

# **S&P Risk Parity Indices** *Methodology*

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# Introduction

## Index Objective

The S&P Risk Parity Indices measure the performance of a multi-asset risk parity strategy. The index targets equal measures of risk among equity, fixed income, and commodities futures contracts.

Within each asset class, the indices also target equal risk apportionment to each individual futures contract. Each contract (also called a constituent) is inversely weighted by its long-term realized volatility. Each index is leveraged, as needed, in order to target a particular level of volatility.

## Highlights

The key characteristics of the indices are:

- 26 constituents (futures contracts), grouped into three asset classes: equity, fixed income, and commodities
- 26 constituents are represented by 26 sub-indices measuring the performance of a rolling futures position of each underlying futures contract month
- Constituents contribute volatility equally within their asset classes
- Asset classes contribute volatility equally in the index
- Index leverage is determined by a risk control model using long term realized volatilities and a constant target risk
- Asset classes and constituents are rebalanced monthly

## Index Family

The index family includes the following indices:

- S&P Risk Parity Index – 8% Target Volatility
- S&P Risk Parity Index – 10% Target Volatility
- S&P Risk Parity Index – 12% Target Volatility
- S&P Risk Parity Index – 15% Target Volatility
- S&P Risk Parity Index (USD-only constituents) – 8% Target Volatility

Note that the target volatilities are used to determine index leverage based on the long term realized volatilities of each futures contract and asset class. The actual index realized volatility may deviate from the predetermined target volatilities.

## 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' Commodities Indices Policies & Practices Methodology	<a href="#">Commodities Indices Policies &amp; Practices</a>
S&P Dow Jones Indices' Index Mathematics Methodology	<a href="#">Index Mathematics Methodology</a>
S&P Equity Futures and Currency Futures Indices Methodology	<a href="#">Equity Futures and Currency Futures Indices Methodology</a>
S&P Global Bond Futures Index Series Methodology	<a href="#">Global Bond Futures Index Series Methodology</a>
S&P GSCI Methodology	<a href="#">Commodity Futures Methodology</a>

The indices were originally developed by S&P Dow Jones Indices with MSR Investments. The index methodology is maintained, and the indices are calculated and managed independently by S&P Dow Jones Indices according to S&P Dow Jones Indices' standard policies and procedures, including the policies and procedures governing S&P Dow Jones Indices' independent Index Committee. 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 indices continue to achieve their objectives.

# Index Eligibility and Construction

## Contract Eligibility

Contracts for physical commodities included in the indices are determined every two years, with a contract eligibility criteria date of September of the previous year through August of the current year, effective during the next designated January roll period. In addition, contracts must satisfy the following eligibility criteria.

## Eligibility Requirements

**Physical Commodities, Financial, and Foreign Exchange Futures.** Contracts must be on a physical commodity, financial instrument, currency, interest rate or equity index. Contracts need not require physical delivery by their terms in order for a commodity to be considered a physical commodity.

**Certain Contract Characteristics.** The following criteria must be satisfied:

- (i) the Contract must have a specified expiration or term, or provide in some other manner for delivery or settlement at a specified time, or within a specified time period, in the future;
- (ii) the Contract must, at any given point in time, be available for trading at least five months prior to its expiration or such other date or time period specified for delivery or settlement; and
- (iii) the Trading Facility on which the Contract is traded must allow market participants to execute spread transactions between the pairs of Contract Expirations included in the S&P Risk Parity Indices that, at any given point in time, are involved in the rolls effected during the next three Roll Periods.

**Denomination and Geographical Requirements.** Contracts must be traded on or through a Trading Facility that has its principal place of business or operations in a country that is a member of the Organization for Economic Cooperation and Development (OECD) during the relevant Annual Calculation Period or Interim Calculation Period. This assures that the S&P Risk Parity Indices are limited to those futures for which there are Trading Facilities in industrialized countries.

