

S&P GSCI Reference Guide

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S&P GSCI® Basics

Introduction

The S&P GSCI is one of the most widely tracked commodity indices in the world. It is typically recognized as the leading measure of commodity prices and generally provides strong inflation protection with low correlations to other asset classes.

This guide is intended to be a simple form of the official *S&P GSCI® Methodology* (the Methodology). While it contains many important aspects of the construction of the index, please refer to the Methodology for exact replication and instructions for non-standard events.

Please refer to the Glossary for a list of defined terms used throughout this document. For complete details of the S&P GSCI methodology as well as a list of GSCI index tickers, please refer to the S&P GSCI Methodology available on our Web site, www.spdji.com.

Quick Facts

- Constituents (currently 24)
 - Must meet eligibility criteria on an annual basis
 - Futures contracts on physical commodities
 - Total Dollar Value Traded (TDVT) minimums
 - US\$ 15 billion TDVT to be added
 - US\$ 5b TDVT to continue to be included, with US\$ 10b TDVT in one of three Annual Observation Periods
 - US\$ 30b TDVT for a contract to be added in a commodity already included (for example Chicago and Kansas City wheat)
 - US\$ 10b TDVT for a contract to continue to be included in a commodity already held, with US\$ 20b TDVT in one of three Annual Observation Periods
 - Reference Percentage Dollar Weight minimums
 - 1.00% or greater to be added
 - 0.10% to continue to be held
 - Denominated in USD and on a Trading Facility whose principle operations are in an Organization for Economic Cooperation and Development (OECD) member country
 - Pricing and trading volume availability

- Sectors (currently 5 groups)
 - Agriculture, Energy, Industrial Metals, Livestock, and Precious Metals
- Weight
 - World production-weighted
- Rebalancing
 - Annual rebalancing, Monthly review
- Roll
 - 20% each day of the 5th through 9th S&P GSCI Business Days of each month
 - Next nearby most liquid contract

What is included in the S&P GSCI?

There are currently 24 futures contracts on physical commodities included in the S&P GSCI that are classified into five sectors.

Sectors and Constituents	Ticker ⁽¹⁾	Designated Contract Expirations at Month Begin ⁽²⁾											
		1	2	3	4	5	6	7	8	9	10	11	12
Agriculture:													
Chicago Wheat	W	H	H	K	K	N	N	U	U	Z	Z	Z	H
Kansas Wheat	KW	H	H	K	K	N	N	U	U	Z	Z	Z	H
Corn	C	H	H	K	K	N	N	U	U	Z	Z	Z	H
Soybeans	S	H	H	K	K	N	N	X	X	X	X	F	F
Coffee	KC	H	H	K	K	N	N	U	U	Z	Z	Z	H
Sugar	SB	H	H	K	K	N	N	V	V	V	H	H	H
Cocoa	CC	H	H	K	K	N	N	U	U	Z	Z	Z	H
Cotton	CT	H	H	K	K	N	N	Z	Z	Z	Z	Z	H
Livestock:													
Lean Hogs	LH	G	J	J	M	M	N	Q	V	V	Z	Z	G
Live Cattle	LC	G	J	J	M	M	Q	Q	V	V	Z	Z	G
Feeder Cattle	FC	H	H	J	K	Q	Q	Q	U	V	X	F	F
Energy:													
WTI Crude Oil	CL	G	H	J	K	M	N	Q	U	V	X	Z	F
Heating Oil	HO	G	H	J	K	M	N	Q	U	V	X	Z	F
RBOB Gasoline	RB	G	H	J	K	M	N	Q	U	V	X	Z	F
Brent Crude Oil	LCO	H	J	K	M	N	Q	U	V	X	Z	F	G
Gasoil	LGO	G	H	J	K	M	N	Q	U	V	X	Z	F
Natural Gas	NG	G	H	J	K	M	N	Q	U	V	X	Z	F
Industrial Metals:													
Aluminum	MAL	G	H	J	K	M	N	Q	U	V	X	Z	F
Copper	MCU	G	H	J	K	M	N	Q	U	V	X	Z	F
Lead	MPB	G	H	J	K	M	N	Q	U	V	X	Z	F
Nickel	MNI	G	H	J	K	M	N	Q	U	V	X	Z	F
Zinc	MZN	G	H	J	K	M	N	Q	U	V	X	Z	F
Precious Metals:													
Gold	GC	G	J	J	M	M	Q	Q	Z	Z	Z	Z	G
Silver	SI	H	H	K	K	N	N	U	U	Z	Z	Z	H

(1) Tickers are Reuters RIC Codes.

(2) Future months included in the S&P GSCI at the beginning of each calendar month, starting with January. Please see Table 2 in the Appendix for month letter codes.

How do the Constituents get included in the S&P GSCI?

Each year the Constituents are reviewed and each month are monitored by the following criteria:

Characteristics and Data Availability

The futures Contracts must have a *specified expiration* or term, or provide in some other manner for delivery or settlement at a specified time, or within a specified time period, in the future. They must be *available for trading at least five months prior to its expiration* or such other date or time period specified for delivery or settlement. The Trading Facility on which the Contract is traded must allow market participants to *execute spread transactions, through a single order entry, between the pairs of Contract Expirations* included in the S&P GSCI that, at any given point in time, will be involved in the rolls to be effected in the next three Roll Periods.

Further, a Contract must be *denominated in U.S. dollars* and traded on or through a Trading Facility that has its principal place of business or operations in a country that is a *member of the Organization for Economic Cooperation and Development (OECD)* during the relevant Annual Calculation Period or Interim Calculation Period.

Another requirement for inclusion in the S&P GSCI is that the *Daily Contract Reference Prices (DCRP) for the Contract generally must have been available on a continuous basis for at least two years prior to the proposed date of inclusion*. In appropriate circumstances, S&P Dow Jones Indices may determine that a shorter time period is sufficient or that historical Daily Contract Reference Prices for such Contract may be derived from Daily Contract Reference Prices for a similar or related Contract.

At and after the time a particular Contract is included in the S&P GSCI, the *Daily Contract Reference Price for such Contract must be published between 10:00 AM and 4:00 PM, Eastern Time*, on each Contract Business Day by the Trading Facility on or through which it is traded and must generally be available to all members of, or participants in, such Facility (and S&P Dow Jones Indices) on the same Contract Business Day from the Trading Facility or through a recognized third-party data vendor. Such publication must include, at all times, Daily Contract Reference Prices for at least one Contract Expiration that is five months or more from the date the determination is made, as well as for all Contract Expirations during such five-month period.

For a Contract to be eligible for inclusion in the S&P GSCI, *volume data with respect to such Contract must be available for at least the three months* immediately preceding the date on which the determination is made according to sources satisfying the Methodology criteria.

How are the Constituents of the S&P GSCI weighted?

Each year, the S&P GSCI is production-weighted to reflect the relative significance of each of the constituent commodities to the world economy, while preserving the tradability of the index by limiting eligible Contracts to those with adequate liquidity.

