

**S&P Dow Jones
Indices**

A Division of **S&P Global**

**S&P GSCI Single Commodity
Capped Component Indices
*Methodology***

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Introduction

Index Objectives and Highlights

The S&P GSCI Single Commodity Capped Component Indices measure the performance of a single capped commodity component of the S&P GSCI while maintaining the diversification of the S&P GSCI component weights.

For information on the S&P GSCI, please refer to the S&P Dow Jones Indices' S&P GSCI Index Methodology available on our Web site at www.spdji.com.

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

The namesake commodity is the commodity bearing the name of the S&P GSCI Single Commodity Capped Component. For example, Gold is the namesake commodity for the S&P GSCI Gold Capped Component. In general, any S&P GSCI Single Commodity Capped Component consists of the namesake commodity as well as most of the rest of the S&P GSCI Commodities, subject to the Rule of Exclusion regarding commodities that belong to a given component.

The Rule of Exclusion states that when any commodity that belongs to a component is the namesake commodity of the index, all other commodities of that same component are excluded in that particular single commodity index. For instance, for the S&P GSCI Heating Oil Capped Component, the four remaining commodities (WTI Crude Oil, Brent Crude Oil, Unleaded Gasoline and Gasoil) of the Petroleum Component are not included in the index.

Index Family

S&P GSCI Single Commodity Capped Component. The weighting scheme of the S&P GSCI Single Commodity Capped Component is as follows: in every S&P GSCI Single Commodity Capped Component, each namesake commodity is allocated 32%, with the remaining 68% equally distributed among the eligible S&P GSCI Commodities, subject to the Rule of Exclusion.

The weights are rebalanced on a monthly basis. In essence, each single commodity index consists of a basket of individual S&P GSCI Single Commodities, not just one single individual commodity. However, if a market disruption event takes place on the day of the rebalance, the rebalance is held off one business day, or until there is no further market disruption event.

S&P GSCI Ex-Single Commodity Capped Component. The weighting scheme of the S&P GSCI® Ex-Single Commodity Capped Component is as follows: in every S&P GSCI® Ex-Single Commodity Capped Component, each namesake commodity is allocated 0%, with the remaining 100% equally distributed among the eligible S&P GSCI® Commodities.

The weights are rebalanced on a monthly basis. In essence, each ex-single commodity index consists of a basket of the S&P GSCI® Single Commodities, excluding one single individual commodity.

S&P GSCI Single Commodity ex Agriculture and Livestock Capped Component. Every S&P GSCI Single Commodity ex Agriculture and Livestock Capped Component index follows a weighting scheme whereby each namesake commodity is allocated 32%, with the remaining 68% equally distributed among the eligible S&P GSCI ex Agriculture and Livestock commodities, subject to the Rule of Exclusion.

Additionally, all components are capped at 17%. This means that for any given S&P GSCI Single Commodity ex Agriculture and Livestock Capped Component index, if the sum of the weights of all the commodities belonging in the same component exceeds 17%, then the individual weights of all the commodities in said component are curtailed to the extent that the sum of the weights of all the commodities in said component equal 17%, and the excess weight is redistributed on a pro-rata basis to all the remaining commodities, outside of the said component, except for the namesake commodity, which remains at 32%.

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	Commodities Indices Policies & Practices
S&P Dow Jones Indices' GSCI Reference Guide	GSCI Reference Guide
S&P Dow Jones Indices' Index Mathematics Methodology	Index Mathematics Methodology

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. 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.

Index Construction & Maintenance

S&P GSCI Single & Ex-Single Commodity Capped Component

Rebalancing Frequency: Monthly.

Determination date: One S&P GSCI business day before each monthly roll date.