**Availability of Daily Contract Reference Prices.** Daily Contract Reference Prices generally must have been available on a continuous basis for at least two years prior to the proposed date of inclusion. In appropriate circumstances, S&P Dow Jones Indices may determine that a shorter time period is sufficient or that historical Daily Contract Reference Prices for a given Contract may be derived from Daily Contract Reference Prices of a similar or related Contract.

**Availability of Volume Data.** Volume data with respect to such Contract must be available from sources satisfying the criteria specified in *Sources of Information* for at least two years immediately prior to the date on which the determination to include the contracts is made. The indices' determination date is the same as the S&P GSCI for annual volume data, the 12-month period from September through August.

## Liquidity Requirement

Contracts are limited to those that are actively traded in order to assure that the prices generated by the markets for such Contracts represent reliable, competitive prices. Liquidity is an indication both of the significance of a particular market and the ability to trade with minimal market impact. Liquidity is determined by the annual Total Dollar Value Traded (TDVT).

## Contract Selection

Contracts for physical commodities are determined every two years, to be applied during the January roll period on even numbered years. The data range used to make the contract determination is September of the previous year through August of the current year. The following rules determine the selection of futures contracts for the three asset classes:

- **Commodities futures contracts.** Contracts are selected from the S&P GSCI universe of futures contracts. All contracts that have a TDVT greater than \$5 billion are selected. For more information on the S&P GSCI universe, please refer to the S&P GSCI Methodology document.
- **Fixed income futures contracts.** Seven liquid government bonds futures contracts are selected, as defined below.
- **Equity futures contracts.** Three liquid futures contracts are selected, as defined below.

Index constituents are not expected to change between rebalancing periods. If, for any reason beyond S&P Dow Jones Indices' control, a constituent is discontinued or substantially changed in terms of its contract specifications, the Index Committee may elect to discontinue representation of the affected futures contract within the index or designate a successor contract.

Note that the constituents of the S&P Risk Parity Index (USD-only constituents) – 8% Target Volatility are limited to only USD-denominated futures. The Euro Stoxx 50 Futures Index and Nikkei 225 Futures Index both use the first month futures and roll to the next month futures three business days prior to the expiry. Please refer to the respective sub-indices' methodology documents for their roll schedule used in the calculation.

## EXHIBIT 1: FUTURES CONTRACTS AND SUB-INDEX NAMES

Sector	Constituent	Exchange	Sector	Currency	Sub-index Name
<b>Current Commodities<sup>1</sup></b>					
<b>Commodity - Energy</b>	Natural Gas	NYMEX	E	USD	S&P GSCI Natural Gas Index
	Heating Oil #2	NYMEX	E	USD	S&P GSCI Heating Oil Index
	Gas Oil	ICE	E	USD	S&P GSCI Gasoil Index
	Crude Oil	NYMEX	E	USD	S&P GSCI Crude Oil Index
	Brent Crude	ICE	E	USD	S&P GSCI Brent Crude Oil Index
	Gasoline	NYMEX	E	USD	S&P GSCI Unleaded Gasoline Index
<b>Commodity - Softs &amp; Livestock</b>	Sugar #11	ICE	C	USD	S&P GSCI Sugar Index
	Live Cattle	CME	C	USD	S&P GSCI Live Cattle Index
	Coffee "C"	ICE	C	USD	S&P GSCI Coffee Index
	Cotton #2	ICE	C	USD	S&P GSCI Cotton Index
<b>Commodity - Grains</b>	Soybeans	CBOT	C	USD	S&P GSCI Soybeans Index
	Corn	CBOT	C	USD	S&P GSCI Corn Index
	Wheat	CBOT	C	USD	S&P GSCI Wheat Index
<b>Commodity - Metals</b>	Copper	COMEX	C	USD	S&P GSCI North American Copper Index
	Gold (100 oz.)	COMEX	C	USD	S&P GSCI Gold Index
	Silver	COMEX	C	USD	S&P GSCI Silver Index
<b>Fixed Income</b>					
<b>Fixed Income - U.S.</b>	T-Notes (10-year)	CBOT	FI	USD	S&P 10-Year U.S. Treasury Note Futures Index
	T-Notes (5-year)	CBOT	FI	USD	S&P 5-Year U.S. Treasury Note Futures Index
	T-Bonds (30-year)	CBOT	FI	USD	S&P U.S. Treasury Bond Futures Index
<b>Fixed Income - Europe</b>	Long Gilt	ICE	FI	GBP	S&P Long Gilt Futures Index
	Euro-Bund	EUREX	FI	EUR	S&P Euro-Bund Futures Index
	Euro-Bobl	EUREX	FI	EUR	S&P Euro-Bobl Futures Index
<b>Fixed Income - Asia</b>	JGB (10-year)	JPX	FI	JPY	S&P 10-Year JGB Futures Index
<b>Equity</b>					
<b>Equity – U.S.</b>	S&P 500 E-mini	CME	SI	USD	S&P 500 Futures ER Index
<b>Equity - Europe</b>	Euro Stoxx 50	EUREX	SI	EUR	Euro Stoxx 50 Futures Index
<b>Equity - Asia</b>	Nikkei 225 Futures	JPX	SI	JPY	Nikkei 225 Futures Index