With respect to each Designated Contract, a Contract Production Weight (CPW) is calculated based on world production and trading volume. The final CPWs are rounded to seven digits of precision.

The calculation of the CPWs of the Designated Contracts involves a four-step process: (1) determination of the World Production Quantity (WPQ) of each S&P GSCI Commodity, (2) determination of the World Production Average (WPA) of each S&P GSCI Commodity over the WPQ Period, (3) calculation of the CPW based on the Contract's percentage of the relevant Total Quantity Traded (TQT), and (4) certain adjustments to the CPWs.

World Production Quantity (WPQ)

The WPQ of each S&P GSCI Commodity is equal to the total world production of the S&P GSCI Commodity over the WPQ Period.

The use of the five-year WPQ Period (and the averaging of that five-year period to determine the WPAs) is intended to mitigate the effect of any aberrational years with respect to the production of a particular commodity. For example, if a given commodity is produced primarily in one part of the world that suffers damage from hurricanes or earthquakes in a particular year, resulting in curtailed production levels, the use of that year's production figures might not accurately reflect the significance of the commodity to the world economy. Commodity production in a particular year may also be higher or lower than would normally be the case as a result of general production cycles, supply and demand cycles, or worldwide economic conditions. Measuring production levels over a five-year period should generally smooth out any such aberrational years.

The definition of the WPQ Period imposes a delay of approximately one-and-one-half (1 ½) years between the end of the WPQ Period and the end of the relevant Annual Calculation Period. This delay is because world production statistics are often incomplete and subject to revision after their original publication. Imposing a delay on the WPQ Period generally enhances their accuracy and reliability.

The WPQ Period is defined as the most recent five-year period for which complete world production data is available for all S&P GSCI Commodities from sources determined by S&P Dow Jones Indices to be reasonably accurate and reliable. This procedure is intended to assure that the same WPQ Period is used for all S&P GSCI Commodities, which allows comparisons between production figures to be made without taking into account temporary aberrations in different time periods.

Special Cases

Livestock Production Quantities. The annual production quantity for cattle, which is stated in terms of carcass weight, is converted into an equivalent quantity of live cattle by multiplying the production quantity of cattle for a given year by the ratio of live weight of cattle to the dressed weight of cattle (ALW/ADW) for that year.

In addition, cattle and hog production quantities are based on world industrial production data, rather than total world production data.

The ALW/ADW ratio used in adjusting the annual livestock production quantity is derived from U.S. statistics, although this ratio is applicable to cattle production throughout the world.

In addition, the production data for live cattle and lean hogs used in calculating the S&P GSCI are based on industrial production rather than total world production. This is because a significant portion of total world livestock production is used for local consumption and never enters distribution and production channels. As a result, the inclusion of world production in determining the CPWs would overstate the importance of livestock to the world economy. It is possible that in the future S&P Dow Jones Indices will conclude that it is appropriate to use industrial production figures for other commodities, where available. Any such determination will be publicly announced prior to its effectiveness.

If an S&P GSCI Commodity is primarily a regional commodity, based on its production, use, pricing, transportation or other factors, S&P Dow Jones Indices may determine the WPQ of such S&P GSCI Commodity *based on regional, rather than world, production*. At present, natural gas is the only S&P GSCI Commodity where the WPQ is determined based on regional (North American) production.

World Production Average (WPA)

The WPA is simply the average annual production amount of the S&P GSCI Commodity based on the WPQ over a five-year period.

Contract Production Weight (CPW)

In calculating the CPW of each Designated Contract on a particular S&P GSCI Commodity, the WPA of such Commodity is allocated to those Designated Contracts that can best support liquidity.

With respect to each Designated Contract, the CPW is equal to the Percentage TQT for such Contract multiplied by the WPA of the underlying S&P GSCI Commodity (after any necessary conversion made for purposes of the calculation) and divided by 1,000,000.

However, if the calculation of the CPWs for the Designated Contracts on a particular S&P GSCI Commodity results in the Trading Value Multiple (TVM) of such Contracts being below the TVM Reweighting Level, then the CPWs for all such Contracts are reduced until the TVM of such Contracts is equal to the TVM Reweighting Level. In the trading history of the S&P GSCI, reducing the CPW to meet the minimum TVM Reweighting Level has been very rare. *Please refer to the S&P GSCI Methodology for the proper procedure.*

What is the Normalizing Constant?

The S&P GSCI rolls from the near contract to the next contract on the 5th-9th business day of every month. Since the commodity futures contracts expire, there is not a continuous stream of data without a linking factor called the Normalizing Constant, particularly in the roll period. The S&P GSCI needs to employ this to assure continuity of the S&P GSCI and to allow comparisons of the value of the S&P GSCI to be made over time. The

Normalizing Constant is updated when new CPWs are instituted. Typically this occurs once a year, during the January roll period.

The formula for calculating the Total Dollar Weight of the S&P GSCI on any S&P GSCI 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

Again, the calculation of the Total Dollar Weight of the S&P GSCI during a Roll Period needs to be adjusted to reflect the fact that different DCRPs are used for each Designated Contract (e.g., the respective DCRP of the First Nearby Contract Expiration and the Roll Contract Expiration).

The Total Dollar Weight Ratio is calculated according to the following:

$$TDWR = \frac{\sum_c (CPW_{new}^c * DCRP_d^c)}{\sum_c (CPW_{old}^c * DCRP_d^c)}$$

where:

c = the Designated Contract

d = the S&P GSCI Business Day on which the calculation is made

CPW_{new} = CPWs that take effect on the first day of the new S&P GSCI Period

CPW_{old} = the CPWs for the prior S&P GSCI Period

$DCRP$ = the Daily Contract Reference Price

With respect to a given S&P GSCI Period, the Normalizing Constant (NC_{new}) is calculated on the last S&P GSCI Business Day of the previous S&P GSCI Period and is equal to the product of the Normalizing Constant for the S&P GSCI Period ending on such day (NC_{old}) and the Total Dollar Weight Ratio on such day, based on the Daily Contract Reference Price of the First Nearby Contract Expiration for each Designated Contract on such Day. The Normalizing Constant is rounded to seven digits of precision.

The formula for calculating the Normalizing Constant is the following:

$$NC_{new} = NC_{old} * TDWR$$

Please see the Appendix for example

How is the S&P GSCI calculated?

The calculation of the S&P GSCI takes into account the fact that positions need to roll forward as contracts approach settlement or delivery. Consequently, the Index takes into account price levels of the First Nearby Contract Expiration on each S&P GSCI Constituent and also price levels of the Roll Contract Expirations during the Roll Periods. Once the Roll Period has been completed, the Roll Contract Expiration becomes the First Nearby Contract Expiration.

Moreover, the S&P GSCI ER (Excess Return) represents the return of an index of commodity futures contracts, the composition of which reflects the CPWs of all Designated Contracts and the CRWs of all Designated Contract Expirations. The S&P GSCI ER is, therefore, calculated based on the Contract Daily Return.

The S&P GSCI TR (Total Return) reflects the performance of a total return investment in commodities — Contract Daily Return plus the daily interest on the funds hypothetically committed to the investment.

