

S&P Managed Risk 2.0 Index Series Consultation Results

NEW YORK, FEBRUARY 28, 2020: S&P Dow Jones Indices (“S&P DJI”) has conducted a consultation with members of the investment community on potential changes to the S&P Managed Risk 2.0 Index Series.

In an effort to limit index turnover and reduce the occurrence of minor asset weight adjustments, S&P DJI will expand the target volatility threshold, as well as introduce a minimum daily allocation change and mark-to-market weighting in determining the final asset weights. The changes are outlined in the following tables:

Target Volatility Threshold	
Previous	0.5%
Updated	1.0%

Minimum Daily Allocation Change	
Previous	--
Updated	5.0% for the S&P 400 Managed Risk 2.0 Index, S&P 600 Managed Risk 2.0 Index, and S&P EPAC Ex. Korea LargeMidCap Managed Risk 2.0 Index. 3.0% for the S&P 500 Managed Risk 2.0 Index and S&P EM 100 Managed Risk 2.0 Index.

Mark-to-Market Weights	
Previous	--
Updated	Mark-to-market weights are determined as: $mmw_{E,t} = \frac{W_{E,t-1} * \frac{E_t}{E_{t-1}}}{W_{E,t-1} * \frac{E_t}{E_{t-1}} + W_{B,t-1} * \frac{B_t}{B_{t-1}} * (1 - W_{E,t-1} - W_{B,t-1}) * \frac{C_t}{C_{t-1}}}$ $mmw_{B,t} = \frac{W_{B,t-1} * \frac{B_t}{B_{t-1}}}{W_{E,t-1} * \frac{E_t}{E_{t-1}} + W_{B,t-1} * \frac{B_t}{B_{t-1}} + (1 - W_{E,t-1} - W_{B,t-1}) * \frac{C_t}{C_{t-1}}}$

Theoretical Asset Weights	
Previous	--
Updated	Theoretical asset weights are determined as: $thw_{E,t} = \varphi_t * tw_{E,t} + (1 - \varphi_t) * mmw_{E,t}$ $thw_{B,t} = \varphi_t * \min(tw_{B,t}, \omega_t * (1 - tw_{E,t})) + (1 - \varphi_t) * mmw_{B,t}$

Reference Equity Weight	
Previous	--
Updated	<p>Reference equity weight is determined as:</p> <p><i>If TradeBoolean_{t-1} = True</i></p> <p><i>Then</i></p> <p style="padding-left: 40px;">$refw_{E,t} = thw_{E,t-1}$</p> <p><i>Else</i></p> <p style="padding-left: 40px;">$refw_{E,t} = W_{E,t}$</p>

Trade Decision	
Previous	--
Updated	<p>The trade decision is based on the difference between the theoretical and reference equity weights:</p> <p><i>If $refw_{E,t} - thw_{E,t} \geq \underline{\delta}$</i></p> <p><i>Then</i></p> <p style="padding-left: 40px;">$TradeBoolean_t = True$</p> <p><i>Else</i></p> <p style="padding-left: 40px;"><i>If $thw_{E,t} = 1$ and $W_{E,t} < 1$ and not ($thw_{E,t-1} = 1$ and $W_{E,t-1} < 1$)</i></p> <p style="padding-left: 80px;"><i>Then</i></p> <p style="padding-left: 120px;">$TradeBoolean_t = True$</p> <p style="padding-left: 80px;"><i>Else</i></p> <p style="padding-left: 120px;">$TradeBoolean_t = False$</p>

