# S&P 500 Futures Edge Volatility Indices

Innovative Tools for Dynamically Managing Risk



S&P Dow Jones Indices

A Division of S&P Global

## S&P 500 Futures Edge Volatility Indices

The S&P 500<sup>®</sup> Futures Edge Volatility Indices measure the performance of leveraged dynamic weighting strategies applied to the S&P 500 Futures Index based on a forward-looking estimate of volatility. For the full methodology, please see <u>here.</u>

## The S&P 500 Futures Edge Volatility Index Series

S&P 500 Futures **35% Edge Volatility Index** (USD) ER

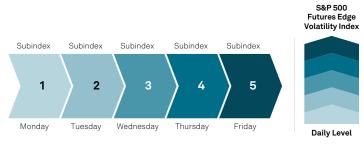
S&P 500 Futures 35% Edge Volatility 6% Decrement Index (USD) ER

S&P 500 Futures 40% Edge Volatility Index (USD) ER

S&P 500 Futures 40% Edge Volatility 6% Decrement Index (USD) ER

Each member of the index series is made up of five component subindices, each of which rebalances on a different weekday. As a result, 20% of each member index is rebalanced daily, providing diversification across weekdays.

For each subindex, the rebalanced amount is determined using a **calculated forward-looking volatility metric** that considers the entire chain of weekly S&P 500 options expiring on the same day of the following week.<sup>1</sup> This mechanism aims to stabilize exposure during volatility spikes and seeks to enhance responsiveness to shifts in market volatility expectations while targeting a pre-defined level of volatility. Each member index targets equal weight exposure to and the same volatility level as each of its five subindices. Each subindex is floored at 25% of the prior week's rebalancing level to help minimize turnover and applies leverage of up to 500%, which seeks to improve upside potential in low volatility environments.



## **Key Characteristics**



## Edge Component: Forward-Looking Volatility

The indices use a forward-looking estimation of volatility to determine exposure to the S&P 500 Futures Index and seek to maintain a pre-determined target level of volatility of 35% and 40%, respectively.

The volatility metric is calculated each day of the week and triggers a rebalance for the corresponding component, helping the indices adapt more quickly to changing markets.



## High Volatility Target and Leverage

Exposure to the S&P 500 increases potential leverage (up to 500%) on the upside and therefore higher potential overall volatility. During periods of historical volatility spikes, such as in March 2020, the back-tested index methodology was able to reduce its leverage based on a forward-looking estimation of volatility. Based on back-tested data, each subindex has, historically, exhibited a leveraged position of 286% on the underlying index for the 40% target volatility index family and 250% for the 35% volatility index family, respectively.

## Back-Tested Historical Leverage Data for the S&P 500 Futures Edge Volatility Index Series

Leverage	40% Target Volatility	35% Target Volatility
Min	37.85%	33.12%
25% Percentile	208.61%	182.53%
50% Percentile	284.99%	249.37%
Average	286.64%	251.94%
75% Percentile	356.52%	311.96%
Max	500%	500%

Source: S&P Dow Jones Indices LLC. Data as of April 30, 2024. The S&P 500 Futures Edge Volatility Indices were launched May 10, 2024. All data prior to index launch date is back-tested hypothetical data. Past performance is no guarantee of future results. Table is provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.



## Liquidity and Flexibility

The S&P 500 Edge Volatility Indices use the large and robust trading ecosystem of the S&P 500 as reflected through weekly expiration options and S&P 500 futures.

By May 2022, weekly S&P 500 options with an expiration for each day of the week (Monday through Friday) were listed for trading in the U.S. These options allow the five component subindices to rebalance each day of the week, enhancing responsiveness to changing market conditions and providing diversification across weekdays.<sup>2</sup>

The options are used within the methodology to calculate the volatility metric, which in turn determines the leveraged rebalance exposure to the S&P 500 Futures Index.<sup>3</sup>



## Intraday Feature

Intraday data is applied at a fixed interval for screening and volatility calculation using S&P 500 options. To avoid any potential end-of-day trading congestion, the indices rebalance intraday between 12:50-13:00 PM ET using a time-weighted average price of the underlying S&P 500 Futures Index.

## How Do the Indices Work?

On each weekday, the subindex corresponding to that particular day of the week noted is calculated as follows:

## 1. Calculate Forward-Looking Volatility

One-week option implied volatility is determined using listed weekly S&P 500 options.

### 2. Calculate Leverage

The weekly leverage level for each subindex is determined as the minimum of its leverage cap and the ratio of its target to forwardlooking volatility.

## 3. Rebalance of Underlying Subindices

Each underlying subindex is rebalanced through an intraday window, utilizing the new leverage level and applying a floor that is 25% of the prior week's rebalancing level to help minimize turnover.

## 4. Top Level Index Calculation

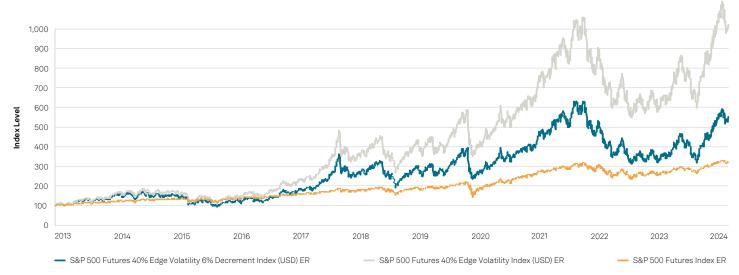
The S&P 500 Futures Edge Volatility Indices target an equal weight exposure to each subindex, based on the weekly rebalance and the leveraged change in levels for non-rebalancing components. Decrement and non-decrement levels are calculated for each target volatility index.

