

S&P Dow Jones Indices

A Division of **S&P Global**

S&P GSCI Enhanced Indices *Methodology Supplement*

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Introduction

Index Objective and Highlights

S&P GSCI Enhanced Total Return Index. The index measures the total return from performance of the components of the S&P GSCI, taking into account certain dynamic, timing, and seasonal rolling rules as detailed in *Index Calculation*.

The index is calculated on a basis similar to the S&P GSCI, but modified to apply certain dynamic, timing and seasonal rolling rules as discussed below.

S&P GSCI Agriculture Enhanced Select Index. The index measures the total return from specific agricultural commodity components of the S&P GSCI.

The index is calculated on a basis similar to the S&P GSCI, but modified to apply certain seasonal rolling rules as discussed below. The S&P GSCI Agriculture Enhanced Select contains only four commodities -- corn, soybeans, sugar and wheat (Chicago).

S&P GSCI Crude Oil Enhanced Index. The index measures the total return from the same rolling WTI Crude Oil futures contracts as are included in the S&P GSCI Crude Oil Index.

The index is calculated on a basis similar to the S&P GSCI, but modified to apply certain dynamic, timing and seasonal rolling rules as discussed below.

This methodology supplement uses various terms 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. Where the terms in this document are also defined in the S&P GSCI Methodology, the definitions in this document prevail.

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' 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 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.

Index Calculation

Calculation of the S&P GSCI

In formulaic terms, the calculation of the S&P GSCI is as follows, with the results of such calculation rounded to seven digits of precision:

$$S\&P\ GSCIE\ _d = \frac{TDW\ _d}{NC}$$

Total Dollar Weight Calculation on Non-Roll Days

The formula for calculating the Total Dollar Weight of the index on any business day that does not occur during a Roll Period is the following:

$$TDW\ _d = \sum_c (CPW\ _d^c * DCRP\ _d^c)$$

where:

- c = the Designated Contract
- d = the S&P GSCI Business Day on which the calculation is made
- $DCRP$ = the Daily Contract Reference Price

For the calculation of the Total Dollar Weight during the designated roll period and during the January roll period or any reweighting period, please refer to the S&P GSCI Methodology.

Calculation of the S&P GSCI Enhanced ER

On any S&P GSCI Business Day, the value of the S&P GSCI Enhanced ER is equal to the product of (i) the value of the index on the preceding Business Day and (ii) one plus the Contract Daily Return on the Business Day on which the calculation is made. The result of the foregoing calculation is then rounded to seven digits of precision.

$$S\&P\ GSCIE\ ER\ _d = S\&P\ GSCIE\ ER\ _{d-1} * (1 + CDR\ _d)$$

Calculation of the Contract Daily Return

On any S&P GSCI Business Day, the Contract Daily Return is equal to the ratio of the Total Dollar Weight Obtained (TDWO) on such Day and the Total Dollar Weight Invested (TDWI) on the preceding S&P GSCI Business Day, minus one.

$$CDR\ _d = \frac{TDWO\ _d}{TDWI\ _{d-1}} - 1$$

Calculation of the S&P GSCI Enhanced TR

On any S&P GSCI Business Day, the value of the S&P GSCI Enhanced TR is equal to the product of (i) the value of the S&P GSCI TR on the preceding Business Day and (ii) one plus the sum of the Contract Daily Return and the Treasury Bill Return on the Business Day on which the calculation is made and (iii) one plus the Treasury Bill Return for each non S&P GSCI Business Day since the preceding Business Day. The result of the foregoing calculation is, then, rounded to seven digits of precision:

$$S\&P\ GSCIE\ TR_d = S\&P\ GSCIE\ TR_{d-1} * (1 + CDR_d + TBR_d) * (1 + TBR_d)^{days}$$

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

where:

- d-1* = 91-day Treasury Bill Rate available on the preceding S&P GSCI Business Day
days = the number of non S&P GSCI Business Days since the preceding S&P GSCI Business Day

The S&P GSCI Enhanced Total Return Index applies certain dynamic and seasonal rolling rules to specific commodity components of the S&P GSCI. Although the S&P GSCI Enhanced Total Return Index includes the same futures contracts as the S&P GSCI, the contract months will vary and the returns and values will differ from the S&P GSCI. The five day roll begins on the first business day of the month, and the closing futures prices on the third to last business day of the prior month are used to determine the dynamic roll check.

Most of the S&P GSCI futures contracts in the S&P GSCI Enhanced Index follow the normal schedule with the following exceptions:

- For WTI crude oil, during the roll in the contract determination months of January through June, if the contango between the first and second contract month is more than 0.50%, the contracts will roll to the current year's December contracts. During the roll in the contract determination months of July through December, if the contango between the first and second contract month is more than 0.50%, the contracts will roll to the next year's December contracts.
- For Brent crude oil, during the roll in the contract determination months of January through June, if the contango between the second and third contract month is more than 0.50%, the contracts will roll to the current year's December contracts. During the roll in the contract determination months of July through December, if the contango between the second and third contract month is more than 0.50%, the contracts will roll to the next year's December contracts.
- Heating oil is rolled only to the December contract annually (during the November roll period).
- Natural gas is rolled only to the January contract annually (during the December roll period).
- Chicago Wheat is rolled only to the December contract annually (during the November roll period).
- Corn is rolled only to the July contract annually (during the May roll period).
- Lean Hogs are rolled only to the April and August contracts semi-annually (April during the July roll, and August during the March roll).
- Live Cattle is rolled only to the April and October contracts semi-annually (April during the September roll and October during the March roll).

The table below identifies the contracts included in the S&P GSCI Enhanced Index that have specifically different Designated Contract Expirations than the S&P GSCI.

Enhanced Contract Roll Schedule														
Designated Contract Expirations at Month Begin ⁽¹⁾														
Trading Facility	Commodity (Contract)	Ticker	1	2	3	4	5	6	7	8	9	10	11	12
CBOT	Wheat (Chicago)	W	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z+1
CBOT	Corn	C	N	N	N	N	N	N+1						
CME	Lean Hogs	LH	J	J	J	Q	Q	Q	Q	J	J	J	J	J
CME	Cattle (Live)	LC	J	J	J	V	V	V	V	V	V	J	J	J
NYM	Oil (#2 Heating)	HO	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z+1
ICE	Natural Gas	NG	F+1											

(1) Future Months included in the Enhanced Strategy Index at the beginning of each calendar month.

Month Letter Codes			
Month	Letter Code	Month	Letter Code
January	F	July	N
February	G	August	Q
March	H	September	U
April	J	October	V
May	K	November	X
June	M	December	Z

Currency of Calculation and Additional Index Return Series

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 the calculation of different types of indices, please refer to S&P Dow Jones Indices' Index Mathematics Methodology.

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 Methodology.

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 Methodology.

Contact Information

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

Index Dissemination

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	Reuters
S&P GSCI Enhanced Commodity Index	SPGSES	.SPGSES
S&P GSCI Enhanced Commodity Index ER	SPGSESP	.SPGSESP
S&P GSCI Enhanced Commodity Index TR	SPGSESTR	.SPGSESTR
S&P GSCI Agriculture Enhanced Select Index	SGECAS	--
S&P GSCI Agriculture Enhanced Select Index ER	SGECASP	--
S&P GSCI Agriculture Enhanced Select Index TR	SGECASTR	--
S&P GSCI Crude Oil Enhanced Index	SGESCL	.SGESCL
S&P GSCI Crude Oil Enhanced Index ER	SGESCLP	.SGESCLP
S&P GSCI Crude Oil Enhanced Index TR	SGESCLTR	.SGESCLTR

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