Components: The index consists of 18 components, with three containing more than one commodity based on their similarity. 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)
Petroleum (WTI Crude Oil, Brent Crude Oil, Gas Oil, Heating Oil, Unleaded Gasoline)
Natural Gas
Aluminum Copper Lead Nickel Zinc
Gold Silver

Spot Index Calculation

$$Spot_t = Spot_{t_R} * \sum_{i=1}^N \left(Weight_{i,t_R} * \frac{SingleSpot_{i,t}}{SingleSpot_{i,t_R}} \right)$$

Where:

Spot_t = S&P GSCI Single Capped Component spot level

t_R = Rebalancing date (i.e. 5th business day of the month)

Weight_i = Monthly reset weight

SingleSpot_i = S&P GSCI Single Commodity spot level for the ith component

N = Total number of components in the index

Excess Return Index Calculation

$$ER_t = ER_{tR} * \sum_{i=1}^N \left(Weight_{i tR} * \frac{SingleER_{i t}}{SingleER_{i tR}} \right)$$

Where:

ER_t = S&P GSCI Single Capped Component ER level

$SingleER_i$ = S&P GSCI Single Commodity ER level for the i^{th} component

Total Return Index Calculation

$$TR_t = TR_{t-1} * \left(1 + \frac{ER_t}{ER_{t-1}} + TBR_t \right) * (1 + TBR_t)^{days}$$

Where:

TR_t = S&P GSCI Single Capped Component TR level

days = number of non S&P GSCI Business Days since the preceding S&P GSCI business day

$$TBR_t = \left[\frac{1}{1 - \frac{91}{360} * TBAR_{t-1}} \right]^{\frac{1}{91}} - 1$$

Where:

TBAR = 91-day discount rate for U.S. Treasury Bills, as reported by the U.S. Department of the Treasury's Treasury Direct service at

<https://www.treasurydirect.gov/instit/annceresult/annceresult.htm>.

S&P GSCI Single Commodity ex Agriculture and Livestock Capped Component

Rebalancing Frequency: Monthly.

Determination Date: One S&P GSCI business day before each monthly roll date.

Components: The index consists of nine components, with only one containing more than one commodity based on their similarity. The multiple commodity component is as follows:

Petroleum: WTI Crude Oil, Brent Crude Oil, Gasoil, Unleaded Gasoline and Heating Oil

The following table lists the components:

S&P GSCI Capped Components
Petroleum (WTI Crude Oil, Brent Crude Oil, Gas Oil, Heating Oil, RBOB Gasoline)
Natural Gas
Aluminum
Copper
Lead
Nickel
Zinc
Gold
Silver

Currency, Currency Hedged, and Risk Control Indices

Currency, currency hedged, and risk control versions of the indices may be available. For a list of available currency, currency hedged, and risk control indices, please contact Client Services at index_services@spglobal.com.

For more information on currency, currency hedged, and risk control indices, please refer to S&P Dow Jones Indices' Index Mathematics Methodology.

Index Dissemination

Index levels are available through S&P Dow Jones Indices' Web site at www.spdji.com, major quote vendors, numerous investment-oriented Web sites, and various print and electronic media.

Tickers

For a list of tickers within the S&P GSCI Single Commodity Capped Component family of indices, please refer to the S&P GSCI Ticker Table document located on our Web site, www.spdji.com.

Index Governance

Index Committee

S&P Dow Jones Indices has established an Index Committee to oversee the daily management and operations of the S&P GSCI, and is responsible for all analytical methods and calculation in the indices. The Committee is comprised of full-time professional members of S&P Dow Jones Indices staff. At each meeting, the Committee reviews any issues that may affect index constituents, statistics comparing the composition of the indices to the market, commodities 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 commodities, 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.

All references to methodology-related decisions made by S&P Dow Jones Indices in this document represent decisions made by the Index Committee.

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

Please refer to S&P Dow Jones Indices' Commodities Indices Policies & Practices document.