<sup>1</sup> The next review period for the Commodities contracts is September 2020 through September 2021, effective in January 2022.

## Weighting Scheme

The index weighting scheme seeks to create an index where each of the asset classes contributes equally to the index volatility, with each of the constituents contributing equally to the volatility of its asset class.

To achieve the desired weighting scheme, all asset classes are weighted inversely by their realized volatilities, and all constituents within each asset class are weighted inversely by their realized volatilities. Then a multiplier is calculated so that the index meets the target index volatility. The target volatility level (TV) is currently set to 8%, 10%, 12% or 15%. The look-back period for the realized volatility calculation has a minimum of 1260 trading days (five years) and expands as more index values are created until the period reaches a maximum of 3780 trading days (15 years).

The target index volatility and look-back period are fixed parameters and are not reset at each rebalancing.

### EXHIBIT 2:

Parameters	Values
Target Volatility (TV)	8%, 10%, 12%, 15%
Minimum number of trading days in the look-back period (MinN)	1260
Maximum number of trading days in the look-back period (MaxN)	3780

### Step 1: Calculate the constituent weights in each asset class such that each constituent contributes equally to the asset class volatility

The index calculates the annualized realized volatility ( $RV$ ) in the look-back period for the  $i$ -th futures contract on day  $t$  as follows:

$$RV_{i,t} = \sqrt{\frac{\sum_{j=0}^{N_t-1} (R_{i,t-j} - \overline{R}_{i,t})^2}{N_t-1}} * 252 \quad (1)$$

where:

$R_{i,t}$  = Return of the  $i$ -th futures contract, in USD, on day  $t$ , calculated as:

$$R_{i,t} = lcR_{i,t} * (1 + fxR_{i,t}) \quad (2)$$

where:

$lcR_{i,t}$  = Return of the  $i$ -th futures contract, in local currency, on day  $t$

$fxR_{i,t}$  = Currency return of the  $i$ -th futures contract on day  $t$

$\overline{R}_{i,t}$  = Average return of the  $i$ -th futures contract, in USD, in the look-back period ending on day  $t$

$N_t$  = Number of trading days in the look-back period on day  $t$ , calculated as:

$$N_t = \min (MaxN, N_{t-1} + 1) \quad (3)$$

$$N_1 = MinN \quad (4)$$

Within each asset class, the constituents are weighted by the inverse of their realized volatility as follows:

$$w_{i,k,t} = \frac{\frac{1}{RV_{i,k,t}}}{\sum \frac{1}{RV_{i,k,t}}} \quad (5)$$

where:

$w_{i,k,t}$  = Weight of the  $i$ -th futures contract in the  $k$ -th asset class on day  $t$

$RV_{i,k,t}$  = Realized volatility of the  $i$ -th futures contract in the  $k$ -th asset class on day  $t$ , calculated as described in (1)



