

**S&P Dow Jones
Indices**

A Division of **S&P Global**

S&P Factor-Based Quintile Indices *Methodology*

December 2024

Table of Contents

Introduction	3
Index Objectives	3
Supporting Documents	3
Eligibility Criteria and Index Construction	4
Index Universe and Targeted Constituent Set	4
Index Calculations	4
S&P Volatility – Highest Quintile Indices	5
S&P Enhanced Value – Lowest Quintile Indices	7
S&P Quality – Lowest Quintile Indices	9
S&P Momentum – Lowest Quintile Indices	10
Index Maintenance	11
Rebalancing	11
Additions and Deletions	12
Corporate Actions	12
Other Adjustments	12
Currency of Calculation and Additional Index Return Series	12
Base Dates and History Availability	13
Index Data	14
Calculation Return Types	14
Index Governance	15
Index Committee	15
Index Policy	16
Announcements	16
Pro-forma Files	16
Holiday Schedule	16
Rebalancing	16
Unexpected Exchange Closures	16
Recalculation Policy	16
Contact Information	16
Index Dissemination	17
Index Data	17
Web site	17

Appendix A		18
	Back-tested History	18
Appendix B		19
	Methodology Changes	19
Appendix C		20
	ESG Disclosures	20
Disclaimer		21
	Performance Disclosure/Back-Tested Data	21
	Intellectual Property Notices/Disclaimer	22
	ESG Indices Disclaimer	24

Introduction

Index Objectives

S&P Volatility – Highest Quintile Indices. The indices measure the volatility-weighted performance of the most volatile stocks in a given underlying universe index. Volatility is defined as the standard deviation of the security's daily price returns in local currency over the past year.

S&P Enhanced Value – Lowest Quintile Indices. The indices measure the value-adjusted weighted performance of the lowest ranked stocks in a given underlying universe index based on their value score, which is calculated based on three fundamental measures: book value-to-price, earnings-to-price, and sales-to-price.

S&P Quality – Lowest Quintile Indices. The indices measure the quality-adjusted weighted performance of the lowest ranked stocks in a given underlying universe index based on their quality score, which is calculated based on three fundamental measures: return on equity, accruals ratio, and financial leverage ratio.

S&P Momentum – Lowest Quintile Indices. The indices measure the momentum-adjusted weighted performance of stocks in a given underlying universe index that exhibit the lowest relative risk-adjusted performance.

Please refer to *Eligibility Criteria and Index Construction* for further details on each index's underlying universe index and targeted constituent set.

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
S&P Dow Jones Indices' Global Industry Classification Standard (GICS) Methodology	GICS 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.

Eligibility Criteria and Index Construction

Index Universe and Targeted Constituent Set

Each S&P Factor-Based Quintile Index includes a targeted set of index constituents (N) that are drawn from an underlying universe index:

Index	Targeted Constituent Set (N)	Underlying Universe Index
S&P 500 Volatility – Highest Quintile Index	100 Stocks	S&P 500
S&P 500 Enhanced Value – Lowest Quintile Index		
S&P 500 Quality – Lowest Quintile Index		
S&P 500 Momentum – Lowest Quintile Index	Bottom 20% of Stocks	
S&P MidCap 400 Volatility – Highest Quintile Index	80 Stocks	S&P MidCap 400
S&P MidCap 400 Enhanced Value – Lowest Quintile Index		
S&P MidCap 400 Quality – Lowest Quintile Index		
S&P MidCap 400 Momentum – Lowest Quintile Index	Bottom 20% of Stocks	
S&P SmallCap 600 Volatility – Highest Quintile Index	120 Stocks	S&P SmallCap 600
S&P SmallCap 600 Enhanced Value – Lowest Quintile Index		
S&P SmallCap 600 Quality – Lowest Quintile Index		
S&P SmallCap 600 Momentum – Lowest Quintile Index	Bottom 20% of Stocks	
S&P Developed Ex-U.S. Volatility – Highest Quintile Index	Top 20% of Stocks	S&P Developed Ex-US LargeMidCap
S&P Developed Ex-U.S. Enhanced Value – Lowest Quintile Index	Bottom 20% of Stocks	S&P Developed Ex-US LargeMidCap
S&P Developed Ex-U.S. Quality – Lowest Quintile Index	Bottom 20% of Stocks	S&P Developed Ex-US LargeMidCap
S&P Developed Ex-U.S. Momentum – Lowest Quintile Index	Bottom 20% of Stocks	S&P Developed Ex-US LargeMidCap

For the S&P Momentum indices, the number of stocks selected is rounded up if the targeted constituent set results in a fractional company amount.

