



GS Finance Corp.

Medium-Term Notes, Series F
guaranteed by

The Goldman Sachs Group, Inc.

S&P 500® Futures 40% VT Adaptive Response Index (USD) ER

Overview

This section constitutes only a brief overview of the S&P 500® Futures 40% VT Adaptive Response Index (USD) ER. See “About This Index Supplement Addendum” below.

The S&P 500® Futures 40% VT Adaptive Response Index (USD) ER (current Bloomberg symbol: “SPAR4VE Index”) attempts to provide exposure to the S&P 500® Futures Excess Return Index with a rules-based overlay that adjusts exposure to the S&P 500® Futures Excess Return Index on a daily basis. The objective of these rules, taken collectively, is to create an index that provides for volatility-adjusted exposure to the S&P 500® Futures Excess Return Index, coupled with further adjustments based on calendar-based signals and price patterns, subject to a maximum exposure of 500% and a maximum daily change in leverage of 100%.

The calendar-based signals and price patterns include:

- a “mean reversion signal,” which is based upon the assumption that in the short-term, the underlying futures index will increase or decrease in value in the opposite direction of the short-term historical increases or decreases in its value;
- a “Federal Open Market Committee schedule (“FOMC”) signal,” which is based on the assumption that equities may outperform going into and on the days on which there is a scheduled release of a statement by the FOMC to announce monetary policies; and
- “turn-of-the-month signals,” which are based on the assumption that equities may mean revert during the final days of a given month if equities have performed negatively that month while the first days of a new month generally yield positive returns for equity securities.

The S&P 500® Futures Excess Return Index measures the performance of the nearest maturing quarterly E-mini S&P 500 futures contract trading on the Chicago Mercantile Exchange.

We have derived all information contained in this index supplement addendum regarding the index from publicly available information. Additional information about the index is available on the following website: <https://www.spglobal.com/spdji/en/indices/multi-asset/sp-500-futures-40-vt-adaptive-response-index/#overview>. We are not incorporating by reference the website or any material it includes in this index supplement addendum.

Quick Facts		Historical Performance, Annualized Return and Annualized Volatility*		
Sponsor	S&P Dow Jones Indices LLC	<p>The graph below shows the daily historical closing levels of the index from January 2, 2020 through February 28, 2025 (historical closing levels appear to the right of the vertical solid line marker), and the following table provides the annualized return and annualized volatility of the index for each applicable period ended February 28, 2025. As a result, this information does not reflect the global financial crisis which began in 2008, which had a materially negative impact on the price of most equity securities and, as a result, the level of most equity indices.</p>		
Calculation Agent	S&P Dow Jones Indices LLC			
Index Currency	USD			
Reuters Ticker	.SPAR4VE			
Bloomberg Ticker	SPAR4VE			
Rebalancing Geographical Coverage	Daily US			
Type	Excess Return	Annualized Return**		Annualized Volatility***
Launch Date	December 27, 2024	1 Year*	16.06%	43.44%
		3 Years*	14.46%	40.91%
		5 Years*	27.64%	41.20%
		Since January 2, 2020*	20.22%	42.22%
History Available Since	January 4, 2000	<p>* Historical information begins December 27, 2024 (the index launch date). Hypothetical performance data, which was used for all data prior to December 27, 2024, was obtained from the index sponsor’s website, without independent verification. You should not take the hypothetical performance data or historical performance data as an indication of future performance.</p> <p>** Annualized return represents the average rate of return per annum of the index during the applicable time period.</p> <p>*** Annualized volatility is a measure of the historical variability of returns of the index during the applicable time period.</p>		

Your investment in securities linked to the index involves certain risks. See “Selected Risk Factors” on page S-5 to read about investment risks relating to such securities.

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 index supplement addendum, the applicable pricing supplement, the applicable product supplement, if any, the applicable general terms supplement, if any, the accompanying S&P 500® Futures Adaptive Response Indices Supplement No. 1, the accompanying prospectus supplement or the accompanying prospectus. Any representation to the contrary is a criminal offense.

The securities 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

March 2025 S&P 500® Futures 40% VT Adaptive Response Index (USD) ER Supplement Addendum dated March 6, 2025.



Comparative Performance Data

Index Performance Compared to the S&P 500[®] Futures Excess Return Index and the S&P 500[®] Index*

For comparative purposes, the graph below shows the performance, from January 2, 2020 through February 28, 2025, of the S&P 500[®] Futures 40% VT Adaptive Response Index (USD) ER, the S&P 500[®] Futures Excess Return Index and the S&P 500[®] Index.

For comparative purposes, each of the S&P 500[®] Futures 40% VT Adaptive Response Index (USD) ER, the S&P 500[®] Futures Excess Return Index and the S&P 500[®] Index have been adjusted to have a closing level of 100.00 on January 2, 2020 by dividing the applicable closing level on each day by that index's closing level on January 2, 2020 and multiplying the quotient by 100.00.

