

S&P Dow Jones Indices

A Division of **S&P Global**

S&P WCI Index *Methodology*

February 2018

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I. Introduction

I.1 Index Objective and Highlights

The S&P WCI Index is a rules-based, world production-weighted commodity index. It is designed as a tradable index, readily accessible to global market participants. In addition, the S&P WCI Index is unique in the choice of the futures contracts and their underlying currency denominations:

- Only listed commodity futures contracts that trade outside of the U.S. are included
- No restriction on the currencies in which the eligible contracts are traded.

I.2 Currency, Currency Hedged, and Risk Control Indices

The S&P WCI is calculated in U.S. dollars (US\$) only. The underlying futures contracts prices are collected in the local currencies. Using WM/Reuters' spot exchange rates, these local prices are converted to US\$.

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.

I.3 Exchange Rates

Real-time Forex rates, as supplied by WM/Reuters, are used for ongoing index calculation. The index's final closing values convert all underlying contracts prices used in the index calculation at the spot exchange rates provided by WM/Reuters at London 04:00 PM Greenwich Mean Time.

I.4 Real-Time Calculation

A real-time index is calculated as soon as the first exchange within the index opens. The opening price is the first trade of any futures contracts included in the index on the designated exchange. In the event that a contract does not open, the previous closing price is used. For each Trading Facility with contracts included in S&P WCI, the indices are calculated until 10 minutes past the closing of the Trading Facility to allow for last-minute revisions.

I.5 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

II. Overview

II.1 Overview of the S&P WCI

The S&P WCI is designed as a benchmark for investment in the international commodity markets and as a measure of the international commodity market performance over time. It is also designed as a tradable index that is readily accessible to market participants. In order to accomplish these objectives, the S&P WCI is calculated primarily on a world production-weighted basis and comprises the principal physical commodities that are the subject of active, liquid futures markets. There is no limit on the number of contracts that may be included in the S&P WCI; any contract that satisfies the eligibility criteria and the other conditions specified in this methodology are included. This feature enhances the suitability of the S&P WCI as a benchmark for the international commodity market performance and to reflect general levels of price movements and inflation in the world economy. The S&P WCI is calculated and maintained by S&P Dow Jones Indices.

This methodology 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 document. 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.

II.2 The S&P WCI and Related Indices

In order to reflect the performance of a total return investment in commodities, three separate but related indices have been developed based on the S&P WCI — (1) the S&P WCI Index, which is based on price levels of the contracts included in the S&P WCI; (2) the S&P WCI Excess Return Index (S&P WCI ER), which incorporates the returns of the S&P WCI Index, the discount or premium obtained by “rolling” hypothetical positions in such contracts forward as they approach delivery, and the daily currency carry adjustment; and (3) the S&P WCI Total Return Index (S&P WCI TR), which incorporates the returns of the S&P WCI ER and interest earned on hypothetical fully collateralized contract positions on the commodities included in the S&P WCI.

S&P Dow Jones Indices calculates and publishes the value of the S&P WCI, the S&P WCI ER, and the S&P WCI TR, as well as each of the sub-indices, continuously on each business day, with such values updated every several minutes. In addition, a number of data vendors publish S&P WCI quotations. S&P Dow Jones Indices publishes an official daily settlement price for each of the indices and sub-indices on each S&P WCI Business Day between 04:00 PM and 06:00 PM, Eastern Time.

II.3 Definitions

As used in this methodology, the following terms have the meanings indicated. For all other definitions and terms used in this methodology, the terms and definitions can be referenced in our S&P Dow Jones Indices' GSCI Reference Guide, available at www.spdji.com.

Daily Currency Carry Adjustment (DCCA). An index return adjustment based on an FX portfolio of local currencies against the US\$.

Investment Support Level (ISL). The targeted amount of investment in the S&P WCI and related indices, expressed in U.S. dollars, that S&P Dow Jones Indices, in consultation with the Commodity 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 WCI-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 WCI 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 Commodity 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 WCI is used. The Investment Support Level is currently set at US\$ 10 billion.

Local Currency. Local Currency refers to the currency in which a Contract is quoted on the Trading Facility on which the Contract is listed.

S&P WCI. The S&P World Commodity Index, known under the proprietary name *S&P WCI*.

S&P WCI Business Day. A day on which the indices are calculated, as determined by the London Metal Exchange and ICE Futures Europe™ UK Holiday & Hours schedule. Any deviation from this schedule will be announced to clients in advance.

S&P WCI ER. The S&P WCI Excess Return Index, which is the accretion of the Contract Daily Return with a Daily Currency Carry Adjustment, indexed to a base value of 100 on December 30, 1999.

S&P WCI 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 VII of this methodology.

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

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

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

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

Spot FX Rate. The Spot Foreign Exchange Rate is based on the WM/Reuters Rates, used to convert Local Currency into US\$.