For information on stock eligibility criteria and index management rules of the S&P 500, S&P MidCap 400, S&P SmallCap 600, and S&P Developed Ex-US LargeMidCap, please refer to the S&P U.S. Indices Methodology and S&P Global BMI, S&P/IFCI Methodology, respectively, available at www.spglobal.com/spdji/.

Index Calculations

The indices are calculated by means of the divisor methodology used in all S&P Dow Jones Indices' equity indices.

For more information on index calculations, please refer to the Non-Market Capitalization Weighting section of S&P Dow Jones Indices' Index Mathematics Methodology.

S&P Volatility – Highest Quintile Indices

Index Eligibility. Index constituents are drawn from the respective underlying universe index as detailed in *Index Universe and Targeted Constituent Set*. In order to be eligible for index consideration, the security must be a member of the underlying universe index on the rebalancing reference date.

Securities must also satisfy the following to be considered for index inclusion:

- **Trading History.** Stocks must have been issued and trading for at least one calendar year leading up to the rebalancing reference date. Generally, a stock must have traded on all trading days in the 12 months leading up to the rebalancing reference date; however, Index Committee discretion may be used in situations where a stock was subject to a temporary trading halt during that period.
- **Multiple Share Classes.** Each company is represented once by the Designated Listing. For more information regarding the treatment of multiple share classes, please refer to Approach B within the Multiple Share Classes section of the S&P Dow Jones Indices' Equity Indices Policies & Practices document.
- **Liquidity.** For the S&P Developed Ex-U.S. Volatility – Highest Quintile Index new constituents must have a six-month median daily value traded (MDVT) of at least US \$3 million (current constituents US \$2.5 million).

Constituent Selection. The selection of index constituents is done as follows:

1. Using available price return data for the trailing one year of trading days leading up to each index rebalancing reference date, the volatilities of the constituents within the underlying universe index are calculated.
2. Constituents meeting the eligibility requirements as described in *Index Eligibility* are then ranked in descending order based on their realized volatilities. The N stocks with the greatest volatility are selected and form the index.

For the S&P Developed Ex-U.S. Volatility – Highest Quintile Index, a 20% buffer is applied to stocks already in the index in order to reduce turnover and is implemented as follows:

- Stocks are ranked in descending order of volatility and those ranked within the top 80% of the targeted constituent set are automatically chosen for index inclusion.
- All stocks which are current constituents that fall within the top 120% of the targeted constituent set are then chosen for index inclusion in order of their volatility.
- If at this point the targeted constituent set has still not been met, the remaining stocks are chosen based on the highest volatility.

Constituent Weightings. The methodology employs a volatility-weighting scheme. At each rebalancing, the weight, w , for each index constituent, i , is set proportional to its volatility.

$$w_i = \frac{\text{Volatility}_i}{\sum_{i=1}^N \text{Volatility}}$$

where:

N = The number of index constituents, as specified in *Index Universe and Targeted Constituent Set*

Volatility is defined as the standard deviation of the security's daily price returns over the prior one year of trading days. It can be mathematically expressed as:

$$\sqrt{\frac{\sum_{i=1}^N (X_i - \bar{X})^2}{N-1}}$$

where:

$$X_i = \text{Price change} = \frac{P_t}{P_{t-1}} - 1$$

P_t = Closing price of the stock on day t

P_{t-1} = Closing price of the stock on day $t-1$

t = 1 to N

\bar{X} = Average price change

N = Number of trading days in a year based on local calendar

S&P Developed Ex-US Volatility – Highest Quintile Index. After the above weighting process is complete, constituents' weights are then subject to security, sector, and country constraints. This is done by using an optimization procedure such that the maximum weight of each security is the lower of 5% and 20 times its market capitalization weight in the eligible universe. The maximum weight of any given GICS sector is 40%, and the maximum weight of any country is 40%. Each stock's weight is floored at 0.05%.

Where the optimization procedure fails for a given period, the constraints are then relaxed in the following order: the maximum weight of the security, then the maximum weight of the sector, then the maximum weight of the country (if applicable), and finally 20 times its market capitalization weight.

For more information, please refer to the Non-Market Capitalization Weighting section of S&P Dow Jones Indices' Index Mathematics Methodology.