<sup>2</sup> Prior to May 6, 2022, the S&P 500 Futures Edge Volatility Indices only included weekly S&P 500 options listed on some weekdays. Beginning on May 6, 2022, the S&P 500 Futures Edge Volatility Indices included S&P 500 weekly options listed to expire on each business weekday.

<sup>3</sup> For more information on the S&P 500 Futures Index, please see <u>here.</u>

## S&P 500 Futures 40% Edge Volatility (0% and 6% Decrement) Index Performance

## **Back-Tested Historical Performance**



Period	S&P 500 Futures 40% Edge Volatility	S&P 500 Futures 40% Edge	S&P 500 Futures
	6% Decrement Index (USD) ER	Volatility Index (USD) ER	Index ER
Annualized Return (%)			
1-Year	40.50	49.33	15.66
3-Year	2.74	9.19	4.60
5-Year	10.99	17.95	10.41
10-Year	14.32	21.48	10.33
Since July 2013	15.39	22.62	10.83
Annualized Volatility (%)			
1-Year	45.69	45.83	15.03
3-Year	39.84	39.99	17.55
5-Year	38.20	38.35	18.55
10-Year	36.04	36.18	15.35
Since July 2013	35.55	35.68	15.02
<b>Risk-Adjusted Return</b>			
1-Year	0.89	1.08	1.04
3-Year	0.07	0.23	0.26
5-Year	0.29	0.47	0.56
10-Year	0.40	0.59	0.67
Since July 2013	0.43	0.63	0.72
Statistics (%)			
Average Return	1.73	2.24	0.95
Max Return	28.22	28.90	12.95
Min Return	-21.62	-21.19	-12.53

## **Back-Tested Rolling 1-Year Volatility**





### **Back-Tested Annual Performance**

Source: S&P Dow Jones Indices LLC. Data from July 5, 2013, to April 30, 2024. Index performance based on excess return in USD. The S&P 500 Futures Edge Volatility Indices were launched May 10, 2024. All data prior to index launch date is back-tested hypothetical data. Past performance is no guarantee of future results. Charts are provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

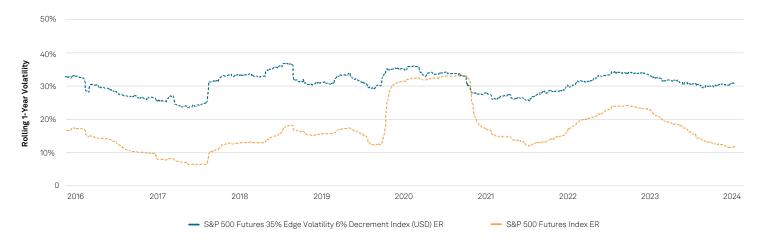
## S&P 500 Futures 35% Edge Volatility (0% and 6% Decrement) Index Performance

## **Back-Tested Historical Performance**



Period	S&P 500 Futures 35% Edge Volatility 6% Decrement Index (USD) ER	S&P 500 Futures 35% Edge Volatility Index (USD) ER	S&P 500 Futures Index ER
Annualized Return (%)			
1-Year	34.49	42.95	15.66
3-Year	2.26	8.68	4.60
5-Year	9.48	16.35	10.41
10-Year	12.58	19.63	10.33
Since July 2013	13.47	20.57	10.83
Annualized Volatility (%)			
1-Year	39.86	39.98	15.03
3-Year	34.81	34.94	17.55
5-Year	33.36	33.48	18.55
10-Year	31.63	31.75	15.35
Since July 2013	31.19	31.31	15.02
Risk-Adjusted Return			
1-Year	0.87	1.07	1.04
3-Year	0.06	0.25	0.26
5-Year	0.28	0.49	0.56
10-Year	0.40	0.62	0.67
Since July 2013	0.43	0.66	0.72
Statistics (%)			
Average Return	1.46	1.98	0.95
Max Return	26.11	26.77	12.95
Min Return	-19.02	-18.58	-12.53

## **Back-Tested Rolling 1-Year Volatility**





#### **Back-Tested Annual Performance**

Source: S&P Dow Jones Indices LLC. Data from July 5, 2013, to April 30, 2024. Index performance based on excess return in USD. The S&P 500 Futures Edge Volatility Indices were launched May 10, 2024. All data prior to index launch date is back-tested hypothetical data. Past performance is no guarantee of future results. Charts are provided for illustrative purposes and reflects hypothetical historical performance. Please see the Performance Disclosure at the end of this document for more information regarding the inherent limitations associated with back-tested performance.

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At S&P Dow Jones Indices, we provide iconic and innovative index solutions backed by unparalleled expertise across the asset-class spectrum. By bringing transparency to the global capital markets, we empower investors everywhere to make decisions with conviction. We're the largest global resource for index-based concepts, data and research, and home to iconic financial market indicators, such as the S&P 500<sup>®</sup> and the Dow Jones Industrial Average<sup>®</sup>. More assets are invested in products based upon our indices than any other index provider in the world. With over USD 8.3 trillion in passively managed assets linked to our indices and over USD 8.4 trillion benchmarked to our indices, our solutions are widely considered essential in tracking market performance, evaluating portfolios, and developing investment strategies.

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#### Performance Disclosure/Back-Tested Data

The S&P 500 Futures Edge Volatility Indices were launched May 10, 2024. All information presented prior to an index's Launch Date is hypothetical (back-tested), not actual performance, and is based on the index methodology in effect on the index 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 Indices. For the S&P Cryptocurrency Indices, the custody element as of the Launch Date. Complete index methodology details are available at www.spglobal.com/spdji. 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.

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. Back-tested performance is for use with institutions only; not for use with retail investors. S&P Dow Jones Indices 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 Dow Jones Indices defines 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.

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 S&P DJI's 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 Dow Jones Indices maintains the index and calculates the index levels and performance shown or discussed but does not manage actual 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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