**Step 2: Calculate asset class weights such that each asset class contributes an equal amount of volatility**

Once each constituent's weight is determined within the asset class, the index calculates the realized volatility ( $acRV$ ) of the  $k$ -th asset class on day  $t$  as follows:

$$acRV_{k,t} = \sqrt{\frac{\sum_{j=0}^{N_t-1} (acR_{k,t-j} - \overline{acR_{k,t}})^2}{N_t-1}} * 252 \quad (6)$$

where:

$acR_{k,t-j}$  = Return of the  $k$ -th asset class on day  $t-j$ , calculated as:

$$acR_{k,t-j} = \sum_i R_{i,k,t-j} * w_{i,k,t} \quad (7)$$

where:

$R_{i,k,t-j}$  = Return of the  $i$ -th futures in the  $k$ -th asset class on day  $t-j$

$\overline{acR_{k,t}}$  = Average return of the  $k$ -th asset class in the look-back period ending on day  $t$

Each asset class is weighted by the inverse of its realized volatility as follows:

$$acW_{k,t} = \frac{\frac{1}{acRV_{k,t}}}{\sum \frac{1}{acRV_{k,t}}} \quad (8)$$

The raw weight for each constituent future is calculated as the product of the asset class weight and the constituent weight within the asset class.

$$rawW_{i,t} = w_{i,k,t} * acW_{k,t} \quad (9)$$

**Step 3: Calculate the multiplier to meet the target volatility**

The index combines all three asset classes and calculates the portfolio realized volatility ( $pRV$ ) on day  $t$  as follows:

$$pRV_t = \sqrt{\frac{\sum_{j=0}^{N_t-1} (pR_{t-j} - \overline{pR_t})^2}{N_t-1}} * 252 \quad (10)$$

where:

$pR_t$  = Return of the hypothetical portfolio on day  $t$ , calculated as:

$$pR_t = \sum_{j=0}^{N_t} acR_{k,t-j} * acW_{k,t} \quad (11)$$

$\overline{pR_t}$  = Average return of the hypothetical portfolio in the look-back period ending on day  $t$

The multiplier ( $pM$ ) is then calculated on day  $t$  as follows:

$$pM_t = \frac{TV}{pRV_t} \quad (12)$$

**Step 4: Calculate weight of each futures contract**

The index then calculates the weight of each futures contract as follows:

$$w_{i,t} = pM_t * rawW_{i,t} \quad (13)$$

### Sources of Information

The following are the sources of the information used to determine the eligibility of Contracts for inclusion in the S&P Risk Parity Indices, pursuant to the requirements set forth in *General Eligibility Requirements*. If any of the sources identified below is unavailable, with respect to the determination of the S&P Risk Parity Indices for a particular S&P Risk Parity Index Year, S&P Dow Jones Indices will identify appropriate alternative sources and the composition of the S&P Risk Parity Indices for such year will be based on such alternative sources. In addition, if S&P Dow Jones Indices, in its reasonable judgment, believes that one or more of the sources identified below contains a manifest error, it may use an alternative source to obtain the necessary information. Any such alternative sources used by S&P Dow Jones Indices will be publicly disclosed at the time that the composition of the indices for the next S&P Risk Parity Index Year is announced.

**General Eligibility Requirements.** The identification of those commodities that satisfy the general eligibility requirements is based on the FIA Reports that are published with respect to the relevant Annual Calculation Period or Interim Calculation Period, and directly from the particular Trading Facilities. The determination as to whether a particular Trading Facility has its principal place of business or operations in an OECD country is based on the most recent data published by the OECD available on the date of determination.

**Contract Volume and Liquidity Requirements.** In order to determine whether a particular Contract satisfies the volume and liquidity requirements described above, S&P Dow Jones Indices may use any available sources that it believes to be reasonably reliable including, but not limited to, data contained in the FIA Reports. In the event of manifest error, S&P Dow Jones Indices may supplement, and make corrections to, any such data.

# Index Maintenance

## Rebalancing

Constituent weights are calculated after the close of the last business day of each month and become effective prior to the open of the third trading day of the next month (the rebalancing day).