Calculation of the S&P GSCI

On each S&P GSCI Business Day, the value of the S&P GSCI is equal to the Total Dollar Weight of the S&P GSCI divided by the Normalizing Constant. The value of the S&P GSCI is calculated on each S&P GSCI Business Day at such time as Daily Contract Reference Prices for the relevant Contract Expirations become available but, in any event, by no later than the S&P GSCI Settlement Time. The Daily Contract Reference Price for each First Nearby Contract Expiration or Roll Contract Expiration used in calculating the S&P GSCI is determined according to the procedure set forth in section VI.2(b) of the S&P GSCI Methodology. The S&P GSCI is indexed to a value of 100 on January 2, 1970.

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:

$$S\&P\ GSCI_d = \frac{TDW_d}{NC}$$

The S&P GSCI, above, is the S&P GSCI Spot Index. The S&P GSCI Spot Index reflects only the prices of the First Nearby Contract Expirations and, during a Roll Period, the Roll Contract Expirations on each S&P GSCI Business Day. The value of the S&P GSCI, therefore, is calculated solely based on the CPW of each Designated Contract, and of the Daily Contract Reference Prices of the First Nearby Contract Expiration and/or the Roll Contract Expiration of each Designated Contract. These components together constitute the Total Dollar Weight (TDW) of the S&P GSCI. The TDW of the S&P GSCI is, then, divided by the Normalizing Constant to assure index continuity.

Contract Roll Weights and Roll Contract Expirations

In calculating the Total Dollar Weight of the S&P GSCI during a Roll Period, the Contract Roll Weights of the First Nearby Contract Expiration and the Roll Contract Expiration of each S&P GSCI Commodity are equal to: (i) on the first day of the Roll

Period with respect to such Commodity, 0.8 and 0.2, respectively; (ii) on the second day of the Roll Period, 0.6 and 0.4, respectively; (iii) on the third day of the Roll Period, 0.4 and 0.6 respectively; (iv) on the fourth day of the Roll Period, 0.2 and 0.8, respectively; and (v) on the fifth day of the Roll Period, 0.0 and 1.0.

Calculation of the S&P GSCI ER

The formula for calculating the Total Dollar Weight of the S&P GSCI on any S&P GSCI Business Day that occurs during a Roll Period (other than a January Roll Period or any other Roll Period in which a re-weighting of the S&P GSCI is effected) is the following:

$$TDW_d = \sum_c CPW^c * (CRW1_d^c * DCRP1_d^c + CRW2_d^c * DCRP2_d^c)$$

where

- c = each Designated Contract
- d = the S&P GSCI Business Day on which the calculation is made
- $CRW1$ = the Contract Roll Weight of the First Nearby Contract Expiration
- $CRW2$ = the Contract Roll Weight of the Roll Contract Expiration
- $DCRP$ = the Daily Contract Reference Price of each respective Contract Expiration

The CPWs and NC for a given S&P GSCI Period are implemented during the Roll Period of the calendar month in which such S&P GSCI Period begins. In calculating the value of the S&P GSCI on each day of such Roll Period, the Contract Roll Weight of the First Nearby Contract Expiration of each Designated Contract is multiplied by the applicable Daily Contract Reference Price of such Contract Expiration and the CPW of the relevant Designated Contract for the prior S&P GSCI Period, and divided by the NC for the prior S&P GSCI Period. Also the Contract Roll Weight of the Roll Contract Expiration of each Designated Contract is multiplied by the applicable Daily Contract Reference Price of such Contract Expiration and the CPW of the relevant Designated Contract for the new S&P GSCI Period and divided by the NC for such new S&P GSCI Period.

The formula for calculating the Total Dollar Weight of the S&P GSCI on any S&P GSCI Business Day that occurs during the January Roll Period, or during any other Roll Period in which a re-weighting of the S&P GSCI is effected, is the following:

$$TDW_d = \frac{NC_{new}}{NC_{old}} \times \sum_c [CPW1^c \times CRW1_d^c \times DCRP1_d^c] + \sum_c [CPW2^c \times CRW2_d^c \times DCRP2_d^c]$$

where

- c = each Designated Contract
- d = the S&P GSCI Business Day on which the calculation is made
- $CRW1$ = the Contract Roll Weight of the First Nearby Contract Expiration
- $CRW2$ = the Contract Roll Weight of the Roll Contract Expiration
- $CPW1$ = the CPW of the First Nearby Contract Expiration
- $CPW2$ = the CPW of the Roll Contract Expiration

DCRP = the Daily Contract Reference Price of each respective Contract Expiration

During the January Roll Period, and during any other Roll Period in which a re-weighting of the S&P GSCI is implemented, the S&P GSCI rolls into the new CPWs and NC during the regularly scheduled monthly Roll Period. For example, on the first day of the January Roll Period, which is the fifth (5th) S&P GSCI Business Day of the month, 80% of the S&P GSCI is calculated based on the CPWs and NC for the prior S&P GSCI Period and 20% of the S&P GSCI is calculated based on the CPWs and NC for the S&P GSCI Period beginning on such Day. On the sixth (6th) through ninth (9th) S&P GSCI Business Days, the percentages are 60/40, 40/60, 20/80 and 0/100, respectively. On the ninth (9th) S&P GSCI Business Day, the roll is completed.

The principal component of the calculation of the S&P GSCI ER is the determination of the Contract Daily Return (CDR) for a given S&P GSCI Business Day. The CDR is calculated by reference to the Total Dollar Weight of the S&P GSCI. The CDR is generally defined as the percentage change in the Total Dollar Weight of the S&P GSCI from one S&P GSCI Business Day to the next. Therefore, it reflects the returns that would be realized by holding positions in the Designated Contract Expirations, appropriately weighted to reflect the CPWs, from the closing of the Trading Facilities on the prior day to the closing of such Trading Facilities on the day on which the calculation is performed. This feature of replicating the performance of actual market positions makes the S&P GSCI a tradable index.

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.

In formulaic terms, the Contract Daily Return is calculated as follows:

$$CDR_d = \frac{TDWO_d}{TDWI_{d-1}} - 1$$

The Total Dollar Weight Invested reflects a hypothetical investment in the S&P GSCI based on the CPWs, CRWs and Daily Contract Reference Prices on the preceding S&P GSCI Business Day. The Total Dollar Weight Obtained reflects the return on the hypothetical investment and is calculated based on the CPWs and CRWs in effect on the preceding day but on the Daily Contract Reference Prices used to calculate the S&P GSCI on the current day. The Contract Daily Return is calculated by dividing the Total Dollar Weight Obtained on the day on which the calculation is made by the Total Dollar Weight Invested of the preceding day.

Daily Calculation of the S&P GSCI ER

On any S&P GSCI Business Day, the value of the S&P GSCI ER is equal to the product of the value of the S&P GSCI ER on the preceding S&P GSCI Business Day and one plus the Contract Daily Return on the S&P GSCI Business Day on which the calculation is made. The value of the S&P GSCI ER is indexed to a base value of 100 on January 2, 1970. The result of the foregoing calculation is then rounded to seven digits of precision.