S&P Enhanced Value – Lowest Quintile Indices

Index Eligibility. Index constituents are drawn from the respective underlying universe index as detailed in *Index Universe and Targeted Constituent Set*. In order to be eligible for index consideration, the security must be a member of the underlying universe index on the rebalancing reference date.

Securities must also satisfy the following to be considered for index inclusion:

Multiple Share Classes. Each company is represented once by the Designated Listing. For more information regarding the treatment of multiple share classes, please refer to Approach B within the Multiple Share Classes section of the S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology.

Liquidity. For the S&P Developed Ex-US Enhanced Value – Lowest Quintile index new constituents must have a six-month MDVT of at least US \$3 million (current constituents US \$2.5 million).

Constituent Selection. The selection of index constituents is done as follows:

1. Value scores are computed for each of the stocks that satisfy the criteria as detailed in *Index Eligibility*.

For more information on the calculation of the value scores, please refer to the S&P Enhanced Value Indices Methodology available at www.spglobal.com/spdji/.

2. The stocks are then ranked based on their value scores. The N stocks with the lowest value scores are selected and form the index.

where:

N = number of index constituents, as specified in *Index Universe and Targeted Constituent Set*

3. A 20% buffer is applied to stocks already in the index in order to reduce turnover and is implemented as follows:
 - a. Stocks are ranked based on value score and those ranked within the bottom 80% of the targeted constituent set are automatically chosen for index inclusion.
 - b. All stocks which are current constituents that fall within the bottom 120% of the targeted constituent set are then chosen for index inclusion in order of their value score.
 - c. If the targeted constituent set has still not been met, the remaining stocks are chosen based on the lowest value score.

Constituent Weightings. The methodology employs a non-market-capitalization weighting scheme. Adjusted value scores are calculated for all securities selected for index inclusion.

First, each stock's average Z-score is multiplied by -1. Then, adjusted value scores are calculated as detailed in the *S&P Enhanced Value Indices Methodology*. For a given rebalancing, all the securities eligible for inclusion in the index are weighted by the product of their market capitalization in the underlying universe index and their adjusted value score, subject to security, sector, and country (if applicable) constraints. This is done by using an optimization procedure such that the maximum weight of each security is the lower of 5% and 20 times its market capitalization weight in the underlying universe index and the maximum weight of any given GICS sector and country (if applicable) is 40%. Each stock's weight is floored at 0.05%. Note that the capping algorithm redistributes the excess weight to the other stocks in proportion to their value weights.

Where the optimization procedure fails for a given period, the constraints are then relaxed in the following order: the maximum weight of the security, and then the maximum weight of the sector, and then the maximum weight of the country (if applicable), and finally 20 times its market capitalization weight.

For more information, please refer to the Non-Market Capitalization Weighting section of S&P Dow Jones Indices' Index Mathematics Methodology.

S&P Quality – Lowest Quintile Indices

Index Eligibility. Index constituents are drawn from the respective underlying universe index as detailed in *Index Universe and Targeted Constituent Set*. In order to be eligible for index consideration, the security must be a member of the underlying universe index on the rebalancing reference date.

Securities must also satisfy the following to be considered for index inclusion:

Multiple Share Classes and Dual-Listed Companies. Each company is represented once by the Designated Listing. For more information regarding the treatment of multiple share classes, please refer to Approach B within the Multiple Share Classes section of the S&P Dow Jones Indices' Equity Indices Policies & Practices document.

Liquidity. For the S&P Developed Ex-US Quality – Lowest Quintile Index new constituents must have a six-month MDVT of at least US \$3 million (current constituents US \$2.5 million).

Constituent Selection. The selection of index constituents is done as follows:

1. Quality scores are computed for each of the stocks that satisfy the criteria as detailed in *Index Eligibility*.

For more information on the calculation of the quality scores, please refer to the S&P Quality Indices Methodology available at www.spglobal.com/spdji/.

2. The stocks are then ranked based on their quality scores. The N stocks with the lowest quality scores are selected and form the index.

where:

N = number of index constituents, as specified in *Index Universe and Targeted Constituent Set*

3. A 20% buffer is applied to stocks already in the index in order to reduce turnover and is implemented as follows:
 - a. Stocks are ranked based on quality score and those ranked within the bottom 80% of the targeted constituent set are automatically chosen for index inclusion.
 - b. All stocks which are current constituents that fall within the bottom 120% of the targeted constituent set are then chosen for index inclusion in order of their quality score.
 - c. If at this point the targeted constituent set has still not been met, the remaining stocks are chosen based on the lowest quality score.