For the roll schedule of a specific underlying constituent, please refer to the methodology of the sub-index.

## Calculation Calendar

The S&P Risk Parity Indices follows New York Stock Exchange calendar. On any index calculation day that a constituent is not traded, its price on the previous business day of its local market will be used in the index calculation.

## Currency of Calculation and Additional Index Return Series

The S&P Risk Parity Indices are calculated in U.S. dollars. The prices of the underlying futures contracts are collected and the sub-indices are calculated in their local currencies. Using WM/Reuters' spot exchange rates, returns of the futures sub-indices are converted to returns in U.S. dollars, as described in formula (2). Forex rates, as supplied by WM/Reuters, are used for local currency return calculation. The index uses the spot exchange rates provided by WM/Reuters at 04:00 PM London Time.

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's All Indices by Methodology Report](#).

*For information on index calculation, 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.spdji.com](http://www.spdji.com).*

# Index Calculation

## Excess Return Calculation

On a given S&P Risk Parity Index business day  $t$ , the S&P Risk Parity Excess Return (ER) index level is equal to the product of the S&P Risk Parity ER index level on the immediately preceding S&P Risk Parity business day multiplied by one plus the Contract Daily Return as of that day.

$$ER_t = ER_{t-1} * (1 + CDR_t) \quad (14)$$

where

$ER_t$  = Excess Return Value for S&P Risk Parity Business Day  $t$ .

$ER_{t-1}$  = Excess Return Value as on the S&P Risk Parity business day prior to day  $t-1$ .

$CDR_t$  = Contract Daily Return of the Index on the S&P Risk Parity business day prior to day  $t$ .

## Contract Daily Return Calculation

The Contract Daily Return (CDR) on any S&P Risk Parity Business Day,  $t$ , is equal to the ratio obtained by dividing the Total Dollar Weight Obtained by the Total Dollar Weight Invested on the immediately preceding S&P Risk Parity Business Day, minus one.

$$CDR_t = \frac{TDWO_t}{TDWI_t} - 1 \quad (15)$$

where

$TDWO_t$  = Total Dollar Weight Obtained for S&P Risk Parity Business Day  $t$ .

$TDWI_t$  = Total Dollar Weight Invested for S&P Risk Parity Business Day  $t$ .

## Total Dollar Weight Obtained

On a given S&P Risk Parity business day,  $t$ , the Total Dollar Weight Obtained (TDWO) is the amount obtained from an investment on the immediately preceding day. The TDWO for a given day is calculated using the Component Weights and Contract Roll Weights in effect on the immediately preceding day,  $t-1$ , and the Daily Contract Reference Prices used to calculate the S&P Risk Parity Index on day  $t$ .

$$TDWO_t = \frac{NC_{new}}{NC_{old}} * (TDWO1_t + TDWO2_t) \quad (16)$$

where

$TDWO1_t$  = Total Dollar Weight Obtained of the current contract on day  $t$

$TDWO2_t$  = Total Dollar Weight Obtained of the next contract on day  $t$

$NC_{old}$  = Normalizing Constant effective as of the last month

$NC_{new}$  = Normalizing Constant effective during this month

For both the current contracts and the next contracts, the TDWO is the TDW on the immediately preceding day,  $t-1$ , plus the profit and loss in USD on day  $t$ .

$$TDWO1_t = \sum_i [TDW1_{i,t-1} + (CW1_{i,t} * CRW1_{i,t-1} * (DCRP1_{i,t} - DCRP1_{i,t-1}) * FX_{i,t})] \quad (17a)$$

$$TDWO2_t = \sum_i [TDW2_{i,t-1} + (CW2_{i,t} * CRW2_{i,t-1} * (DCRP2_{i,t} - DCRP2_{i,t-1}) * FX_{i,t})] \quad (17b)$$

where

$CW1_t$  = Contract Weight of the current contract on day  $t$

$CW2_t$  = Contract Weight of the next contract on day  $t$

$CRW1_{t-1}$  = The roll-out percentage of the Contract Roll Weight on the S&P Risk Parity business day prior to day  $t$ .