In formulaic terms, the S&P GSCI ER is:

$$S\&P\ GSCI\ ER_d = S\&P\ GSCI\ ER_{d-1} * (1 + CDR_d)$$

The S&P GSCI ER is calculated on a cumulative basis beginning on January 2, 1970. The value of the S&P GSCI ER on any S&P GSCI Business Day, therefore, can be determined by reference to the value on the preceding S&P GSCI Business Day and the Contract Daily Return on the day of calculation.

Calculation of the S&P GSCI TR

Again, the S&P GSCI TR includes the return on collateral as measured by Treasury Bills shown below:

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

The subscript *d-1* on TBAR indicates that the Treasury Bill Rate used in the calculation is the Rate available on the preceding S&P GSCI Business Day.

Daily Calculation of the S&P GSCI TR

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

In formulaic terms:

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

where *days* is the number of non S&P GSCI Business Days since the preceding S&P GSCI Business Day. The S&P GSCI TR is set equal to 100 on January 2, 1970.

Glossary

Active Contract. A liquid, actively traded Contract with respect to a Designated Contract and Contract Expiration, as defined or identified by the relevant Trading Facility or, if no such definition or identification is provided by the Trading Facility, as defined by standard custom and practice in the industry.

Annual Calculation Period. The 12-month period ending on August 31st of the calendar year immediately preceding the S&P GSCI Year for which the composition of the S&P GSCI is being determined. If not all of the necessary data are reasonably available at the time of the annual determination of the composition and weighting of the S&P GSCI, the Annual Calculation Period is be the most recent 12-month period for which such data are available, as determined by S&P Dow Jones Indices.

Annual Observation Period. With respect to each Annual Calculation Period, the three 12-month periods, consisting of the Annual Calculation Period and the two 12-month periods immediately preceding.

Average Contract Reference Price (ACRP). For any Annual Observation Period and with respect to a particular Contract, the average of the Daily Contract Reference Prices for the First Nearby Contract Expiration on the last day of each month during that Annual Observation Period on which such price is available.

Contract. Any contract that is traded on or through a Trading Facility and that provides for physical delivery of, or is based on the price of, a deliverable commodity. For this purpose, the term “Contract” does not include any contract based on the spread, differential or other relationship between different delivery months, locations, or other terms or features of the underlying commodity or contracts on such commodity.

Contract Business Day. A day on which (i) the Trading Facility on or through which a Designated Contract Expiration is traded is scheduled to be open for trading for at least three hours, (ii) such Contract Expiration is available for trading during the hours referred to in clause (i) (as defined by the rules or policies of the Trading Facility, or if not so defined, as defined by S&P Dow Jones Indices) and (iii) a Daily Contract Reference Price for such Contract Expiration is published by the Trading Facility. An early closing of the Trading Facility or an early closing of trading in such Contract Expiration will not affect the characterization of a day as a Contract Business Day, provided that the circumstances set forth in (i) through (iii) exist.

Contract Daily Return (CDR). On any given S&P GSCI Business Day, the amount determined by dividing the Total Dollar Weight Obtained on such Day by the Total

Dollar Weight Invested on the preceding S&P GSCI Business Day. This value is represented as the percentage change in the Total Dollar Weight of the S&P GSCI.

Contract Expiration. A date or term specified by the Trading Facility on or through which a Contract is traded, during or after which such Contract will expire, or delivery or settlement will occur. The contract expiration may, but is not required to, be a particular contract month.

Contract Production Weight (CPW). With respect to each Designated Contract, an amount calculated according to the rules in section III, based on world production and trading volume; provided that when calculating the composition of the S&P GSCI, the CPW of any Contract that is part of a prospective index composition shall be determined based on such prospective index composition. The final CPWs are rounded to seven digits of precision.

Contract Roll Weight (CRW). With respect to the calculation of the S&P GSCI on any given S&P GSCI Business Day other than during a Roll Period, and for each Designated Contract Expiration, a factor of 1.0 if such Designated Contract Expiration is the First Nearby Contract Expiration and zero for all other Designated Contract Expirations. During a Roll Period, the Contract Roll Weight for the First Nearby Contract Expiration or the Roll Contract Expiration will be either 1.0, 0.8, 0.6, 0.4, 0.2, or zero, determined according to the procedure set forth in section VI.2(c) of this methodology, depending on the portion of the First Nearby Contract Expiration that has been rolled into the Roll Contract Expiration, and will be zero for all other Designated Contract Expirations.

Daily Contract Reference Price (DCRP). With respect to each Contract Expiration and Contract Business Day, the price of the relevant Contract, expressed in U.S. dollars, that is generally used by participants in the related cash or over-the-counter market as a benchmark for transactions related to such Contract. The Daily Contract Reference Price may, but is not required to, be the price (i) used by such Trading Facility or related clearing facility to determine the margin obligations (if any) of its members or participants or (ii) referred to generally as the reference, closing or settlement price of the relevant Contract. If a Trading Facility publishes a daily settlement price for a particular Contract Expiration, such settlement price will generally serve as the Daily Contract Reference Price for such Contract Expiration unless S&P Dow Jones Indices determines such settlement price does not satisfy the criteria set forth in this definition. The Daily Contract Reference Price of a Contract may be determined and published either by the relevant Trading Facility or by one or more third parties.

Designated Contract. A particular Contract included in the S&P GSCI for a given S&P GSCI Period, based on the eligibility criteria set forth in section II of this methodology. All references to the term “Designated Contract” in this methodology shall be deemed to include all Designated Contract Expirations with respect to the Contract in question.

Designated Contract Expiration. A Contract Expiration with respect to a Designated Contract that has been designated by S&P Dow Jones Indices for inclusion in the S&P GSCI.

Dollar Weight. On any given S&P GSCI Business Day and with respect to any Designated Contract and its First Nearby Contract Expiration and Roll Contract Expiration, the product of (i) the CPW of such Contract, (ii) the Daily Contract Reference Price for the appropriate Contract Expiration or Expirations on such day, and (iii) the Contract Roll Weight of the appropriate Contract Expiration.

FIA Reports. The *Monthly Volume Report* and the *International Report* published by the Futures Industry Association.

First Nearby Contract Expiration. In connection with the calculation of the S&P GSCI on any given S&P GSCI Business Day, the first available Designated Contract Expiration (after the date or term on or during which the calculation is made), provided that the Roll Period with respect to such Designated Contract Expiration has not yet been completed. After the completion of the Roll Period, the Designated Contract Expiration that was the Roll Contract Expiration becomes the First Nearby Contract Expiration. Notwithstanding the foregoing, with respect to any Designated Contract whose last trading day occurs on or before the eleventh (11th) S&P GSCI Business Day of the month, the First Nearby Contract Expiration is the second available Designated Contract Expiration (after the date or term on or during which the calculation is made).

Interim Calculation Period. With respect to any Monthly Observation Date, the three-month period ending on the last day of the month immediately preceding the date on which such Monthly Observation Date is scheduled to occur.