Constituent Weightings. The methodology employs a non-market-capitalization weighting scheme. Adjusted quality scores are calculated for all securities selected for index inclusion.

First, each stock's average Z-score is multiplied by -1. Then, adjusted quality scores are calculated as detailed in the *S&P Quality Indices Methodology*. For a given rebalancing, all the securities eligible for inclusion in the index are weighted by the product of their market capitalization in the underlying universe index and their adjusted quality score subject to security, sector, and country (if applicable) constraints. This is done by using an optimization procedure such that the maximum weight of each security is the lower of 5% and 20 times its market capitalization weight in the underlying universe index and the maximum weight of any given GICS sector and country (if applicable) is 40%. Each stock's weight is floored at 0.05%. Note that the capping algorithm redistributes the excess weight to the other stocks in proportion to their quality weights.

Where the optimization procedure fails for a given period, the constraints are then relaxed in the following order: the maximum weight of the security, and then the maximum weight of the sector, and then the maximum weight of the country (if applicable), and finally 20 times its market capitalization weight.

For more information, please refer to the Non-Market Capitalization Weighting section of S&P Dow Jones Indices' Index Mathematics Methodology.

S&P Momentum – Lowest Quintile Indices

Index Eligibility. Index constituents are drawn from the respective underlying universe index as detailed in *Index Universe and Targeted Constituent Set*. In order to be eligible for index consideration, the security must be a member of the underlying universe index on the rebalancing effective date.

Securities must also satisfy the following to be considered for index inclusion:

- **Trading History.** Stocks must have traded at least 150 trading days during the 12-month measurement period.
- **Multiple Share Classes.** All publicly listed multiple share class lines are eligible for index inclusion, subject to meeting the eligibility criteria. For more information regarding the treatment of multiple share classes, please refer to Approach A within the Multiple Share Classes section of the S&P Dow Jones Indices' Equity Indices Policies & Practices document.
- **Liquidity.** For the S&P Developed Ex-US Momentum – Lowest Quintile Index new constituents must have a six-month MDVT of at least US \$3 million (current constituents US \$2.5 million).

Constituent Selection. The selection of index constituents is done as follows:

1. Momentum scores are computed for each of the stocks that satisfy the criteria as detailed in *Index Eligibility*.

For more information on the calculation of the momentum scores, please refer to the S&P Momentum Indices Methodology available at www.spglobal.com/spdji/.

2. The stocks are then ranked based on their momentum scores. The N stocks with the lowest momentum scores are selected and form the index.

where:

N = number of index constituents, as specified in *Index Universe and Targeted Constituent Set*

3. A 20% buffer is applied to stocks already in the index in order to reduce turnover and is implemented as follows:
 - a. Stocks are ranked based on momentum score and are automatically chosen for index inclusion if they meet the following:
 - i. Are ranked within the bottom 16% of the targeted constituent set.
 - b. All stocks which are current constituents are then chosen for index inclusion in order of their momentum score if they meet the following:
 - i. Are ranked within the bottom 24% of the targeted constituent set.
 - c. If at this point the targeted constituent set has still not been met, the remaining stocks are chosen based on the lowest momentum score.

Constituent Weightings. The methodology employs a non-market-capitalization weighting scheme. Adjusted momentum scores are calculated for all securities selected for index inclusion.

First, each stock's average Z-score is multiplied by -1. Then, adjusted momentum scores are calculated as detailed in the *S&P Momentum Indices Methodology*. For a given rebalancing, all the securities eligible for inclusion in the index are weighted by the product of their market capitalization in the underlying universe index and their adjusted momentum score subject to security constraints. This is done by using an optimization procedure such that the maximum weight of each security is the lower of 9% and three times its market capitalization weight in the index.

For more information, please refer to the Non-Market Capitalization Weighting section of S&P Dow Jones Indices' Index Mathematics Methodology.

Index Maintenance

Rebalancing

S&P Volatility – Highest Quintile Indices. , The indices rebalance quarterly, effective after the close of the third Friday of February, May, August, and November. The reference date for each rebalancing is the last trading date of January, April, July, and October, respectively. Constituents' index shares are calculated using closing prices on the Wednesday prior to the second Friday of the rebalancing month as the reference price. Index shares are calculated and assigned to each stock to arrive at the weights determined on the reference date. Since index shares are assigned in advance, the actual weight of each stock at the rebalancing differs from these weights due to market movements.

