

S&P GSCI Capped Component Index *Methodology Supplement*

February 2017

The S&P GSCI methodology supplement for the S&P GSCI Capped Component Index uses various terms and definitions from *the S&P GSCI Index Methodology*. Where not specifically noted otherwise in this document, the rules of the S&P GSCI Methodology will prevail.

The S&P GSCI Capped Component version of the S&P GSCI maintains continuity and proportion to the S&P GSCI component weights.

This methodology supplement 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 supplement. Any changes to or deviations from this methodology supplement are made in the sole judgment and discretion of S&P Dow Jones Indices so that the index continues to achieve its objective.

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- *Internal Reviews of Methodology*
- *Calculations and Pricing Disruptions*
- *Error Corrections*
- *Expert Judgment*
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- *Unexpected Exchange Closures*

Please refer to S&P Dow Jones Indices' Commodities Indices Policies & Practices document located on our Web site, www.spdji.com.

The capping procedure follows two rules, in succession:

Rule 1: Only one component can reach a maximum weight of 35%. Any excess weight is distributed proportionately among the remaining components.

Once Rule 1 is implemented,

Rule 2: No remaining component's weight can exceed 20%. Any excess weight is distributed proportionately among the remaining components.

Capping Frequency: Quarterly.

Determination Date: One S&P GSCI Business Day before the first quarterly roll date (January, April, July and October).

Capping Excess Distribution: Distributed proportionately among the remaining components.

Components: There are 18 components, with three containing more than one commodity based on their similarity. The S&P GSCI index and its corresponding world production group are used for initial weighting purposes. The multiple commodity components are as follows:

- **Petroleum:** WTI Crude Oil, Brent Crude Oil, Gasoil, Unleaded Gasoline and Heating Oil
- **Wheat:** Chicago Wheat and Kansas Wheat
- **Cattle:** Feeder Cattle and Live Cattle

The following table lists the components:

S&P GSCI Capped Components
Wheat (Chicago, Kansas) Corn Soybeans Coffee Sugar Cocoa Cotton
Lean Hogs Cattle (Live, Feeder)
Oil (WTI Crude Oil, Brent Crude Oil, Gas Oil, Heating Oil, Unleaded Gasoline)
Natural Gas
Aluminum Copper Lead Nickel Zinc
Gold Silver

Implementation

Any excess weight from a rule #1 violation is distributed proportionally among the remaining index components.

After rule #1 is implemented, if there are rule #2 violations then the violating components are adjusted and the balance is distributed proportionately among the remaining index components.

In order to properly implement, CPWs are adjusted to arrive at the assigned weights for each commodity. This adjustment process takes place at the beginning of each quarter and every time the main S&P GSCI index is rebalanced, adjusted, and/or new commodities are added to or deleted from the index, in order to remain proportional with the S&P GSCI components.

The adjustment process takes place at the beginning of each quarter.

1. On the S&P GSCI Business Day before each quarterly first roll date, the latest S&P GSCI commodity CPWs are multiplied by the commodity prices to determine the S&P GSCI commodity weights.
2. The commodities are separated into components and the components are sorted in descending order by their sector weights.
3. If there is any component above 35% (historically the case for petroleum), it is capped at 35% and the excess weight distributed among the remaining index components.
4. If any additional component is above 20%, it is capped at 20% and the excess weight is distributed among the remaining index components. This process is repeated iteratively until all the capping rules are met.
5. The percentage weights of all commodities are converted to CPW-equivalents, based on the prices from the business day one day prior to the first roll date, using the initial S&P GSCI weights implied by those prices and the latest S&P GSCI CPWs. For example, the January S&P GSCI CPWs are multiplied by the commodity prices from the 4th business day in January, the last business day before the roll.
6. The capping adjustment process takes place every quarter and utilizes any CPW component changes to the base index (additions, subtractions, substitutions, etc.) in order to maintain continuity and proportion with the base S&P GSCI.

Capping formulas

At each rebalancing, CPWs are calculated as follows:

$$CPW_{capped,i} = CPW_{GSCI,i} * TargetWeight_j / GSCIWeight_j$$

where:

$CPW_{capped,i}$ = CPW for commodity i in the S&P GSCI Capped Component as of the upcoming rebalancing.

$CPW_{GSCI,i}$ = CPW for commodity i in the S&P GSCI as of the upcoming rebalancing.

$GSCIWeight_j$ = Weight of component j , of which commodity i is a part, in the S&P GSCI as of the upcoming rebalancing.

$TargetWeight_j$ = Weight of component j , of which commodity i is a part, in the S&P GSCI Capped Component as of the upcoming rebalancing.

At each rebalancing target weights are calculated as follows:

If $GSCIWeight_j > 35\%$, then set $TargetWeight_j = 35\%$ for the component with the highest $GSCIWeight_j$

For all remaining components:

$$TargetWeight_j = 65\% * GSCIWeight_j / (100\% - GSCIWeight)$$

where:

$GSCIWeight$ = Total weight of the capped components in the S&P GSCI as of the upcoming rebalancing.

For any subsequent commodities:

If $GSCIWeight_j > 20\%$ then $TargetWeight_j = 20\%$

For all remaining uncapped components

$$TargetWeight_j = (100\% - Capped Weight) * GSCIWeight_j / (100\% - GSCIWeight)$$

This process is repeated iteratively until no more than one component has a weight of greater than 20% in the index.

Tickers

Index	Bloomberg	Reuters
S&P GSCI Capped Component Index Spot	SPGSUC	.SPGSUC
S&P GSCI Capped Component Index Excess Return	SPGSUCP	.SPGSUCP
S&P GSCI Capped Component Index Total Return	SPGSUCTR	.SPGSUCTR

Appendix: S&P GSCI Equal Weight Capped Component

The S&P GSCI Equal Weight Capped Component Index is a version of the S&P GSCI, where 100% of the index weight is equally distributed among the total number of constituents in the S&P GSCI – currently 24 commodities. Once the weights have been equally distributed, the capped component methodology is then applied to the index.

Capping Frequency: Quarterly.

For information on the capping methodology, please refer to the capping methodology rules described within this methodology supplement.

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