

S&P 500 Low Volatility Target Beta Indices *Methodology*

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Introduction

Index Objective

The S&P 500 Low Volatility Target Beta Indices measure the performance of a strategy that effectively leverages its allocation to the S&P 500 Low Volatility Index, within a range from 1.2X to 2.0X, in order to target realized beta of 1 with respect to the S&P 500.

For information on the S&P 500 Low Volatility Index and S&P 500, please refer to S&P Dow Jones Indices' S&P Low Volatility Index Methodology and S&P U.S. Indices Methodology documents, available at www.spglobal.com/spdji/.

Supporting Documents

This methodology is meant to be read in conjunction with supporting documents providing greater detail with respect to the policies, procedures and calculations described herein. References throughout the methodology direct the reader to the relevant supporting document for further information on a specific topic. The list of the main supplemental documents for this methodology and the hyperlinks to those documents is as follows:

Supporting Document	URL
S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology	Equity Indices Policies & Practices
S&P Dow Jones Indices' Index Mathematics Methodology	Index Mathematics Methodology

This methodology was created by S&P Dow Jones Indices to achieve the aforementioned objective of measuring the underlying interest of each index governed by this methodology document. Any changes to or deviations from this methodology are made in the sole judgment and discretion of S&P Dow Jones Indices so that the index continues to achieve its objective.

Index Construction

The methodology employs a beta-driven weighting scheme.

At each rebalancing, the beta of the S&P 500 Low Volatility Price Return Index with respect to the S&P 500 Price Return Index is determined. The beta used in the calculations is the slope of the regression line of the S&P 500 Low Volatility Index's trailing 252 trading day daily price returns versus the daily price returns of the S&P 500 over the same period, both measured in U.S. dollars.

At each rebalancing, the weight, w , for the S&P 500 Low Volatility Index is set inversely proportional to its beta as follows:

$$w = \frac{1}{Beta}$$

The weight is then capped at 2.0% and floored at 1.2%.

The difference in the weight determined during the current rebalancing and the weight determined during the immediately preceding rebalancing is capped at 0.25%.

Index Calculations

The return of the S&P 500 Low Volatility Target Beta Index consists of two components:

1. The return on the position in the S&P 500 Low Volatility Index.
2. The interest cost (the interest rate applied is based on SOFR overnight + 0.05575%, using a 360-day year).

The formula for calculating the S&P 500 Low Volatility Target Beta Index is as follows:

$$\text{Target Beta Index } (t) = \text{Target Beta Index } (rb) \times \left\{ 1 + [w_{ref} * \left(\frac{UIL(t)}{UIL(rb)} - 1 \right) + (1 - w_{ref}) * \left(\text{Rate}(rb) \times \frac{D(rb, t)}{360} \right)] \right\}$$

where:

UIL = The underlying S&P 500 Low Volatility Index level.

t = The close of business of the current trading date.

rb = The close of business of the last effective rebalancing date.

w = The weight or final exposure of the equity return. This is calculated at each rebalancing and held constant until the next rebalancing.

ref = The close of business of the reference date prior to the last effective rebalancing date.

$Rate$ = SOFR overnight + 0.05575%.

D = The number of calendar days between t (included) and rb (excluded).

Index Maintenance

Rebalancing

The indices are rebalanced after the close of the first trading day of each month. The rebalancing reference date is after the close of the seventh to last trading day of the prior month.

Currency of Calculation and Additional Index Return Series

The indices are calculated in U.S. dollars and euros. Euro hedged versions of the indices are also calculated.

Real-time spot Forex rates, as supplied by WMR, are used for ongoing index calculation of real-time indices.

WMR foreign exchange rates are taken daily at 4:00 PM London Time and used in the calculation of the indices. These mid-market fixings are calculated by WMR based on LSEG data and appear on LSEG pages.

In addition to the indices detailed in this methodology, additional return series versions of the indices may be available, including, but not limited to: currency, currency hedged, decrement, fair value, inverse, leveraged, and risk control versions. For a list of available indices, please refer to the [S&P DJI Methodology & Regulatory Status Database](#).

For information on various index calculations, please refer to S&P Dow Jones Indices' Index Mathematics Methodology.

For the inputs necessary to calculate certain types of indices, including decrement, dynamic hedged, fair value, and risk control indices, please refer to the Parameters documents available at www.spglobal.com/spdji/.

Base Dates and History Availability

Index history availability, base dates, and base values are shown in the table below.