Rebalancing Schedule	
Rebalancing Frequency	Quarterly
Rebalancing Date	After the close of the third Friday of February, May, August, and November
Reference Date	Last trading date of January, April, July, and October
Weights Reference Date	Closing prices on the Wednesday prior to the second Friday of the rebalancing month

S&P Developed Ex-US Volatility – Highest Quintile Index. The index rebalances quarterly, effective after the close of the third Friday of March, June, September, and December. The reference date for each rebalancing is the last trading date of February, May, August and November respectively.

Rebalancing Schedule	
Rebalancing Frequency	Quarterly
Rebalancing Date	After the close of the third Friday of March, June, September, and December
Reference Date	Last trading date of February, May, August, and November
Weights Reference Date	Closing prices on the Wednesday prior to the second Friday of the rebalancing month

S&P Enhanced Value – Lowest Quintile Indices and S&P Quality – Lowest Quintile Indices. The indices rebalance semi-annually after the close on the third Friday of June and December. The fundamental data reference date for each rebalancing is five weeks prior to the rebalancing effective date. As part of the rebalancing process, constituent stock weights are updated. The rebalancing reference dates are the last business day of May and November, respectively. Constituents' index shares are calculated using closing prices on the Wednesday prior to the second Friday of the rebalancing month as the reference price. Index shares are calculated and assigned to each stock to arrive at the weights determined on the reference date. Since index shares are assigned in advance, the actual weight of each stock at the rebalancing differs from these weights due to market movements.

Rebalancing Schedule	
Rebalancing Frequency	Semi-annually
Rebalancing Date	After the close on the third Friday of June and December
Fundamental Data Reference Date	Five weeks prior to the rebalancing date
Reference Date	The last business day of May and November
Weights Reference Date	Closing prices as of the Wednesday prior to the second Friday of June and December

S&P Momentum – Lowest Quintile Indices. The indices rebalance semi-annually after the close on the third Friday of March and September. As part of the rebalancing process, constituent stock weights are updated. The reference date for each rebalancing is the last business day of February and August, respectively. Weights calculated as a result of the reference date data are implemented in the index using closing prices as of the last business day of February and August.

Rebalancing Schedule	
Rebalancing Frequency	Semi-annually
Rebalancing Date	After the close on the third Friday of March and September
Reference Date	The last business day of February and August
Weights Reference Date	Closing prices as of the last business day of February and August

Additions and Deletions

Additions. Except for spin-offs, companies can only be added to an index at the time of the rebalancing. A spin-off company is added to all the indices of which the parent is a constituent, at a zero price at the market close of the day before the ex-date (with no divisor adjustment). The spin-off is removed after at least one day of regular way trading (with a divisor adjustment).

Deletions. Constituents removed from an underlying universe index are also removed from the respective S&P Factor-Based Quintile Indices simultaneously. Constituents can also be removed due to delisting, acquisition or any other corporate action resulting in the deletion of the stock from the underlying universe index. A stock dropped due to one of these events causes the weights of the rest of the stocks in the index to change proportionately.

Corporate Actions

For information on Corporate Actions, please refer to the Non-Market Capitalization section of S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology.

Other Adjustments

In cases where there is no achievable market price for a stock being deleted, it may be removed at a zero or minimal price at the Index Committee's discretion, in recognition of the constraints faced by investors in trading bankrupt or suspended stocks.

Currency of Calculation and Additional Index Return Series

The indices are calculated in U.S. dollars.

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 [S&P DJI Methodology & Regulatory Status Database](#).

For information on the calculation of different types of indices, 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 Volatility – Highest Quintile Index	02/10/2017	11/16/1990	11/16/1990	100
S&P 500 Enhanced Value – Lowest Quintile Index	02/10/2017	12/16/1994	12/16/1994	100
S&P 500 Quality – Lowest Quintile Index	02/10/2017	12/16/1994	12/16/1994	100
S&P 500 Momentum – Lowest Quintile Index	02/10/2017	09/16/1994	09/16/1994	100
S&P MidCap 400 Volatility – Highest Quintile Index	11/13/2017	11/15/1991	11/15/1991	100
S&P MidCap 400 Enhanced Value – Lowest Quintile Index	11/13/2017	12/20/1991	12/20/1991	100
S&P MidCap 400 Quality – Lowest Quintile Index	11/13/2017	12/20/1991	12/20/1991	100
S&P MidCap 400 Momentum – Lowest Quintile Index	11/13/2017	09/20/1991	09/20/1991	100
S&P SmallCap 600 Volatility – Highest Quintile Index	12/15/2017	02/17/1995	02/17/1995	100
S&P SmallCap 600 Enhanced Value – Lowest Quintile Index	01/04/2018	12/30/1994	12/30/1994	100
S&P SmallCap 600 Quality – Lowest Quintile Index	01/04/2018	12/30/1994	12/30/1994	100
S&P SmallCap 600 Momentum – Lowest Quintile Index	01/04/2018	03/17/1995	03/17/1995	100
S&P Developed Ex-US Volatility – Highest Quintile Index	12/03/2021	03/19/1993	03/19/1993	1000
S&P Developed Ex-US Enhanced Value – Lowest Quintile Index	12/03/2021	12/17/1999	12/17/1999	1000
S&P Developed Ex-US Quality – Lowest Quintile Index	12/03/2021	12/17/1999	12/17/1999	1000
S&P Developed Ex-US Momentum – Lowest Quintile Index	12/03/2021	09/16/1994	09/16/1994	1000