III. Identification of Contracts for Inclusion in the S&P WCI

III.1 Overview of Identification Process

The Contracts to be included in the S&P WCI for a given S&P WCI Year must satisfy several sets of eligibility criteria. First, S&P Dow Jones Indices identifies those contracts that meet the general criteria for eligibility (section III.2). Second, the Contract volume and weight requirements are applied (sections III.3 and III.4) and the number of Contracts is determined (section III.5), which serves to reduce the list of eligible Contracts. At that point, the list of Designated Contracts for the relevant S&P WCI Year is complete and the process moves to the determination of the production weights, as discussed in the next section of this methodology.

III.2 General Eligibility Requirements

In determining the Contracts to be included in the S&P WCI for a given S&P WCI Year, S&P Dow Jones Indices first identifies the Contracts that satisfy the general eligibility criteria set forth below. These criteria are intended only to identify Contracts with characteristics that will facilitate the calculation of the S&P WCI and are consistent with the general purposes of the S&P WCI as a benchmark for international commodity market performance and a tradable index. This process generally produces a substantial list of Contracts potentially eligible for inclusion in the S&P WCI. The list is narrowed through the application of the more specific criteria described below. The sources of the information used to determine the Contracts that satisfy the general eligibility criteria are identified in section III.7.

The general eligibility criteria are the following:

III.2(a) Non-Financial Commodities. To be eligible for inclusion in the S&P WCI, a Contract must be on a physical commodity and may not be on a financial commodity (e.g., securities, currencies, interest rates, etc.). The Contracts on a particular commodity need not require physical delivery by their terms in order for the commodity to be considered a physical commodity.

The S&P WCI is intended in part to measure performance in the physical commodity markets and to correlate with general price movements in the world economy. The limitation to Contracts on physical commodities, and the exclusion of Contracts on financial commodities, serve to limit the eligible commodities to those Contracts on commodities that are the subject of production or distribution processes in the world economy and that have a direct effect on price levels and inflation.

III.2(b) Certain Contract Characteristics. In order for a Contract to be eligible for inclusion in the S&P WCI, the following criteria must be satisfied: (i) the Contract 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; and (ii) the Contract must, at any given point in time, be available for trading at least five months prior to its expiration or such other date or time period specified for delivery or settlement; and (iii) 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 WCI that, at any given point in time, will be involved in the rolls to be effected in the next three Roll Periods.

The requirements set forth in this section reflect the fact that some of the products from time to time traded on or through Trading Facilities, in particular certain electronic platforms, may not display traditional characteristics of a futures contract, such as particular contract months. While it is not necessary for a Contract Expiration to be expressed as a calendar month, the S&P WCI and its

underlying methodology are premised upon the existence of specified dates or time periods for delivery or settlement. It is assumed that Contracts traded on contract markets, exempt electronic trading facilities, derivatives transaction execution facilities, exempt boards of trade and foreign boards of trade (as such terms are defined in the U.S. Commodity Exchange Act and the rules and regulations promulgated hereunder) will generally satisfy the above requirements, unless S&P Dow Jones Indices determines that any such Contract does not satisfy the foregoing criteria. The requirement that the Contract be available for trading at least five months prior to its expiration is designed to ensure that a genuine trading market in the Contract exists prior to the time established for delivery or settlement, when trading conditions can be affected by the impending expiration of the Contract. The final requirement in this Section, regarding execution of spread transactions, is designed to allow market participants to effect the rolling of contracts included in the S&P WCI more efficiently.

III.2(c) Denomination and Geographical Requirements. To be eligible for inclusion in the S&P WCI, a Contract must be traded on or through a Trading Facility that has its principal place of business or operations outside of the United States, and is accessible to global investors during the relevant Annual Calculation Period or Interim Calculation Period.

III.2(d) Availability of Daily Contract Reference Prices.

- i. For a Contract to be eligible for inclusion in the S&P WCI, Daily Contract Reference Prices for such 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.
- ii. At and after the time a particular Contract is included in the S&P WCI, the Daily Contract Reference Price for such Contract must be published 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.

The requirement that a Contract have a continuous price history of at least two years is intended to ensure the reliability and availability of the prices necessary to enable S&P Dow Jones Indices to calculate the S&P WCI. In addition, in order to calculate the S&P WCI on an ongoing basis, S&P Dow Jones Indices must be able to obtain Daily Contract Reference Prices for certain Contract Expirations with respect to each Designated Contract prior to the S&P WCI Settlement Time on each Contract Business Day. This requirement is intended to assure that the value of the S&P WCI can be reliably calculated on the basis of prices that are both announced and, in general, readily available to the members of, or participants in, the relevant Trading Facility (and S&P Dow Jones Indices).

III.2(e) Availability of Volume Data. For a Contract to be eligible for inclusion in the S&P WCI, volume data with respect to such Contract must be available, from sources satisfying the criteria specified in Section III.7(b), for at least the three months immediately preceding the date on which the determination is made. Furthermore, the minimum annualized level is set at 500,000.

