

CSI Equity and Bond Risk Parity Index Methodology

1. Index Name and Code

Name: CSI Equity and Bond Risk Parity Index (Equity and Bond RP)

Code: H30322

2. Base Date and Base Index

The base date of CSI Equity and Bond Risk Parity Index is December 31, 2005. The base divisor of the index are the adjusted market-cap of all constituents as of close of the base date. The base index is 1000.

3. Index Constituent Weightings

3.1 Index Universe

The index universe is CSI 300 index, CSI 500 Index, CSI Medium Term Treasury Bond Index, CSI Medium Term Corporate Bond Index.

3.2 Constituent weights calculation

(1) Index objective

The index objective is to find a risk balanced allocation such that the risk contribution of each asset is equal. For any i or j ,

$$RC_i = RC_j$$

Where

$$RC_i \text{ is risk contribution of the } i^{\text{th}} \text{ asset, } RC_i = x_i \frac{\partial \sigma(x)}{\partial x_i} = x_i \frac{(\sum x)_i}{\sqrt{x' \sum x}}$$

$$\sigma(x) \text{ is the volatility of risk parity portfolio, } \sigma(x) = \sqrt{x' \sum x};$$

x_i is the weight of the i^{th} risk parity portfolio;

x is the vector composed of all the weights

\sum is the covariance matrix of the risk parity portfolio.

The covariance matrix is calculated by use of recent 12-month daily price return.

(2) Constraints

- Weight of each constituent is strictly positive, the max bound is 1.
- Cumulated weights of all the constituents must be equal to 1

4. Index Calculation

CSI Equity and Bond Risk Parity Index is calculated using the following formula :

$$\text{Index}_t = \text{Index}_{t_0} \times \sum_{i=1}^N (W_{i,t_0} \times \frac{\text{Index}_{i,t}}{\text{Index}_{i,t_0}})$$

5. Constituents Adjustment

CSI Equity and Bond Risk Parity Index will be rebalanced quarterly. The constituents and weight adjustment are implemented after market close on the second Friday of March, June ,September and December. Temporary adjustment can be made under certain circumstances if necessary.