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. The Committee meets regularly. At each meeting, the Committee may review 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

All index constituents are evaluated daily for data needed to calculate index levels and returns. All events affecting the daily index calculation are typically announced in advance via the Index Corporate Events report (.SDE), delivered daily to all clients. Any unusual treatment of a corporate action or short notice of an event may be communicated via email to clients.

For more information, please refer to the Announcements section of S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology.

Pro-forma Files

In addition to the corporate events file (.SDE), S&P Dow Jones Indices provides constituent pro-forma files each time the indices rebalance. The pro-forma file is typically provided daily in advance of the rebalancing date and contains all constituents and their corresponding weights and index shares effective for the upcoming rebalancing.

Please visit www.spglobal.com/spdji/ for a complete schedule of rebalancing timelines and pro-forma delivery times.

Holiday Schedule

The indices are calculated daily, throughout the calendar year. The only days an index is not calculated are on days when all exchanges where the index's constituents are listed are officially closed.

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.

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, numerous investment-oriented Web sites, and various print and electronic media.

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 A

Back-tested History

Certain index rules differ in the index history versus the rules at launch. The following historical deviations exist.

S&P Developed Ex-US Volatility – Highest Quintile Index. For history prior to 2001, the MDVT threshold was US \$2 million (current constituents US \$1.5 million).

Appendix B

Methodology Changes

Methodology changes since February 10, 2017 are as follows:

Change	Effective Date (After Close)	Previous	Methodology Updated
S&P Volatility – Highest Quintile Indices :	04/29/2020	Constituents' index shares are calculated using closing prices on the second Friday of the rebalancing month as the reference price.	Constituents' index shares are calculated using the closing prices on the Wednesday prior to the second Friday of the rebalancing month as the reference price.
Rebalancing – Calculation of Index Shares			

Appendix C

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 by 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. Also, the treatment of corporate actions in back-tested performance may differ from treatment for live indices due to limitations in replicating index management decisions. 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).

Intellectual Property Notices/Disclaimer

© 2024 S&P Dow Jones Indices. All rights reserved. S&P, S&P 500, SPX, SPY, The 500, US500, US 30, S&P 100, S&P COMPOSITE 1500, S&P 400, S&P MIDCAP 400, S&P 600, S&P SMALLCAP 600, S&P GIVI, GLOBAL TITANS, DIVIDEND ARISTOCRATS, Select Sector, S&P MAESTRO, S&P PRISM, S&P STRIDE, GICS, SPIVA, SPDR, INDEXOLOGY, iTraxx, iBoxx, ABX, ADBI, CDX, CMBX, MBX, MCDX, PRIMEX, HHPI, and SOVX are registered trademarks of S&P Global, Inc. (“S&P Global”) or its affiliates. DOW JONES, DJIA, THE DOW and DOW JONES INDUSTRIAL AVERAGE are trademarks of Dow Jones Trademark Holdings LLC (“Dow Jones”). These trademarks together with others have been licensed to S&P Dow Jones Indices LLC. Redistribution or reproduction in whole or in part are prohibited without written permission of S&P Dow Jones Indices LLC. This document does not constitute an offer of services in jurisdictions where S&P DJI does not have the necessary licenses. Except for certain custom index calculation services, all information provided by S&P DJI is impersonal and not tailored to the needs of any person, entity, or group of persons. S&P DJI receives compensation in connection with licensing its indices to third parties and providing custom calculation services. Past performance of an index is not an indication or guarantee of future results.

