

# **S&P 500 High Momentum Value Sector Rotation *Methodology***

November 2023

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# Introduction

## Index Objective

The S&P 500 High Momentum Value Sector Rotation is an index of indices that measures the performance of three S&P 500 sectors with high risk-adjusted momentum and value scores. The selected sectors are equal weighted.

For more information on the S&P 500, please refer to the S&P U.S. Indices Methodology at [www.spglobal.com/spdji/](http://www.spglobal.com/spdji/).

## Index Family

The index family consists of the main index strategy with additional risk-controlled overlay versions:

Index
S&P 500 High Momentum Value Sector Rotation
S&P 500 Sector Rotator Daily Risk Control 5%
S&P 500 Sector Rotator Daily Risk Control 6%
S&P 500 Sector Rotator Daily RC2 5-Year Treasury 5%
S&P 500 Sector Rotator Daily RC2 5-Year Treasury 6%
S&P 500 Sector Rotator Daily RC2 10-Year Treasury 5%
S&P 500 Sector Rotator Daily RC2 10-Year Treasury 6%
S&P 500 Sector Rotator Daily RC2 5% (SOFR)

## 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	<a href="#">Equity Indices Policies &amp; Practices</a>
S&P Dow Jones Indices' Index Mathematics Methodology	<a href="#">Index Mathematics Methodology</a>
S&P Dow Jones Indices' Float Adjustment Methodology	<a href="#">Float Adjustment Methodology</a>
S&P Dow Jones Indices' Global Industry Classification Standard (GICS) Methodology	<a href="#">GICS Methodology</a>

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.

# Eligibility Criteria

## Index Eligibility

All sector-level indices within the S&P 500 are eligible:

Sector Index Name
S&P 500 Consumer Discretionary (Sector)
S&P 500 Consumer Staples (Sector)
S&P 500 Energy (Sector)
S&P 500 Financials (Sector)
S&P 500 Health Care (Sector)
S&P 500 Industrials (Sector)
S&P 500 Information Technology (Sector)
S&P 500 Materials (Sector)
S&P 500 Communication Services (Sector)
S&P 500 Utilities (Sector)
S&P 500 Real Estate (Sector)* **

\* *The Real Estate Sector was first eligible for inclusion starting in December 2016.*

\*\* *Prior to September 2016, The S&P 500 Real Estate (Industry Group) index was used as a proxy for value ratios for the S&P 500 Real Estate Sector Index.*

# Index Construction

## **Constituent Selection**

The selection of sectors is done as follows:

1. Individual Value and Momentum Scores are computed for each of the sectors.
2. The top five sectors by Value Score remain eligible for inclusion.
3. The remaining eligible sectors are ranked by Momentum Score. The top three sectors are selected for inclusion.

*Please refer to Appendix I for Value Score calculations and Appendix II for Momentum Score calculations.*

## **Constituent Weightings**

At each rebalancing, the constituent sectors are equal weighted.

## **Index Calculations**

The index is calculated by means of the weighted return method. For calculation details, refer to *S&P Dow Jones Indices' Index Mathematics Methodology*.

# Index Maintenance

## Rebalancing

The indices are rebalanced semi-annually after the close of the last trading day in June and December. The fundamental data reference date is the last business day of the month prior to the rebalancing month.

## Additions and Deletions

Additions and deletions of sector indices occur as part of the semi-annual rebalancings.

## Currency of Calculation and Additional Index Return Series

The indices calculate in U.S. dollars.

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/](http://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 High Momentum Value Sector Rotation	10/19/2018	12/30/2005	12/30/2005	100
S&P 500 Sector Rotator Daily Risk Control 5% Index ER	10/19/2018	06/30/2006	06/30/2006	100
S&P 500 Sector Rotator Daily Risk Control 6% Index ER	10/19/2018	06/30/2006	06/30/2006	100
S&P 500 Sector Rotator Daily RC2 5% (5Yr Treasury) Index ER	10/19/2018	06/30/2006	06/30/2006	100
S&P 500 Sector Rotator Daily RC2 6% (5Yr Treasury) Index ER	10/19/2018	06/30/2006	06/30/2006	100
S&P 500 Sector Rotator Daily RC2 5% Index ER	10/19/2018	06/30/2006	06/30/2006	100
S&P 500 Sector Rotator Daily RC2 6% Index ER	10/19/2018	06/30/2006	06/30/2006	100
S&P 500 Sector Rotator Daily Risk Control 5% Index TR	10/19/2018	06/30/2006	06/30/2006	100
S&P 500 Sector Rotator Daily Risk Control 6% Index TR	10/19/2018	06/30/2006	06/30/2006	100
S&P 500 Sector Rotator Daily RC2 5% (5Yr Treasury) Index TR	10/19/2018	06/30/2006	06/30/2006	100
S&P 500 Sector Rotator Daily RC2 6% (5Yr Treasury) Index TR	10/19/2018	06/30/2006	06/30/2006	100
S&P 500 Sector Rotator Daily RC2 5% Index TR	10/19/2018	06/30/2006	06/30/2006	100