Final Asset Weights	
Previous	<p>$W_{E,t} = \varphi_t * tw_{E,t} + (1 - \varphi_t) * W_{E,t-1}$</p> <p>$W_{B,t} = \varphi_t * \min(tw_{B,t}, \omega_t * (1 - tw_{E,t})) + (1 - \varphi_t) * W_{B,t-1}$</p>
Updated	<p>In the event that a trade was triggered, the final asset weights are determined by the two-day lagged theoretical weights. Otherwise, they are determined by marking to market the prior day's weights:</p> <p><i>If TradeBoolean_{t-2} = True</i></p> <p><i>Then</i></p> <p style="padding-left: 40px;">$W_{E,t} = thw_{E,t-2}$</p> <p style="padding-left: 40px;">$W_{B,t} = thw_{B,t-2}$</p> <p><i>Else</i></p> <p style="padding-left: 40px;">$W_{E,t} = mmw_{E,t}$</p> <p style="padding-left: 40px;">$W_{B,t} = mmw_{B,t}$</p>

Target Volatility	
Previous	<p>The target volatility of the index is calculated as:</p> $\sigma_t^2 = \min((\sigma + \varepsilon)^2, \max((\sigma - \varepsilon)^2, \text{Variance}_{S,t}, \text{Variance}_{L,t}))$ <p>where:</p> <p>$\text{Variance}_{S,t}$ = Short-term variance of the portfolio calculated as:</p> $\text{Variance}_{S,t} = \frac{W_{E,t-1}^2 * \text{EquityVariance}_{S,t} + \left(W_{B,t-1} + H \frac{M}{D}\right)^2 * \text{FIVariance}_{S,t} + 2 * W_{E,t-1} * \left(W_{B,t-1} + H \frac{M}{D}\right) * \text{Covariance}_{S,t}}{(1 + H)^2}$ <p>$\text{Variance}_{L,t}$ = Long-term variance of the portfolio calculated as:</p> $\text{Variance}_{L,t} = \frac{W_{E,t-1}^2 * \text{EquityVariance}_{L,t} + \left(W_{B,t-1} + H \frac{M}{D}\right)^2 * \text{FIVariance}_{L,t} + 2 * W_{E,t-1} * \left(W_{B,t-1} + H \frac{M}{D}\right) * \text{Covariance}_{L,t}}{(1 + H)^2}$
Updated	<p>The target volatility of the index is calculated as:</p> $\sigma_t^2 = \min((\sigma + \varepsilon)^2, \max((\sigma - \varepsilon)^2, \text{Variance}_{S,t}, \text{Variance}_{L,t}))$ <p>where:</p> <p>$\text{Variance}_{S,t}$ = Short-term variance of the portfolio calculated as:</p> $\text{Variance}_{S,t} = \frac{mmw_E^2 * \text{EquityVariance}_{S,t} + \left(mmw_B + H \frac{M}{D}\right)^2 * \text{FIVariance}_{S,t} + 2 * mmw_E * \left(mmw_B + H \frac{M}{D}\right) * \text{Covariance}_{S,t}}{(1 + H)^2}$ <p>$\text{Variance}_{L,t}$ = Long-term variance of the portfolio calculated as:</p> $\text{Variance}_{L,t} = \frac{mmw_E^2 * \text{EquityVariance}_{L,t} + \left(mmw_B + H \frac{M}{D}\right)^2 * \text{FIVariance}_{L,t} + 2 * mmw_E * \left(mmw_B + H \frac{M}{D}\right) * \text{Covariance}_{L,t}}{(1 + H)^2}$

These changes will become effective prior to the market open on Monday, March 23, 2020.

Please note that the S&P Managed Risk 2.0 Index Series Methodology located on S&P DJI's website is being updated to reflect these changes.

For more information about S&P Dow Jones Indices, please visit www.spdji.com.

ABOUT S&P DOW JONES INDICES

S&P Dow Jones Indices is the largest global resource for essential index-based concepts, data and research, and home to iconic financial market indicators, such as the S&P 500[®] and the Dow Jones Industrial Average[®]. More assets are invested in products based on our indices than products based on indices from any other provider in the world. Since Charles Dow invented the first index in 1884, S&P DJI has been innovating and developing indices across the spectrum of asset classes helping to define the way investors measure and trade the markets.

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