$CRW2_{t-1}$  = The roll-in percentage of the Contract Roll Weight on the S&P Risk Parity business day prior to day  $t$ .

$DCRP1_t$  = Current contract price on day  $t$

$DCRP2_t$  = Next contract price on day  $t$

### Total Dollar Weight Invested

On a given S&P Risk Parity business day,  $d$ , the Total Dollar Weight Invested (TDWI) is equal to the Total Dollar Weight of the immediately preceding S&P Risk Parity business day  $t-1$  and is calculated as follows:

$$TDWI_t = \frac{NC_{new}}{NC_{old}} * (TDWI1_t + TDWI2_t) \quad (18)$$

where

$TDWI1_d$  = Total Dollar Weight Invested of the current contract on day  $d$

$TDWI2_d$  = Total Dollar Weight Invested of the next contract on day  $d$

For both the current contracts and the next contracts, the TDWI is the TDW on the immediately preceding day,  $t-1$ .

$$TDWI1_t = \sum_i TDW1_{i,t-1} \quad (19a)$$

$$TDWI2_t = \sum_i TDW2_{i,t-1} \quad (19b)$$

### Normalizing Constant

In order to assure continuity of the S&P Risk Parity and to allow comparisons of the value of the S&P Risk Parity to be made over time, it is necessary to make an adjustment to the calculation of the S&P Risk Parity each time the CWs are changed. The factor used to make this adjustment is the Normalizing Constant (NC) and is used in the same manner as similar factors applied to the calculation of other published financial market indices. The NC is determined each time the composition of the S&P Risk Parity is changed pursuant to the procedures set forth in this methodology.

$$NC_{new} = NC_{old} * \frac{\sum(CW_2 * DCRP1_t + CW_2 * DCRP2_t)}{\sum(CW_1 * DCRP1_t + CW_1 * DCRP2_t)} \quad (20)$$

where

$CW1$  = Last month's Contract Weight

$CW2$  = This month's Contract Weight

$DCRP1_d$  = Current contract price on day  $d$

$DCRP2_d$  = Next contract price on day  $d$

$NC_{old}$  = Normalizing Constant effective as of the last month

## Total Return Calculation

On any given calendar day,  $t$ , the Treasury Bill Return ( $TBR$ ) is equal to an amount determined in accordance with the following formula:

$$TBR_t = \left[ \frac{1}{1 - \frac{91}{360} * TBAR_{t-1}} \right]^{1/91} - 1 \quad (21)$$

where:

$TBAR_{t-1}$  = The 3 month T-Bill Rate available on the S&P Risk Parity business day prior to day  $t$ .

On a given S&P Risk Parity business day,  $d$ , the value of the S&P Risk Parity Total Return (TR) Index is equal to the product of (i) the value of the S&P Risk Parity TR on the immediately preceding S&P Risk Parity Business Day, (ii) one plus the sum of the Contract Daily Return and the Treasury Bill Return on the day on which the calculation is made, and (iii) one plus the Treasury Bill Return for each non S&P Risk Parity Business Day since the immediately preceding S&P Risk Parity Business Day.

$$TR_t = TR_{t-1} * (1 + CDR_t + TBR_t) * (1 + TBR_t)^{days} \quad (22)$$

where:

$TR_{t-1}$  = S&P Risk Parity TR Index value on the S&P Risk Parity business day prior to day  $t$ .

$CDR_d$  = The Contract Daily Return on day  $t$ .

$TBR_d$  = Treasury Bill Return on day  $t$ .

$Days$  = Number of non S&P Risk Parity business days since the last immediate preceding S&P Risk Parity Business Day.