<b>Index</b>	<b>Launch Date</b>	<b>First Value Date</b>	<b>Base Date</b>	<b>Base Value</b>
S&P 500 Sector Rotator Daily RC2 6% Index TR	10/19/2018	06/30/2006	06/30/2006	100
S&P 500 Sector Rotator Daily RC2 5% (SOFR) Index ER	10/20/2021	06/30/2006	06/30/2006	100
S&P 500 Sector Rotator Daily RC2 5% (SOFR) Index TR	10/20/2021	06/30/2006	06/30/2006	100



# Index Data

## Calculation Return Types

S&P Dow Jones Indices calculates multiple return types which vary based on the treatment of regular cash dividends. The classification of regular cash dividends is determined by S&P Dow Jones Indices.

- Price Return (PR) versions are calculated without adjustments for regular cash dividends.
- Gross Total Return (TR) versions reinvest regular cash dividends at the close on the ex-date without consideration for withholding taxes.
- Net Total Return (NTR) versions, if available, reinvest regular cash dividends at the close on the ex-date after the deduction of applicable withholding taxes.

In the event there are no regular cash dividends on the ex-date, the daily performance of all three indices will be identical.

For a complete list of indices available, please refer to the daily index levels file (“.SDL”).

*For more information on the classification of regular versus special cash dividends as well as the tax rates used in the calculation of net return, please refer to S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology.*

*For more information on the calculation of return types, please refer to S&P Dow Jones Indices' Index Mathematics Methodology.*

# Index Governance

## **Index Committee**

An S&P Dow Jones Indices' Index Committee maintains the indices. All committee members are full-time professional members of S&P Dow Jones Indices' staff. The Index Committee meets regularly. At each meeting, the Index 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

## **Holiday Schedule**

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

*A complete holiday schedule for the year is available on the S&P Dow Jones Indices' Web site at [www.spglobal.com/spdji/](http://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 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 any questions regarding an index, please contact: [index\\_services@spglobal.com](mailto:index_services@spglobal.com).

# Index Dissemination

## 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	BBG
S&P 500 High Momentum Value Sector Rotation	SPXHMVSR
S&P 500 Sector Rotator Daily Risk Control 5% Index ER	SPXSR5E
S&P 500 Sector Rotator Daily Risk Control 6% Index ER	SPXSR6E
S&P 500 Sector Rotator Daily RC2 5% (5Yr Treasury) Index ER	SPXSRF5E
S&P 500 Sector Rotator Daily RC2 6% (5Yr Treasury) Index ER	SPXSRF6E
S&P 500 Sector Rotator Daily RC2 5% Index ER	SPXSRT5E
S&P 500 Sector Rotator Daily RC2 6% Index ER	SPXSRT6E
S&P 500 Sector Rotator Daily Risk Control 5% Index TR	SPXSR5T
S&P 500 Sector Rotator Daily Risk Control 6% Index TR	SPXSR6T
S&P 500 Sector Rotator Daily RC2 5% (5Yr Treasury) Index TR	SPXSRF5T
S&P 500 Sector Rotator Daily RC2 6% (5Yr Treasury) Index TR	SPXSRF6T
S&P 500 Sector Rotator Daily RC2 5% Index TR	SPXSRT5T
S&P 500 Sector Rotator Daily RC2 6% Index TR	SPXSRT6T
S&P 500 Sector Rotator Daily RC2 5% (SOFR) Index ER	SPXSRS5E
S&P 500 Sector Rotator Daily RC2 5% (SOFR) Index TR	SPXSRS5T

## 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](http://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/](http://www.spglobal.com/spdji/).