Comparative Performance of the S&P 500[®] Futures 40% VT Adaptive Response Index (USD) ER (SPAR4VE) and the S&P 500[®] Futures Excess Return Index (SPXFP) and the S&P 500[®] Index (SPX)



* Historical information for the S&P 500[®] Futures 40% VT Adaptive Response Index (USD) ER begins December 27, 2024 (the index launch date) and appears to the right of the vertical solid line marker. Hypothetical performance data, which was used for all data prior to December 27, 2024, was obtained from the index sponsor's website, without independent verification. **You should not take the hypothetical performance data or historical performance data as an indication of future performance.**

Index Annualized Return Compared to the S&P 500[®] Futures Excess Return Index and the S&P 500[®] Index*

The following table provides a comparison of the annualized returns of the S&P 500[®] Futures 40% VT Adaptive Response Index (USD) ER, the S&P 500[®] Futures Excess Return Index and the S&P 500[®] Index for the applicable period ended February 28, 2025.

Comparison of Annualized Returns of the S&P 500[®] Futures 40% VT Adaptive Response Index (USD) ER, the S&P 500[®] Futures Excess Return Index and the S&P 500[®] Index**

	1 Year	3 Years	5 Years	Since January 2, 2020
S&P 500 [®] Index	17.45%	10.83%	15.05%	12.40%
S&P 500 [®] Futures Excess Return Index	12.03%	7.34%	13.34%	10.76%
S&P 500 [®] Futures 40% VT Adaptive Response Index (USD) ER	16.06%*	14.46%*	27.64%*	20.22%*

* Historical information begins December 27, 2024 (the index launch date). Hypothetical performance data, which was used for all data prior to December 27, 2024, was obtained from the index sponsor's website, without independent verification. **You should not take the hypothetical performance data or historical performance data as an indication of future performance.**

** Annualized return represents the average rate of return per annum, calculated as the geometric average of the percentage change of the applicable index during the applicable time period.

Index Annualized Volatility Compared to the S&P 500® Futures Excess Return Index and the S&P 500® Index*

The following graph provides a comparison of the annualized volatility of the S&P 500® Futures 40% VT Adaptive Response Index (USD) ER, the S&P 500® Futures Excess Return Index and the S&P 500® Index from January 2, 2020 through February 28, 2025.

Comparison of Annualized Volatility of the S&P 500® Futures 40% VT Adaptive Response Index (USD) ER (SPAR4VE), the S&P 500® Futures Excess Return Index (SPXFP) and the S&P 500® Index (SPX)**



* Historical information for the S&P 500® Futures 40% VT Adaptive Response Index (USD) ER begins December 27, 2024 (the index launch date) and appears to the right of the vertical solid line marker. Hypothetical performance data, which was used for all data prior to December 27, 2024, was obtained from the index sponsor’s website, without independent verification. **You should not take the hypothetical performance data or historical performance data as an indication of future performance.**

** For each day, annualized volatility is a measure of the historical variability of returns, and is calculated as the square root of 252 multiplied by the sample standard deviation of the daily logarithmic returns of the index during a 60 business day look-back period.

Index Exposure to the S&P 500® Futures Excess Return Index*

The following graph displays the percentage of index exposure to the S&P 500® Futures Excess Return Index and the performance the S&P 500® Futures Excess Return Index during the period from January 2, 2020 through February 28, 2025. The percentage of index exposure to the S&P 500® Futures Excess Return Index on February 28, 2025 is 353.87%. The S&P 500® Futures Excess Return Index has been adjusted to have a closing level of 100.00 on January 2, 2020 by dividing the applicable closing level on each day by such index’s closing level on January 2, 2020 and multiplying the quotient by 100.00.

Percentage of Index Exposure to the S&P 500® Futures Excess Return Index



* Historical information for the S&P 500® Futures 40% VT Adaptive Response Index (USD) ER begins December 27, 2024 (the index launch date) and appears to the right of the vertical solid line marker. Hypothetical performance data, which was used for all data prior to December 27, 2024, was obtained from the index sponsor’s website, without independent verification. **You should not take the hypothetical performance data or historical performance data as an indication of future performance.**



Selected Risk Factors

An investment in securities linked to the index is subject to the risks described below as well as the risks and considerations described in the accompanying S&P 500® Futures Adaptive Response Indices Supplement No. 1, the applicable pricing supplement, the applicable product supplement, if any, the applicable general terms supplement, if any, the accompanying prospectus supplement and the accompanying prospectus. The following risk factors are discussed in greater detail in the accompanying S&P 500® Futures Adaptive Response Indices Supplement No. 1. References below to: (1) "underlying futures index" mean the "S&P 500® Futures Excess Return Index"; (2) "reference index" mean the "S&P 500® Index"; and (3) "underlier stock" refer to the stocks that comprise the reference index.

