total shares outstanding. The index shares are then adjusted by the same percentage amount by which the total shares outstanding have changed. The following corporate actions will be made effective on the ex-date. If there is no ex-date announced by the index exchange, there will be no adjustment to the NASDAQ-100 Index[®] as a result of a corporate action.

Stock Split and Stock Dividend. A stock split and stock dividend is the action of a NASDAQ-100 Index[®] stock in increasing its index shares and decreasing the par value proportionately. There is no flow of capital into or out of the company. The number of index shares in the NASDAQ-100 Index[®] increases but the market capitalization of the stock remains unchanged. The price of the NASDAQ-100 Index[®] stock is adjusted to reflect the ratio of a stock split and stock dividend and a corresponding inverse adjustment to the index shares is made.

Reverse Stock Split. A reverse stock split is the action of a NASDAQ-100 Index[®] stock in decreasing its index shares and decreasing the par value in proportion. There is no flow of capital into or out of the company. The number of index shares in the NASDAQ-100 Index[®] decreases but the market capitalization of the stock remains unchanged. The price of the NASDAQ-100 Index[®] stock is adjusted to reflect the ratio of the reverse stock split and a corresponding inverse adjustment to the index shares is made.

Special Cash Dividends. A dividend is considered "special" if the information provided by the listing exchange in their announcement of the ex-date indicates that the dividend is special. Other nomenclature for a special dividend may include, but is not limited to, "extra", "extraordinary", "non-recurring", "one-time" and "unusual". The price of the NASDAQ-100 Index[®] stock in the NASDAQ-100 Index[®] is adjusted for the amount of the special cash dividend.

Cash and Stock Dividends. If a NASDAQ-100 Index[®] stock is paying a cash and stock dividend on the same date, the cash dividend is applied before the stock dividend unless otherwise indicated in the information provided by the index exchange. Additionally, in the case of an optional dividend which allows the holder to choose between receiving cash or stock, the adjustment will be made in the manner in which the dividend has been announced by the index exchange.

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Stock Distribution of Another Stock. If a NASDAQ-100 Index® stock is distributing shares of a different sto