# Appendix I: Value Score Computation

## Fundamental Ratios Calculation

The first step to determine the overall value score of each sector index is to calculate, as of the rebalancing reference date, three fundamental ratios. The ratios are defined as follows:

- **Book Value-to-Price Ratio.** A sector's latest book value divided by its price.
- **Earnings-to-Price Ratio.** A sector's trailing 12-month earnings divided by its price.
- **Sales-to-Price Ratio.** A sector's trailing 12-month sales divided by its price.

**Outlier Handling and Winsorization.** Outlier fundamental ratios are winsorized to ensure that the average values used to calculate the overall value score are less distorted by extreme values. For a given fundamental variable for each sector index, the monthly ratios for the 120 months immediately prior, and exclusive of, the rebalance reference date are first ranked in ascending order. Then, for months that lie above the 97.5 percentile rank or below the 2.5 percentile rank, their value is set as equal to the value of the 97.5 percentile ranked or the 2.5 percentile ranked month, whichever is applicable.

## Z-score & Value Score Computation

**Z-score Computation.** Computing a z-score is a widely adopted method of standardizing a variable in order to combine it with other variables that may have a different scale or unit of measurement. After winsorizing all the three fundamental ratios, the z-score for each of the three ratios for each index is calculated using the mean and standard deviation of the relevant variable within each of the index universes. For each ratio, the rebalance reference date ratio is compared to the winsorized historical 120-month ratio dataset.

The z-score is calculated as follows:

$$z_{\alpha} = \frac{(x_{\alpha} - \mu_{\alpha})}{\sigma_{\alpha}}$$

where:

$z_{\alpha}$  = Z-score for a given index month

$x_{\alpha}$  = Variable for a given index

$\mu_{\alpha}$  = Arithmetic mean of the winsorized variable in a given index universe, excluding any missing values

$\sigma_{\alpha}$  = Standard deviation of the winsorized variable in a given index universe

**Average Z-score Computation.** For each sector index, the average z-score is computed by taking a simple average of the three scores. Where there is a missing value, the average z-score is computed by taking a simple average of the remaining two scores. A sector index must have at least one z-score for it to be included in the index.

**Outlier Handling and Winsorization.** Outlier average z-scores are winsorized to ensure that the average values used to calculate the overall value score are less distorted by extreme values. To do this, for a given average z-score, the values for all securities are first ranked in ascending order. Then, for months that lie above 4 or below -4, their value is set as equal to 4 or -4, whichever is applicable.

# Appendix II: Momentum Score Computation

## Momentum Value Calculation

Momentum value is calculated for the total return version of each sector index on each of the rebalancing reference dates. The momentum value is determined as follows:

1. The momentum value is computed as the 6-month price change, excluding the most recent month of the security in **local** currency. The effective rebalancing month is stated as month ( $M$ ).

- a. Momentum Value =  $(price_{M-2} / price_{M-8}) - 1$

NOTE 1: For example, if the effective rebalancing date is on 07/02/2018, the reference date is 05/31/2018, and the momentum value will be calculated based on the prices from 04/30/2018 ( $price_{M-2}$ ) and 10/31/2017 ( $price_{M-8}$ ).

2. The momentum value is further adjusted by the sector index's volatility. For a given *positive* price change over the evaluation period, *lower* volatility improves the adjusted momentum value. For a given *negative* price change over the evaluation period, *higher* volatility improves the adjusted momentum value. When many sector indices within a given index universe experience negative price changes over a relevant evaluation period, the volatility adjustment may cause the selection of sector indices with higher negative price changes.

$$\text{Risk-Adjusted Momentum Value} = \frac{\text{MomentumValue}_i}{\sigma_i}$$

where:

$\sigma$  = Standard deviation of daily price returns for the same date period used in Step 1 above.

## Appendix III: Risk Control Methodology Notes

The risk-controlled indices follow the calculation set forth in the Index Mathematics Methodology document with one exception. The realized short- and long-term volatility and correlations calculations reset at each rebalancing with the most recent 100 daily returns using the current sector allocation combinations for historical volatility calculations, as opposed to the realized volatility of the actual risk-controlled index.

## Appendix IV: ESG Disclosures

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

<sup>1</sup> 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].

<sup>2</sup> 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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