## Inception Date and Initial Value

The indices start on January 5, 2004 with the following initial values:

Index	Base Value
S&P Risk Parity Index – 8% Target Volatility (ER)	1198.73
S&P Risk Parity Index – 8% Target Volatility (TR)	1211.14
S&P Risk Parity Index – 10% Target Volatility (ER)	1251.54
S&P Risk Parity Index – 10% Target Volatility (TR)	1264.50
S&P Risk Parity Index – 12% Target Volatility (ER)	1305.56
S&P Risk Parity Index – 12% Target Volatility (TR)	1319.08
S&P Risk Parity Index – 15% Target Volatility (ER)	1388.80
S&P Risk Parity Index – 15% Target Volatility (TR)	1403.18
S&P Risk Parity Index (USD-Only Constituents) - 8% Target Volatility (USD) ER	1189.04
S&P Risk Parity Index (USD-Only Constituents) - 8% Target Volatility (USD) TR	1201.35

# Index Governance

## **Index Committee**

The S&P Risk Parity Indices are maintained by an S&P Dow Jones Indices' Index Committee. The Committee meets regularly. The Committee may revise index policy covering rules for the selection of futures contracts, including the eligibility criteria, or other matters. The Index Committee consists solely of full-time employees of S&P Dow Jones Indices.

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' Commodities Indices Policies & Practices Methodology.*

# Index Policy

## **Holiday Schedule**

The indices are calculated daily based on the same holiday schedule as the S&P GSCI which follows the official NYSE holiday schedule. The indices are calculated when the majority of the S&P Risk Parity Indices futures contracts are open for official trading and official settlement prices are provided, excluding holidays and weekends.

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

## **Contact Information**

For questions regarding an index, please contact: [index\\_services@spglobal.com](mailto:index_services@spglobal.com).



# Index Dissemination

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

## Tickers

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

Index	Bloomberg
S&P Risk Parity Index – 8% Target Volatility (ER)	SPRP8P
S&P Risk Parity Index – 8% Target Volatility (TR)	SPRP8T
S&P Risk Parity Index – 10% Target Volatility (ER)	SPRP10P
S&P Risk Parity Index – 10% Target Volatility (TR)	SPRP10T
S&P Risk Parity Index – 12% Target Volatility (ER)	SPRP12P
S&P Risk Parity Index – 12% Target Volatility (TR)	SPRP12T
S&P Risk Parity Index – 15% Target Volatility (ER)	SPRP15P
S&P Risk Parity Index – 15% Target Volatility (TR)	SPRP15T

## Index Data

Daily index level data is available via subscription.

For product information, please contact S&P Dow Jones Indices, [www.spdji.com/contact-us](http://www.spdji.com/contact-us).

## Web site

For further information, please refer to S&P Dow Jones Indices' Web site at [www.spdji.com](http://www.spdji.com).

# Appendix

## Methodology Changes

Methodology changes since April 1, 2020 are as follows:

Change	Effective Date (After Close)	Previous	Methodology	Updated
Base Date	05/14/2020	12/31/2002		01/05/2004
Base Index Levels	05/14/2020	1000		<p>Base index levels are as follows:</p> <ul style="list-style-type: none"> <li>• S&amp;P Risk Parity Index – 8% Target Volatility (ER): 1198.73</li> <li>• S&amp;P Risk Parity Index – 8% Target Volatility (TR): 1211.14</li> <li>• S&amp;P Risk Parity Index – 10% Target Volatility (ER): 1251.54</li> <li>• S&amp;P Risk Parity Index – 10% Target Volatility (TR): 1264.50</li> <li>• S&amp;P Risk Parity Index – 12% Target Volatility (ER): 1305.56</li> <li>• S&amp;P Risk Parity Index – 12% Target Volatility (TR): 1319.08</li> <li>• S&amp;P Risk Parity Index – 15% Target Volatility (ER): 1388.80</li> <li>• S&amp;P Risk Parity Index – 15% Target Volatility (TR): 1403.18</li> <li>• S&amp;P Risk Parity Index (USD-Only Constituents) - 8% Target Volatility (USD) ER: 1189.04</li> <li>• S&amp;P Risk Parity Index (USD-Only Constituents) - 8% Target Volatility (USD) TR: 1201.35</li> </ul>

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