Commodity Index Advisory Panel

S&P Dow Jones Indices has established a Commodity Index Advisory Panel to assist it in connection with the operation of the S&P GSCI. The Panel meets on an annual basis and at other times at the request of the Index Committee. The principal purpose of the Panel is to advise the Index Committee with respect to, among other things, the calculation of the S&P GSCI, the effectiveness of the S&P GSCI as a measure of commodity futures market performance and the need for changes in the composition or methodology of the S&P GSCI. The Panel acts solely in an advisory and consultative capacity; the Index Committee makes all decisions with respect to the composition, calculation and operation of the S&P GSCI. Certain members of the Panel may be affiliated with clients of S&P Dow Jones Indices. Also, certain members of the Panel may be affiliated with entities which, from time to time, may have investments linked to the S&P GSCI, either through transactions in the Contracts included in the S&P GSCI, futures contracts on the S&P GSCI or derivative products linked to the S&P GSCI.

Index Policy

Announcements

Announcements of the daily index values are made after the futures market close each day.

Announcements of the new futures contract months to be rolled into are made following the close of business on the third business day of each month.

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 document.

Contact Information

For questions regarding an index, please contact: index_services@spglobal.com.

Table 3: S&P GSCI Ex-Agriculture & Livestock Single Commodity Capped Component Index Weights

Index	CL	GC	HO	LCO	LGO	MAL	MCU	MNI	MPB	MZN	NG	RB	SI
S&P GSCI Ex-Agriculture & Livestock Crude Oil Capped Component	32%	8.50%				8.50%	8.50%	8.50%	8.50%	8.50%	8.50%		8.50%
S&P GSCI Ex-Agriculture & Livestock Brent Crude Capped Component		8.50%		32%		8.50%	8.50%	8.50%	8.50%	8.50%	8.50%		8.50%
S&P GSCI Ex-Agriculture & Livestock Gasoil Capped Component		8.50%			32%	8.50%	8.50%	8.50%	8.50%	8.50%	8.50%		8.50%
S&P GSCI Ex-Agriculture & Livestock Heating Oil Capped Component		8.50%	32%			8.50%	8.50%	8.50%	8.50%	8.50%	8.50%		8.50%
S&P GSCI Ex-Agriculture & Livestock Unleaded Gasoline Capped Component		8.50%				8.50%	8.50%	8.50%	8.50%	8.50%	8.50%	32%	8.50%
S&P GSCI Ex-Agriculture & Livestock Natural Gas Capped Component	3.40%	7.29%	3.40%	3.40%	3.40%	7.29%	7.29%	7.29%	7.29%	7.29%	32%	3.40%	7.29%
S&P GSCI Ex-Agriculture & Livestock Aluminum Capped Component	3.40%	7.29%	3.40%	3.40%	3.40%	32%	7.29%	7.29%	7.29%	7.29%	7.29%	3.40%	7.29%
S&P GSCI Ex-Agriculture & Livestock Copper Capped Component	3.40%	7.29%	3.40%	3.40%	3.40%	7.29%	32%	7.29%	7.29%	7.29%	7.29%	3.40%	7.29%
S&P GSCI Ex-Agriculture & Livestock Nickel Capped Component	3.40%	7.29%	3.40%	3.40%	3.40%	7.29%	7.29%	32%	7.29%	7.29%	7.29%	3.40%	7.29%
S&P GSCI Ex-Agriculture & Livestock Lead Capped Component	3.40%	7.29%	3.40%	3.40%	3.40%	7.29%	7.29%	7.29%	32%	7.29%	7.29%	3.40%	7.29%
S&P GSCI Ex-Agriculture & Livestock Zinc Capped Component	3.40%	7.29%	3.40%	3.40%	3.40%	7.29%	7.29%	7.29%	7.29%	32%	7.29%	3.40%	7.29%
S&P GSCI Ex-Agriculture & Livestock Gold Capped Component	3.40%	32%	7.29%	7.29%	7.29%	7.29%	7.29%	7.29%	7.29%	7.29%	7.29%	7.29%	7.29%
S&P GSCI Ex-Agriculture & Livestock Silver Capped Component	3.40%	7.29%	7.29%	7.29%	7.29%	7.29%	7.29%	7.29%	7.29%	7.29%	7.29%	7.29%	32%

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