Index	Launch Date	First Value Date	Base Date	Base Value
S&P 500 Low Volatility Target Beta Index (USD)	11/16/2015	12/02/1991	02/01/2001	100
S&P 500 Low Volatility Target Beta Index TR (USD)	11/16/2015	12/02/1991	02/01/2001	100
S&P 500 Low Volatility Target Beta Index NTR (USD)	11/16/2015	12/02/2002	12/02/2002	100
S&P 500 Low Volatility Target Beta Index (EUR)	11/16/2015	12/02/1991	02/01/2001	100
S&P 500 Low Volatility Target Beta Index TR (EUR)	11/16/2015	12/02/1991	02/01/2001	100
S&P 500 Low Volatility Target Beta Index NTR (EUR)	11/16/2015	12/02/2002	12/02/2002	100
S&P 500 Low Volatility Target Beta Index (EUR) Hedged	11/30/2015	12/01/2003	12/01/2003	100
S&P 500 Low Volatility Target Beta Index TR (EUR) Hedged	11/30/2015	12/01/2003	12/01/2003	100
S&P 500 Low Volatility Target Beta Index NTR (EUR) Hedged	11/30/2015	12/01/2003	12/01/2003	100

Index Governance

Index Committee

The indices are maintained by an S&P Dow Jones Indices Index Committee. All committee members are full-time professional members of S&P Dow Jones Indices' staff. The Committee meets regularly. At each meeting, the Committee reviews pending corporate actions that may affect index constituents, statistics comparing the composition of the indices to the market, companies that are being considered as candidates for addition to an index, and any significant market events. In addition, the Index Committee may revise index policy covering rules for selecting companies, treatment of dividends, share counts or other matters.

S&P Dow Jones Indices considers information about changes to its indices and related matters to be potentially market moving and material. Therefore, all Index Committee discussions are confidential.

S&P Dow Jones Indices' Index Committees reserve the right to make exceptions when applying the methodology if the need arises. In any scenario where the treatment differs from the general rules stated in this document or supplemental documents, clients will receive sufficient notice, whenever possible.

In addition to the daily governance of indices and maintenance of index methodologies, at least once within any 12-month period, the Index Committee reviews the methodology to ensure the indices continue to achieve the stated objectives, and that the data and methodology remain effective. In certain instances, S&P Dow Jones Indices may publish a consultation inviting comments from external parties.

For information on Quality Assurance and Internal Reviews of Methodology, please refer to S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology.

Index Policy

Announcements

Rebalancing announcements are made at the close five trading days prior to the rebalancing effective date.

Holiday Schedule

The indices are calculated when the U.S. equity markets are open.

A complete holiday schedule for the year is available at www.spglobal.com/spdji/.

Rebalancing

The Index Committee may change the date of a given rebalancing for reasons including market holidays occurring on or around the scheduled rebalancing date. Any such change will be announced with proper advance notice where possible.

Unexpected Exchange Closures

For information on Unexpected Exchange Closures, please refer to S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology.

Recalculation Policy

For information on the recalculation policy, please refer to S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology.

Real-Time Calculation

Real-time, intra-day, index calculations are executed for certain indices whenever any of their primary exchanges are open. Real-time indices are not restated.

For information on Calculations and Pricing Disruptions, Expert Judgment and Data Hierarchy, please refer to S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology.

Contact Information

For questions regarding an index, please contact: index_services@spglobal.com.

Index Dissemination

Index levels are available through S&P Dow Jones Indices' Web site at www.spglobal.com/spdji/, major quote vendors (see codes below), numerous investment-oriented Web sites, and various print and electronic media.

Tickers

The table below lists headline indices covered by this document. All versions of the below indices that may exist are also covered by this document. Please refer to the [S&P DJI Methodology & Regulatory Status Database](#) for a complete list of indices covered by this document.

Index (Currency)	Return Type	BBG	RIC
S&P 500 Low Volatility Target Beta Index (USD)	Price Return	SPXLTBUP	.SPXLTBUP
	Total Return	SPXLTBUT	.SPXLTBUT
	Net Total Return	SPXLTBUN	.SPXLTBUN
S&P 500 Low Volatility Target Beta Index (EUR)	Price Return	SPXLTBEP	.SPXLTBEP
	Total Return	SPXLTBET	.SPXLTBET
	Net Total Return	SPXLTBEN	.SPXLTBEN
S&P 500 Low Volatility Target Beta Index (EUR) Hedged	Price Return	SPXLBHEP	--
	Total Return	SPXLBHET	--
	Net Total Return	SPXLBHEN	--

Index Data

Daily constituent and index level data are available via subscription.

For product information, please contact S&P Dow Jones Indices, www.spglobal.com/spdji/en/contact-us.

Web site

For further information, please refer to S&P Dow Jones Indices' Web site at www.spglobal.com/spdji/.