It is not possible to invest directly in an index. Exposure to an asset class represented by an index may be available through investable instruments based on that index. S&P DJI does not sponsor, endorse, sell, promote or manage any investment fund or other investment vehicle that is offered by third parties and that seeks to provide an investment return based on the performance of any index. S&P DJI makes no assurance that investment products based on the index will accurately track index performance or provide positive investment returns. S&P DJI is not an investment advisor, commodity trading advisor, fiduciary, “promoter” (as defined in the Investment Company Act of 1940, as amended) or “expert” as enumerated within 15 U.S.C. § 77k(a), and S&P DJI makes no representation regarding the advisability of investing in any such investment fund or other investment vehicle. A decision to invest in any such investment fund or other investment vehicle should not be made in reliance on any of the statements set forth in this document. S&P DJI is not a tax advisor. Inclusion of a security, commodity, crypto currency, or other asset within an index is not a recommendation by S&P DJI to buy, sell, or hold such security, commodity, crypto currency, or other asset, nor is it considered to be investment or trading advice.

These materials have been prepared solely for informational purposes based upon information generally available to the public and from sources believed to be reliable. No content contained in these materials (including index data, ratings, credit-related analyses and data, research, valuations, model, software or other application or output therefrom) or any part thereof (“Content”) may be modified, reverse engineered, reproduced, or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of S&P DJI. The Content shall not be used for any unlawful or unauthorized purposes. S&P DJI and its third-party data providers and licensors (collectively “S&P Dow Jones Indices Parties”) do not guarantee the accuracy, completeness, timeliness, or availability of the Content. S&P Dow Jones Indices Parties are not responsible for any errors or omissions, regardless of the cause, for the results obtained from the use of the Content. THE CONTENT IS PROVIDED ON AN “AS IS” “WHERE IS” BASIS. S&P DOW JONES INDICES PARTIES DISCLAIMS ANY AND ALL

EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT'S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall S&P Dow Jones Indices Parties be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special, or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs) in connection with any use of the Content even if advised of the possibility of such damages.

Credit-related information and other analyses, including ratings, research and valuations are generally provided by licensors and/or affiliates of S&P Dow Jones Indices, including but not limited to S&P Global's other divisions such as S&P Global Market Intelligence. Any credit-related information and other related analyses and statements in the Content are statements of opinion as of the date they are expressed and not statements of fact. Any opinion, analyses and rating acknowledgement decisions are not recommendations to purchase, hold, or sell any securities or to make any investment decisions, and do not address the suitability of any security. S&P Dow Jones Indices does not assume any obligation to update the Content following publication in any form or format. The Content should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions. S&P DJI does not act as a fiduciary or an investment advisor. While S&P DJI has obtained information from sources it believes to be reliable, S&P DJI does not perform an audit or undertake independent verification of any information it receives. S&P DJI reserves the right to vary or discontinue any index at any time for regulatory or other reasons. Various factors, including external factors beyond S&P DJI's control might necessitate material changes to indices.

To the extent that regulatory authorities allow a rating agency to acknowledge in one jurisdiction a rating issued in another jurisdiction for certain regulatory purposes, S&P Global Ratings reserves the right to assign, withdraw or suspend such acknowledgement at any time and in its sole discretion. S&P Dow Jones Indices, including S&P Global Ratings, disclaim any duty whatsoever arising out of the assignment, withdrawal, or suspension of an acknowledgement as well as any liability for any damage alleged to have been suffered on account thereof. Affiliates of S&P Dow Jones Indices LLC, including S&P Global Ratings, may receive compensation for its ratings and certain credit-related analyses, normally from issuers or underwriters of securities or from obligors. Such affiliates of S&P Dow Jones Indices LLC, including S&P Global Ratings, reserve the right to disseminate its opinions and analyses. Public ratings and analyses from S&P Global Ratings are made available on its Web sites, www.standardandpoors.com (free of charge), and www.ratingsdirect.com and www.globalcreditportal.com (subscription), and may be distributed through other means, including via S&P Global Ratings publications and third-party redistributors. Additional information about our ratings fees is available at www.standardandpoors.com/usratingsfees.

S&P Global keeps certain activities of its various divisions and business units separate from each other to preserve the independence and objectivity of their respective activities. As a result, certain divisions and business units of S&P Global may have information that is not available to other business units. S&P Global has established policies and procedures to maintain the confidentiality of certain nonpublic information received in connection with each analytical process.