Investment Support Level (ISL). The targeted amount of investment in the S&P GSCI and related indices, expressed in U.S. dollars, that S&P Dow Jones Indices, in consultation with the Index Advisory Panel, reasonably believes may need to be supported by liquidity in the relevant Designated Contracts, based on the estimated aggregate outstanding level of investment in S&P GSCI-related investments. The Investment Support Level generally will not reflect the actual levels of such investment and will generally include amounts estimated to have been invested in similar indices, as well as any amount that is reasonably expected to be invested in the S&P GSCI or related or similar indices within the next 12-month period. For this purpose, “similar indices” means indices of physical commodities (or futures contracts or other derivatives on such commodities) that S&P Dow Jones Indices, in consultation with the Index Advisory Panel, determines can reasonably be used by market participants to achieve trading and investment objectives that are substantially similar to those for which the S&P GSCI is used. The ISL is currently set at US\$ 180 billion.

Limit Price. On any Contract Business Day, a Daily Contract Reference Price for the First Nearby Contract Expiration or the Roll Contract Expiration that represents the minimum or maximum price for such Contract Expiration on such Day, as determined by the rules or policies of the relevant Trading Facility (if any).

Monthly Observation Date. As determined by S&P Dow Jones Indices, the earliest day in each calendar month (except for the month in which the composition of the S&P GSCI for the next S&P GSCI Year is determined) on which the data necessary to perform the calculations and make the determinations required pursuant to Section III.6 of this methodology are available. If such day is not an S&P GSCI Business Day, it is the next

S&P GSCI Business Day. If S&P Dow Jones Indices determines such data are not available on or before the last day of such month, the Monthly Observation Date may change.

Normalizing Constant (NC). The divisor determined in the manner set forth in section V of this methodology that is used in calculating the value of the S&P GSCI on any given S&P GSCI Business Day in order to assure the continuity of the Index over time and to enable comparisons to be made between the values of the Index at various times.

Overall Trading Window (OTW). With respect to any Contract, the period of time during which such Contract is available for trading.

Percentage Dollar Weight. With respect to any Designated Contract, the Dollar Weight of such Contract divided by the Total Dollar Weight (TDW) of the relevant index.

Percentage TQT. With respect to each Designated Contract, an amount equal to the Total Quantity Traded (TQT) of such Contract divided by the aggregate of the TQT's of all the Designated Contracts on the same S&P GSCI Commodity. If there is only one Designated Contract on an S&P GSCI Commodity, its Percentage TQT is one (1).

Reference Dollar Weight. With respect to any Contract, the product of (i) the CPW of such Contract, multiplied by (ii) the applicable Average Contract Reference Price.

Reference Percentage Dollar Weight. With respect to any Contract, the quotient of (i) the Reference Dollar Weight of such Contract, and (ii) the sum of the Reference Dollar Weights of all Designated Contracts, provided that, when calculating the composition of the S&P GSCI, the Reference Percentage Dollar Weight of any Contract that is part of a prospective index composition is determined based on such composition.

Related Contract. With respect to any Contract (the First Contract), another Contract traded on the same or a different Trading Facility (the Second Contract) that provides for final settlement, at expiration or maturity of the Second Contract, based upon the final settlement price of the First Contract. A Second Contract will be considered a Related Contract only if (i) the TDVT of the Second Contract is greater than or equal to US\$ 30 billion; and (ii) the TQT of the Second Contract over the relevant Calculation Period is greater than or equal to 25% of the TQT of the First Contract over such Period.

Roll Contract Expiration. On any given S&P GSCI Business Day, with respect to each Designated Contract and the calculation of the S&P GSCI, it is the Contract Expiration that becomes the First Nearby Contract Expiration on the first S&P GSCI Business Day of the month following the month during which the calculation is made.

Roll Period. With respect to any Designated Contract, the period of five (5) S&P GSCI Business Days beginning on the fifth (5th) and ending on the ninth (9th) S&P GSCI Business Day of each calendar month. With respect to any Designated Contract, the Roll Period will be adjusted according to the procedure set forth in VI.2(d) if any of the circumstances identified in such section exists on any such S&P GSCI Business Day.

S&P GSCI. S&P Dow Jones Indices Commodity Index, known under the proprietary name *S&P GSCI*.

S&P GSCI Business Day. A day on which the indices are calculated, as determined by the NYSE Euronext Holiday & Hours schedule. Any deviation from this schedule will be announced to clients in advance.

S&P GSCI CME Futures Contracts. The futures contracts on the S&P GSFPI, which are listed for trading on the CME.

S&P GSCI Commodity. A commodity or group of commodities which, based on such factors as physical characteristics, trading, production, use or pricing, is determined by S&P Dow Jones Indices to be sufficiently related to constitute a single commodity and on which there are one or more Contracts.

S&P GSCI ER. The S&P GSCI Excess Return Index, which is the accretion of the Contract Daily Return, indexed to a base value of 100 on January 2, 1970.

S&P GSCI Period. The period beginning on the fifth (5th) S&P GSCI Business Day of the calendar month in which new CPWs (determined according to the procedure set forth in section III.4) first become effective, and ending on the S&P GSCI Business Day immediately preceding the first day of the next S&P GSCI Period.

S&P GSCI Settlement Time. On each S&P GSCI Business Day, the time at which that day's S&P GSCI calculation is made. The S&P GSCI Settlement Time is currently between 04:00 PM and 06:00 PM, Eastern Time.

S&P GSCI Spot Index. The index that reflects the price levels of the Designated Contracts and the CPW of each such Contract, and is calculated in the manner set forth in section VI of this methodology.

S&P GSCI TR. The S&P GSCI Total Return Index, which incorporates the returns of the S&P GSCI ER and the Treasury Bill Return.

S&P GSCI Year. The period beginning on the fifth (5th) S&P GSCI Business Day of each calendar year and ending on the fourth (4th) S&P GSCI Business Day of the following calendar year.

S&P GSFPI. The S&P GSCI Futures Price Index, which serves as a benchmark for the fair value of the S&P GSCI CME Futures Contracts.

Total Dollar Value Traded (TDVT). With respect to a given Contract, for any Annual Observation Period or Interim Calculation Period, the annualized TQT of such Contract over such period multiplied by the Average Contract Reference Price of such Contract for such period.

Total Dollar Weight of the S&P GSCI (TDW). On any given S&P GSCI Business Day, the sum of the Dollar Weights of all Designated Contracts.

Total Dollar Weight Invested (TDWI). On any given S&P GSCI Business Day, the Total Dollar Weight of the S&P GSCI on the preceding S&P GSCI Business Day.

Total Dollar Weight Obtained (TDWO). On any given S&P GSCI Business Day, the amount obtained from an investment in the S&P GSCI on the preceding S&P GSCI Business Day. For a given S&P GSCI Business Day, the TDWO is calculated as the Total Dollar Weight of the S&P GSCI for such Day, using the CPWs and Contract Roll Weights in effect on the preceding S&P GSCI Business Day and the Daily Contract Reference Prices used to calculate the S&P GSCI on the S&P GSCI Business Day on which the calculation is made.