- The Estimated Value of Your Securities At the Time the Terms of Your Securities 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 Securities
- Your Securities Are Subject to the Credit Risk of GS Finance Corp., as Issuer, and the Credit Risk of The Goldman Sachs Group, Inc., as Guarantor
- The Market Value of Your Securities May Be Influenced by Many Unpredictable Factors
- If the Value of an Index Changes, the Market Value of Your Securities May Not Change in the Same Manner
- You Have No Rights in Any Futures Contract Tracked By the S&P 500® Futures Excess Return Index
- You Have No Shareholder Rights or Rights to Receive Any Underlier Stock
- Past Performance is No Guide to Future Performance
- Securities Linked to the Index Are Not Suitable For All Investors and Should Be Purchased Only By Investors Who Understand Leverage Risk; the Index May Have Leveraged Exposure to the Underlying Futures Index in Falling Stock Markets
- The Index Is Subject to Risks Associated With Leveraged Exposure and There Is a Greater Risk You Will Receive Less Than the Face Amount of Your Securities Relative to Securities Linked to the Underlying Futures Index, Assuming All Other Terms Remain the Same
- The Index is Subject to Risks Associated with a Cap on the Daily Change in Leverage
- There Is No Assurance that Calculating Realized Volatility as the Average of Short-Term Volatility and Long-Term Volatility Is the Best Way to Measure Realized Volatility
- There Is No Guarantee that the Index Will Achieve the Volatility Target
- The Index is Subject to Risks Associated with the Use of Signals
- The Index is Subject to Risks Associated with Turn-of-the-Month Signals
- The Index is Subject to Risks Associated with the Mean Reversion Signal
- The Index is Subject to Risks Associated with the Federal Open Markets Committee Schedule Signal
- The Index May Be Significantly Uninvested
- The Index May Realize Significant Losses if It Is Not Consistently Successful in Increasing Exposure to the Underlying Futures Index in Advance of Increases in the Underlying Futures Index and Reducing Exposure to the Underlying Futures Index in Advance of Declines in the Underlying Futures Index
- The Index May Not Be Successful or Outperform Any Alternative Strategy that Might Be Employed in Respect of the Underlying Futures Index
- An Affiliate of GS Finance Corp. Coordinated with the Index Sponsor in the Development of the Index
- The Index Has a Limited Operating History
- If the Closing Level of the Index Becomes Zero or Negative, the Closing Level of the Index Will Remain Zero, Which Could Adversely Impact the Amount Payable on Your Securities and You May Lose Your Entire Investment in the Securities
- Under Certain Circumstances, Your Securities May Have a Higher Risk of Automatic Redemption Than Securities Linked to the Underlying Futures Index
- The Underlying Futures Index Is Expected to Underperform the Total Return Performance of the S&P 500® Index Because of an Implicit Financing Cost
- The Policies of the Index Sponsor and Changes that Affect the Underlying Futures Index or the Securities Comprising the Reference Index Could Affect the Payment Amount on Your Securities and Their Market Value
- Except to the Extent The Goldman Sachs Group, Inc. Is One of the Companies Whose Common Stock Comprises the Reference Index, and Except to the Extent That We or Our Affiliates May Currently or in the Future Own Securities of, or Engage in

Business With, the Issuers of Securities Comprising the Reference Index or Own the Underlying Asset, There Is No Affiliation Between Us and the Issuers of Securities Comprising the Reference Index

- Linking to an Equity Futures Contract Is Different from Linking to the Index or the Underlying Futures Index
- Negative Roll Yields Will Adversely Affect the Level of the Index Over Time and Therefore the Amount Payable on the Securities
- Futures Contracts Are Not Assets with Intrinsic Value
- You Have No Rights in Any Futures Contract Tracked By the Underlying Futures Index
- Owning the Securities Is Not the Same as Directly Owning the Index Stocks or Futures Contract Directly or Indirectly Tracked by the Underlying Futures Index
- Suspension or Disruptions of Market Trading in Stocks or Futures Contracts May Adversely Affect the Value of the Securities

About This Index Supplement Addendum

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This index supplement addendum constitutes a supplement to the documents listed below and therefore should be read in conjunction with such documents:

- [S&P 500® Futures Adaptive Response Indices Supplement No. 1 dated February 18, 2025](#)
- [Prospectus Supplement dated February 14, 2025](#)
- [Prospectus dated February 14, 2025](#)

We have not authorized anyone to provide any information or to make any representations other than those contained in or incorporated by reference in this index supplement addendum, the accompanying S&P 500[®] Futures Adaptive Response Indices Supplement No. 1, the accompanying prospectus supplement or the accompanying prospectus. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may provide. This index supplement addendum is an offer to sell only the securities offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. The information contained in this index supplement addendum, the accompanying S&P 500[®] Futures Adaptive Response Indices Supplement No. 1, the accompanying prospectus supplement and the accompanying prospectus is current only as of the respective dates of such documents.

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