In addition, S&P Dow Jones Indices provides a wide range of services to, or relating to, many organizations, including issuers of securities, investment advisers, broker-dealers, investment banks, other financial institutions, and financial intermediaries, and accordingly may receive fees or other economic benefits from those organizations, including organizations whose securities or services they may recommend, rate, include in model portfolios, evaluate, or otherwise address.

Some indices use the Global Industry Classification Standard (GICS®), which was developed by, and is the exclusive property and a trademark of, S&P Global and MSCI. Neither MSCI, S&P DJI nor any other party involved in making or compiling any GICS classifications makes any express or implied warranties or representations with respect to such standard or classification (or the results to be obtained by the use

thereof), and all such parties hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability, or fitness for a particular purpose with respect to any of such standard or classification. Without limiting any of the foregoing, in no event shall MSCI, S&P DJI, any of their affiliates or any third party involved in making or compiling any GICS classifications have any liability for any direct, indirect, special, punitive, consequential or any other damages (including lost profits) even if notified of the possibility of such damages.

S&P Dow Jones Indices products are governed by the terms and conditions of the agreements under which they may be provided. A license is required from S&P Dow Jones Indices to display, create derivative works of and/or distribute any product or service that uses, is based upon and/or refers to any S&P Dow Jones Indices and/or index data.

ESG Indices Disclaimer

S&P DJI provides indices that seek to select, exclude, and/or weight index constituents based on, but not limited to, certain environmental, social or governance (ESG) indicators, or a combination of those indicators, including the following: environmental indicators (including the efficient use of natural resources, the production of waste, greenhouse gas emissions, or impact on biodiversity); social indicators (such as, inequality and investment in human capital); governance indicators (such as sound management structures, employee relations, remuneration of staff, tax compliance, respect for human rights, anti-corruption and anti-bribery matters), specific sustainability or values-related company involvement indicators (for example, production/distribution of controversial weapons, tobacco products, or thermal coal), or controversies monitoring (including research of media outlets to identify companies involved in ESG-related incidents).

S&P DJI ESG indices use ESG metrics and scores in the selection and/or weighting of index constituents. ESG scores or ratings seek to measure or evaluate a company's, or an asset's, performance with respect to environmental, social and corporate governance issues.

The ESG scores, ratings, and other data used in S&P DJI ESG indices is supplied directly or indirectly by third parties (note these parties can be independent affiliates of S&P Global or unaffiliated entities) so an S&P DJI ESG index's ability to reflect ESG factors depends on these third parties' data accuracy and availability.

ESG scores, ratings, and other data may be reported (meaning that the data is provided as disclosed by companies, or an asset, or as made publicly available), modelled (meaning that the data is derived using a proprietary modelling process with only proxies used in the creation of the data), or reported and modelled (meaning that the data is either a mix of reported and modelled data or is derived from the vendor using reported data /information in a proprietary scoring or determination process).

ESG scores, ratings, and other data, whether from an external and/or internal source, is based on a qualitative and judgmental assessment, especially in the absence of well-defined market standards, and due to the existence of multiple approaches and methodologies to assess ESG factors and considerations. An element of subjectivity and discretion is therefore inherent in any ESG score, rating, or other data and different ESG scoring, rating, and/or data sources may use different ESG assessment or estimation methodologies. Different persons (including ESG data ratings, or scoring providers, index administrators or users) may arrive at different conclusions regarding the sustainability or impact of a particular company, asset, or index.

Where an index uses ESG scores, ratings or other data supplied directly or indirectly by third parties, S&P DJI does not accept responsibility for the accuracy or completeness of such ESG scores, ratings, or data. No single clear, definitive test or framework (legal, regulatory, or otherwise) exists to determine 'ESG', 'sustainable', 'good governance', 'no adverse environmental, social and/or other impacts', or other equivalently labelled objectives. In the absence of well-defined market standards and due to the existence of multitude approaches, the exercise of judgment is necessary. Accordingly, different persons may classify the same investment, product and/or strategy differently regarding 'ESG', 'sustainable', 'good governance', 'no adverse environmental, social and/or other impacts', or other equivalently labelled

objectives. Furthermore, the legal and/or market position on what constitutes an 'ESG', 'sustainable', 'good governance', 'no adverse environmental, social and/or other impacts', or other equivalently labelled objectives may change over time, especially as further regulatory or industry rules and guidance are issued and the ESG sustainable finance framework becomes more sophisticated.

Prospective users of an S&P DJI ESG Index are encouraged to read the relevant index methodology and related disclosures carefully to determine whether the index is suitable for their potential use case or investment objective.