Appendix I

Methodology Changes

Methodology changes since November 16, 2015 are as follows:

Change	Effective Date (After Close)	Previous	Methodology	Updated
Index calculations: Interest Cost	12/17/2021	One-month USD LIBOR		SOFR overnight + 0.05575%

Appendix II

ESG Disclosures

EXPLANATION OF HOW ENVIRONMENTAL, SOCIAL & GOVERNANCE (ESG) FACTORS ARE REFLECTED IN THE KEY ELEMENTS OF THE BENCHMARK METHODOLOGY¹	
1.	Name of the benchmark administrator. S&P Dow Jones Indices LLC.
2.	Underlying asset class of the ESG benchmark.² N/A
3.	Name of the S&P Dow Jones Indices benchmark or family of benchmarks. S&P DJI Equity Indices Benchmark Statement
4.	Do any of the indices maintained by this methodology take into account ESG factors? No
Appendix latest update: January 2021	
Appendix first publication: January 2021	

¹ The information contained in this Appendix is intended to meet the requirements of the European Union Commission Delegated Regulation (EU) 2020/1817 supplementing Regulation (EU) 2016/1011 of the European Parliament and of the Council as regards the minimum content of the explanation of how environmental, social and governance factors are reflected in the benchmark methodology and the retained EU law in the UK [The Benchmarks (amendment and Transitional Provision) (EU Exit) Regulations 2019].

² The 'underlying assets' are defined in European Union Commission Delegated Regulation (EU) 2020/1816 supplementing Regulation (EU) 2016/1011 of the European Parliament and of the Council as regards the explanation in the benchmark statement of how environmental, social and governance factors are reflected in each benchmark provided and published.

Disclaimer

Performance Disclosure/Back-Tested Data

Where applicable, S&P Dow Jones Indices and its index-related affiliates (“S&P DJI”) defines various dates to assist our clients in providing transparency. The First Value Date is the first day for which there is a calculated value (either live or back-tested) for a given index. The Base Date is the date at which the index is set to a fixed value for calculation purposes. The Launch Date designates the date when the values of an index are first considered live: index values provided for any date or time period prior to the index’s Launch Date are considered back-tested. S&P DJI defines the Launch Date as the date by which the values of an index are known to have been released to the public, for example via the company’s public website or its data feed to external parties. For Dow Jones-branded indices introduced prior to May 31, 2013, the Launch Date (which prior to May 31, 2013, was termed “Date of introduction”) is set at a date upon which no further changes were permitted to be made to the index methodology, but that may have been prior to the Index’s public release date.

Please refer to the methodology for the Index for more details about the index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations.

Information presented prior to an index’s launch date is hypothetical back-tested performance, not actual performance, and is based on the index methodology in effect on the launch date. However, when creating back-tested history for periods of market anomalies or other periods that do not reflect the general current market environment, index methodology rules may be relaxed to capture a large enough universe of securities to simulate the target market the index is designed to measure or strategy the index is designed to capture. For example, market capitalization and liquidity thresholds may be reduced. In addition, forks have not been factored into the back-test data with respect to the S&P Cryptocurrency Indices. For the S&P Cryptocurrency Top 5 & 10 Equal Weight Indices, the custody element of the methodology was not considered; the back-test history is based on the index constituents that meet the custody element as of the Launch Date. Back-tested performance reflects application of an index methodology and selection of index constituents with the benefit of hindsight and knowledge of factors that may have positively affected its performance, cannot account for all financial risk that may affect results and may be considered to reflect survivor/look ahead bias. Actual returns may differ significantly from, and be lower than, back-tested returns. Past performance is not an indication or guarantee of future results.

Typically, when S&P DJI creates back-tested index data, S&P DJI uses actual historical constituent-level data (e.g., historical price, market capitalization, and corporate action data) in its calculations. As ESG investing is still in early stages of development, certain datapoints used to calculate certain ESG indices may not be available for the entire desired period of back-tested history. The same data availability issue could be true for other indices as well. In cases when actual data is not available for all relevant historical periods, S&P DJI may employ a process of using “Backward Data Assumption” (or pulling back) of ESG data for the calculation of back-tested historical performance. “Backward Data Assumption” is a process that applies the earliest actual live data point available for an index constituent company to all prior historical instances in the index performance. For example, Backward Data Assumption inherently assumes that companies currently not involved in a specific business activity (also known as “product involvement”) were never involved historically and similarly also assumes that companies currently involved in a specific business activity were involved historically too. The Backward Data Assumption allows the hypothetical back-test to be extended over more historical years than would be feasible using only actual data. For more information on “Backward Data Assumption” please refer to the FAQ. The methodology and factsheets of any index that employs backward assumption in the back-tested history will explicitly state so. The methodology will include an Appendix with a table setting forth the specific

data points and relevant time period for which backward projected data was used. Index returns shown do not represent the results of actual trading of investable assets/securities. S&P DJI maintains the index and calculates the index levels and performance shown or discussed but does not manage any assets.

Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the Index or investment funds that are intended to track the performance of the Index. The imposition of these fees and charges would cause actual and back-tested performance of the securities/fund to be lower than the Index performance shown. As a simple example, if an index returned 10% on a US \$100,000 investment for a 12-month period (or US \$10,000) and an actual asset-based fee of 1.5% was imposed at the end of the period on the investment plus accrued interest (or US \$1,650), the net return would be 8.35% (or US \$8,350) for the year. Over a three-year period, an annual 1.5% fee taken at year end with an assumed 10% return per year would result in a cumulative gross return of 33.10%, a total fee of US \$5,375, and a cumulative net return of 27.2% (or US \$27,200).

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