Total Dollar Weight Ratio (TDWR). The ratio of (i) the Total Dollar Weight of the S&P GSCI on the fourth (4th) S&P GSCI Business Day of the relevant month, using the CPWs that will be in effect for the S&P GSCI Period beginning on the next S&P GSCI Business Day, and (ii) the Total Dollar Weight of the S&P GSCI on such day, using the CPWs in effect for the S&P GSCI Period ending on such day.

Total Quantity Traded (TQT). With respect to any Contract, the total annualized quantity traded in such Contract during the relevant Annual Calculation Period or Interim Calculation Period, expressed in physical units.

Trading Facility. The exchange, facility or platform on or through which a particular contract is traded. A Trading Facility may, but is not required to, be a contract market, exempt electronic trading facility, derivatives transaction execution facility, exempt board of trade or foreign board of trade, as such terms are defined in the U.S. Commodity Exchange Act and the rules and regulations promulgated thereunder.

Trading Volume Multiple (TVM). With respect to any Contract, the quotient of (i) the product of (a) the TQT of such Contract and (b) the sum of the products of (x) the CPW of each Contract that is included in the S&P GSCI or of a prospective index and (y) the corresponding Average Contract Reference Price, and (ii) the product of (a) the Investment Support Level for the relevant S&P GSCI Year and (b) the CPW of such Contract. In formulaic terms

$$TVM_c = \frac{TQT_c * \sum_k (CPW_k * ACRP_k)}{ISL * CPW_c}$$

Algebraically, this is equal to:

$$TVM_c = \frac{TDVT_c}{RPDW_c * ISL}$$

Treasury Bill Rate (TBAR_{d-1}). On any S&P GSCI Business Day, *d*, the 91-day discount rate for U.S. Treasury Bills, as reported by the U.S. Department of the Treasury's Treasury Direct service at <http://www.treasurydirect.gov/instit/instit.htm?upcoming> on the most recent of the weekly auction dates prior to such S&P GSCI Business Day, *d*.

Treasury Bill Return. A daily rate of return calculated according to the procedure set forth in VI.4(a) of this methodology and based on (i) the Treasury Bill Rate, (ii) a 360 day year and (iii) a period of 91 days.

TVM Reweighting Level (TVMRL). The minimum TVM that must be achieved as a result of a calculation of the CPW for each Designated Contract on the relevant S&P GSCI Commodity, according to the procedure set forth in sections III.4 and III.5 of this methodology. The TVM Reweighting Level is the same for all Designated Contracts and is currently set at 50.

TVM Threshold (TVMT). The TVM level, specified by S&P Dow Jones Indices, which triggers a recalculation of the CPWs for all Designated Contracts on a given S&P GSCI Commodity according to the procedure set forth in section III.4 of this methodology, if the TVM of any such Contract falls below such level. The TVM Threshold is currently set at 30.

TVM Upper Level (TVMUL). The TVM level, specified by S&P Dow Jones Indices, which triggers the exclusion of one or more Designated Contracts on a given S&P GSCI Commodity from the S&P GSCI according to the procedure set forth in section II.5(b) of this methodology, if the average of the TVM's of all the Designated Contracts on such Commodity exceeds such level. The TVM Upper Level is currently set at 200 for those Contracts that are not currently included in the S&P GSCI at the time of determination and at 400 for those Contracts that are currently included in the S&P GSCI at the time of determination. The time of determination may be either a Monthly Observation Date or the time of the annual determination of the composition of the S&P GSCI.

World Production Average (WPA). The average annual world production quantity of an S&P GSCI Commodity determined by dividing its World Production Quantity by five. (The number of years over which we measure world production quantities.)

World Production Quantity (WPQ). The total quantity of an S&P GSCI Commodity produced throughout the world during the WPQ Period, subject to adjustment as set forth in section III of this methodology.

WPQ Period. The period over which the WPQ of a S&P GSCI Commodity is determined, which is defined as the most recent five year period for which complete world production data for all S&P GSCI Commodities are available from sources determined by S&P Dow Jones Indices to be reasonably accurate and reliable at the time the composition of the S&P GSCI is determined. For the year 2016, the S&P GSCI WPQ Period is the five-year period from 2008 to 2012.

Appendix: Examples from the 2016 S&P GSCI Methodology

As required by the S&P GSCI Methodology, S&P Dow Jones Indices performed the annual calculation to determine the initial CPWs for the 2016 S&P GSCI based on trading volume from September 2014 to August 2015. The audited results of the calculations are presented in this Appendix. No new commodities entered at this time and no existing commodities were removed.

Contracts included in the 2016 S&P GSCI

Table 1 (on the next page) identifies the Contracts included in the 2016 S&P GSCI as well as the Contract Production Weights and Designated Contract Expirations for each such Contract in 2016. The Reference Percentage Dollar Weights were calculated based on the Average Contract Reference Prices for the 2016 Annual Calculation Period. Actual Percentage Dollar Weights on any given S&P GSCI Business Day vary depending on actual 2015 Daily Contract Prices.

Table 1: Contracts Included in the S&P GSCI for 2016

Trading Facility	Commodity	Ticker ⁽¹⁾	2015 CPW	2016 CPW	2016 ACRP (\$)	Unit	2015 PDW ⁽²⁾	2016 RPDW	2016 TDVT (USD bn)	2016 TVM	Designated Contract Expirations at Month Begin ⁽³⁾											
											1	2	3	4	5	6	7	8	9	10	11	12
CBT	Chicago Wheat	W	19929.26	20181.8	5.2142	bu	3.53%	3.53%	775	121.9	H	H	K	K	N	N	U	U	Z	Z	Z	H
KBT	Kansas Wheat	KW	4559.198	4731.456	5.5377	bu	0.86%	0.88%	193	121.9	H	H	K	K	N	N	U	U	Z	Z	Z	H
CBT	Corn	C	32907.26	33563.3	3.7573	bu	4.21%	4.23%	1515.1	198.9	H	H	K	K	N	N	U	U	Z	Z	Z	H
CBT	Soybeans	S	8828.723	8986.094	9.7858	bu	2.94%	2.95%	2684.8	505.6	H	H	K	K	N	N	X	X	X	X	F	F
ICE - US	Coffee	KC	18179.15	18477.47	1.5135	lbs	0.94%	0.94%	434.9	257.5	H	H	K	K	N	N	U	U	Z	Z	Z	H
ICE - US	Sugar	SB	347147	350467.6	0.1355	lbs	1.60%	1.59%	482.4	168.3	H	H	K	K	N	N	V	V	V	H	H	H
ICE - US	Cocoa	CC	4.277231	4.49828	2997.0833	MT	0.44%	0.45%	215.8	265	H	H	K	K	N	N	U	U	Z	Z	Z	H
ICE - US	Cotton	CT	55144.32	55730.3	0.6341	lbs	1.19%	1.19%	210.7	98.7	H	H	K	K	N	N	Z	Z	Z	Z	Z	H
CME	Lean Hogs	LH	84970.17	87671.93	0.7821	lbs	2.26%	2.30%	303	73.2	G	J	J	M	M	N	Q	V	V	Z	Z	G
CME	Live Cattle	LC	92895.69	92186.84	1.5473	lbs	4.89%	4.79%	793.7	92.1	G	J	J	M	M	Q	Q	V	V	Z	Z	G
CME	Feeder Cattle	FC	16537	21383.2	2.1603	lbs	1.22%	1.55%	257	92.1	H	H	J	K	Q	Q	Q	U	V	X	F	F
NYM / ICE	WTI Crude Oil	CL	10354.9	11568.56	59.3700	bbl	20.91%	23.04%	13525.6	326.1	G	H	J	K	M	N	Q	U	V	X	Z	F
NYM	Heating Oil	HO	82958.12	78754.85	1.9707	gal	5.56%	5.21%	3056.5	326.1	G	H	J	K	M	N	Q	U	V	X	Z	F
NYM	RBOB Gasoline	RB	86115.54	84209.46	1.8783	gal	5.50%	5.31%	3114.9	326.1	G	H	J	K	M	N	Q	U	V	X	Z	F
ICE - UK	Brent Crude Oil	LCO	9618.998	9256.426	65.7775	bbl	21.52%	20.43%	11990.3	326.1	H	J	K	M	N	Q	U	V	X	Z	F	G
ICE - UK	Gasoil	LGO	341.2737	294.9689	588.2500	MT	6.83%	5.82%	3417	326.1	G	H	J	K	M	N	Q	U	V	X	Z	F
NYM / ICE	Natural Gas	NG	31092.93	31615.91	3.0555	MMBtu	3.23%	3.24%	3502	600.3	G	H	J	K	M	N	Q	U	V	X	Z	F
LME	Aluminum	MAL	45.816	47.09	1820.8542	MT	2.84%	2.88%	2836.5	547.8	G	H	J	K	M	N	Q	U	V	X	Z	F
LME	Copper	MCU	18.66	19.1	6008.1875	MT	3.81%	3.85%	5994.6	865	G	H	J	K	M	N	Q	U	V	X	Z	F
LME	Lead	MPB	1.442	1.516	13711.2083	MT	0.67%	0.70%	1564.7	1246.5	G	H	J	K	M	N	Q	U	V	X	Z	F
LME	Nickel	MNI	9.17	9.484	1885.9583	MT	0.59%	0.60%	597.1	552.8	G	H	J	K	M	N	Q	U	V	X	Z	F
LME	Zinc	MZN	12.08	12.38	2124.3542	MT	0.87%	0.88%	1550.7	976.4	G	H	J	K	M	N	Q	U	V	X	Z	F
CMX	Gold	GC	79.41235	81.79151	1182.4917	oz	3.19%	3.24%	5201.2	890.5	G	J	J	M	M	Q	Q	Z	Z	Z	Z	G
CMX	Silver	SI	716.9617	752.9706	16.0373	oz	0.39%	0.41%	1104.4	1514.4	H	H	K	K	N	N	U	U	Z	Z	Z	H

(1) Tickers are Reuters RIC Codes.

(2) Using the ACRP's for the 2015 Annual Calculation Period.

(3) Future Months included in the S&P GSCI at the beginning of each calendar month, starting with January 2016. Table 2 contains Month letter codes.

Abbreviations:

bbl Barrels lbs Pounds bu Bushel MMBtu Million British Thermal Units
gal U.S. Gallons oz Troy Ounces MT Metric Tons

Table 2: Month Letter Codes

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

WPAs and Conversion Factors

The WPAs, relevant units and conversion factors used for the Designated Contracts becoming effective during the first Roll Period for the S&P GSCI year 2016 are shown below.

Table 3: World Production Averages for 2016 S&P GSCI Commodities

S&P GSCI Commodity	WPQ Units	2015 WPA	2016 WPA	Percentage Change
Wheat	1000 MT	666,467	678,028	1.7%
Corn	1000 MT	835,882	852,546	2.0%
Soybeans	1000 MT	240,279	244,561	1.8%
Coffee	1000 MT	8,246	8,381	1.6%
Sugar	1000 MT	157,463	158,969	1.0%
Cocoa	1000 MT	4,277	4,498	5.2%
Cotton	1000 MT	25,013	25,279	1.1%
Lean Hogs	1000 MT	38,542	39,767	3.2%
Cattle	1000 MT	49,638	51,514	3.8%
Crude Oil	1000 MT	3,572,232	3,623,324	1.4%
Natural Gas	1000 Petajoules	32,830	33,382	1.7%
Aluminum	1000 MT	45,816	47,090	2.8%
Copper	1000 MT	18,660	19,100	2.4%
Lead	1000 MT	1,442	1,516	5.1%
Nickel	1000 MT	9,170	9,484	3.4%
Zinc	1000 MT	12,080	12,380	2.5%
Gold	1 kg	2,470,000	2,544,000	3.0%
Silver	1 MT	22,300	23,420	5.0%

Note: The contracts considered for inclusion in the S&P GSCI 2016 table are available on the S&P Dow Jones' Web site.

Abbreviations:

MT: Metric Tons

kg: Kilograms

Contract Units and Conversion Factors for 2016 S&P GSCI Contracts

Table 4: Contract Units and Conversion Factors for 2016 S&P GSCI Contracts

Trading Facility	Contract	Contract Size	Units	Conversion Factor Between Contract Units and WPQ Units
CBT	Chicago Wheat	5,000	bu	1,000/36.7
KBT	Kansas City Wheat	5,000	bu	1,000/36.7
CBT	Corn	5,000	bu	1,000/39.4
CBT	Soybeans	5,000	bu	1,000/36.7
ICE - US	Coffee	37,500	lbs	2,204.62
ICE - US	Sugar	112,000	lbs	2,204.62
ICE - US	Cocoa	10	MT	1
ICE - US	Cotton	50,000	lbs	2,204.62
CME	Lean Hogs	40,000	lbs	2,204.62
CME	Live Cattle	40,000	lbs	2,204.62
CME	Feeder Cattle	50,000	lbs	2,204.62
NYM / ICE	Crude Oil	1,000	bbl	7.33
NYM	Heating Oil	42,000	gal	315
NYM	RBOB Gasoline	42,000	gal	355
ICE - UK	Brent Crude Oil	1,000	bbl	7.33
ICE - UK	Gasoil	100	MT	1
NYM / ICE	Natural Gas	10,000	MMBtu	947,086.29
LME	Aluminum	25	MT	1
LME	Copper	25	MT	1
LME	Lead	25	MT	1
LME	Nickel	6	MT	1
LME	Zinc	25	MT	1
CMX	Gold	100	oz	32.15075
CMX	Silver	5,000	oz	32,150.75

Sources and Notes:

Contract Size / Units (Domestic Trading Facilities): *Futures Industry Association, Monthly Volume Report.*

Contract Size / Units (Foreign Trading Facilities): *Futures Industry Association, Futures and Options Fact Book.*

Bloomberg

Abbreviations:

bbl: Barrels

gal: U.S. Gallons

lbs: Pounds

MMBtu: Million British Thermal Units

MT: Metric Tons

oz: Ounces

bu: Bushels

Sources for World Production Data

According to the S&P GSCI Methodology, the WPQ Period for the 2016 S&P GSCI is 2008-2012. This is the most recent period for which data was available for all S&P GSCI Commodities.

Commodity	Primary Source for Production Data
Wheat	FAOSTAT http://faostat.fao.org/site/567/default.aspx#ancor (Commodity: "Wheat", Year 2008-2012)
Corn	FAOSTAT http://faostat.fao.org/site/567/default.aspx#ancor (Commodity: "Maize", Year 2008-2012)
Soybeans	FAOSTAT http://faostat.fao.org/site/567/default.aspx#ancor (Commodity: "Soybeans", Year 2008-2012)
Coffee	FAOSTAT http://faostat.fao.org/site/567/default.aspx#ancor (Commodity: "Coffee, green", Year 2008-2012)
Sugar	USDA http://www.fas.usda.gov/psdonline/psdQuery.aspx (Commodity: "Sugar, Centrifugal", Year 2008-2012)
Cocoa	FAOSTAT http://faostat.fao.org/site/567/default.aspx#ancor (Commodity: "Cocoa beans", Year 2008-2012)
Cotton	*USDA http://www.fas.usda.gov/psdonline/psdQuery.aspx (Commodity: "Cotton", Year 2008-2012)
Lean Hogs	UN Data http://data.un.org/Data.aspx?q=pork&d=ICS&f=cmlID%3a21110-2 FAOSTAT http://faostat.fao.org/site/567/default.aspx#ancor (Commodity: "Pig Meat", Year 2008-2012)
Cattle	UN Data http://data.un.org/Data.aspx?q=beef&d=ICS&f=cmlID%3a21110-1 USDA http://www.nass.usda.gov/Publications/Ag_Statistics/2013/Chapter07.pdf (Agriculture Statistics 2013, Table 7-9 and Table 7-65) FAOSTAT http://faostat.fao.org/site/569/DesktopDefault.aspx?PageID=569#ancor (Commodity: "Cattle Meat", Year 2008-2012)
Crude Oil	UN Data http://data.un.org/Data.aspx?q=crude+petroleum&d=ICS&f=cmlID%3a12010-0
Natural Gas	UN Data http://data.un.org/Data.aspx?q=natural+gas+&d=ICS&f=cmlID%3a12020-1
Aluminum	USGS - MYB 2012 http://minerals.usgs.gov/minerals/pubs/commodity/aluminum/ (Table 13: Aluminum, Primary: World Production By Country)
Copper	USGS - MYB 2012 http://minerals.usgs.gov/minerals/pubs/commodity/copper/ (Table 22: Copper: World Refinery Production By Country)
Lead	USGS - MYB 2012 http://minerals.usgs.gov/minerals/pubs/commodity/nickel/ (Table 12: Nickel: World Plant Production By Country)
Nickel	USGS - MYB 2012 http://minerals.usgs.gov/minerals/pubs/commodity/lead/ (Table 13: Lead: World Refinery Production By Country)
Zinc	USGS - MYB 2012 http://minerals.usgs.gov/minerals/pubs/commodity/zinc/ (Table 11: Zinc: World Smelter Production By Country)
Gold	USGS - MYB 2012 http://minerals.usgs.gov/minerals/pubs/commodity/gold/ (Table 8: Gold: World Mine Production By Country)
Silver	USGS - MYB 2012 http://minerals.usgs.gov/minerals/pubs/commodity/silver/ (Table 8: Silver: World Mine Production By Country)

Example for Calculating the Normalizing Constant

The Normalizing Constant becoming effective during the first Roll Period for the S&P GSCI Year 2016 depends on the Daily Contract Reference Prices of the relevant Designated Contracts on the 4th business day of January. At the time of the compilation of the S&P GSCI Methodology, such prices are obviously not available. Therefore, for demonstration purposes, we carry on the calculation using the Average Contract Reference Prices. The rules are described in section V of the S&P GSCI Methodology.

2016 Normalizing Constant						
Trading Facility	Designated Contract	2015 CPW	2016 CPW	2016 ACRP (\$)	2015 TDW	2016 TDW
CBT	Chicago Wheat	19929.26	20181.8	5.2142	103,914.48	105,231.27
KBT	Kansas Wheat	4559.198	4731.456	5.5377	25,247.51	26,201.42
CBT	Corn	32907.26	33563.3	3.7573	123,642.17	126,107.11
CBT	Soybeans	8828.723	8986.094	9.7858	86,396.41	87,936.42
ICE - US	Coffee	18179.15	18477.47	1.5135	27,514.90	27,966.42
ICE - US	Sugar	347147	350467.6	0.1355	47,023.95	47,473.76
ICE - US	Cocoa	4.277231	4.49828	2997.0833	12,819.22	13,481.72
ICE - US	Cotton	55144.32	55730.3	0.6341	34,966.55	35,338.12
CME	Lean Hogs	84970.17	87671.93	0.7821	66,453.75	68,566.76
CME	Live Cattle	92895.69	92186.84	1.5473	143,738.66	142,641.85
CME	Feeder Cattle	16537	21383.2	2.1603	35,724.74	46,193.95
NYM / ICE	WTI Crude Oil	10354.9	11568.56	59.3700	614,770.41	686,825.41
NYM	Heating Oil	82958.12	78754.85	1.9707	163,489.02	155,205.46
NYM	RBOB Gasoline	86115.54	84209.46	1.8783	161,752.25	158,172.03
ICE - UK	Brent Crude Oil	9618.998	9256.426	65.7775	632,713.64	608,864.56
ICE - UK	Gasoil	341.2737	294.9689	588.2500	200,754.25	173,515.46
NYM / ICE	Natural Gas	31092.93	31615.91	3.0555	95,004.45	96,602.41
LME	Aluminum	45.816	47.09	1820.8542	83,424.25	85,744.02
LME	Copper	18.66	19.1	6008.1875	112,112.78	114,756.38
LME	Lead	1.442	1.516	13711.2083	19,771.56	20,786.19
LME	Nickel	9.17	9.484	1885.9583	17,294.24	17,886.43
LME	Zinc	12.08	12.38	2124.3542	25,662.20	26,299.50
CMX	Gold	79.41235	81.79151	1182.4917	93,904.44	96,717.78
CMX	Silver	716.9617	752.9706	16.0373	11,498.15	12,075.64
					2,939,594.02	2,980,590.07

Based on the Normalizing Constant effective for the 2015 January Roll Period equal to 6654.549, using the formula in section V of the S&P GSCI Methodology and rounding to seven (7) significant digits, the new 2016 Normalizing Constant is:

$$NC_{new} = NC_{old} * TDWR = 6654.549 * \frac{2,980,590.07}{2,939,594.02} = 6747.354$$

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