III.2(f) Other Requirements with respect to Trading Facilities. The Trading Facility on or through which a Contract is traded must:

- (i) make price quotations generally available to its members or participants (and to S&P Dow Jones Indices) in a manner and with a frequency that is sufficient to provide reasonably reliable indications of the level of the relevant market at any given point in time;
- (ii) make reliable trading volume information available to S&P Dow Jones Indices with at least the frequency required by S&P Dow Jones Indices to make the monthly determinations described in section III.6;
- (iii) accept bids and offers from multiple participants or price providers (i.e., it must not be a single-dealer platform); and
- (iv) be accessible by a sufficiently broad range of participants. Such access may be provided either (a) by the Trading Facility making clearing services reasonably available, thereby eliminating counterparty credit considerations, or (b) by a network of brokers or dealers who are willing to intermediate transactions with third parties, thereby enabling such third parties to enter into transactions based on prices posted on such Facility.

These requirements are intended to establish certain minimum standards for Trading Facilities. If trading in certain commodities is shifted to electronic platforms that are largely unregulated, or subject to different levels or types of regulation than traditional exchanges, these standards will serve to ensure that the S&P WCI includes only Contracts for which sufficient and reliable data, and in particular price data developed in a competitive process, are available. It is assumed that contract markets and foreign boards of trade (as such terms are defined in the U.S. Commodity Exchange Act and the rules and regulations promulgated hereunder) will generally satisfy the above requirements, unless S&P Dow Jones Indices determines otherwise.

III.2(g) Contract Trading Hour Requirements. S&P Dow Jones Indices may exclude a Contract from the S&P WCI that otherwise satisfies the criteria and conditions for inclusion if, in its reasonable judgment, such Contract's Overall Trading Window is insufficient to support the tradability of the S&P WCI taken as a whole.

This requirement is intended to support and enhance the tradability of the S&P WCI, by ensuring that all Designated Contracts are available for trading during at least a minimum period of time.

III.3 Total Dollar Value Trading Requirement

The S&P WCI is limited to those Contracts that are actively traded in order to assure that the prices generated by the markets for such Contracts represent reliable, competitive prices. The Contracts that satisfy the general eligibility requirements set forth in section III.2, therefore, must also satisfy the volume trading requirements described below before being included in the S&P WCI.

In order to be added to the S&P WCI, a Contract that is not included in the S&P WCI at the time of determination (which may be either a Monthly Observation Date or the time of the annual determination of the composition of the S&P WCI), and is based on a commodity that is not represented in the S&P WCI at such time, must have an annualized Total Dollar Value Traded, over the relevant Annual Calculation Period or Interim Calculation Period, of at least US\$ 15 billion.

In order to continue to be included in the S&P WCI, a Contract that is in the S&P WCI at the time of determination, and is the only Designated Contract on the relevant S&P WCI Commodity, must have an annualized Total Dollar Value Traded of at least 50% of its prior S&P WCI Year's TDVT over the relevant Annual Calculation Period or Interim Calculation Period.

In order to be added to the S&P WCI, a Contract that is not included in the S&P WCI at the time of determination, and is based on an S&P WCI Commodity on which there are one or more Designated Contracts already included in the S&P WCI, must have an annualized Total Dollar Value Traded, over the relevant Annual Calculation Period or Interim Calculation Period of at least US\$ 30 billion.

In order to continue to be included in the S&P WCI, a Contract that is already included in the S&P WCI at the time of determination, and is based on a S&P WCI Commodity on which there are one or more Designated Contracts already included in the S&P WCI, must have an annualized Total Dollar Value Traded of at least 50% of its prior S&P WCI Year's TDVT over the relevant Annual Calculation Period or Interim Calculation Period.

For these purposes, in determining whether a particular Contract is included in the S&P WCI, any changes in the composition of the S&P WCI that have been determined in accordance with the procedures set forth in this methodology, but that have not yet become effective, shall be deemed to have been already made.

Notwithstanding any provisions to this methodology (including, but not limited to, any of the definitions), the Total Dollar Value Traded (TDVT) and the Total Quantity Traded (TQT) of any Contract are calculated based on the relevant volume of such Contract together with the volume of any Related Contract. Any other modifications to the definitions included in this methodology that are necessary in order to implement such calculations are hereby deemed to have been made for purposes of calculating the relevant TDVTs and TQTs.

The Total Dollar Value Traded measures the extent to which a commodity is the subject of Contract trading. Analyzing this feature through the use of dollar values is free from contract-dependent characteristics such as contract size and, thus, makes it possible to compare the results for all Contracts. The minimum TDVT requirement, therefore, further enhances the tradability of the S&P WCI by excluding those Contracts that do not represent sufficient trading activity in the relevant commodity.

In recognition of the significant volatility and the relatively lower liquidity of the international commodities markets, and to further prevent a Contract from being added to and deleted from the S&P WCI in successive years, a Contract that has a drop of no more than 50% of its TDVT from its year ago level will not be excluded from the S&P WCI.

III.4 Reference Percentage Dollar Weight Requirement

In addition to the volume requirements described above, in order to be included in the S&P WCI a Contract must have a minimum Reference Percentage Dollar Weight.

In order to continue to be included in the S&P WCI, at the time of determination a Contract must have a Reference Percentage Dollar Weight of at least 0.10% or no less than 50% of its prior year's level, whichever is lower.

In order to be added to the S&P WCI, a Contract that is not included in the S&P WCI at the time of determination must have a Reference Percentage Dollar Weight of at least 0.20%.

In determining whether a particular Contract is included in the S&P WCI, any changes in the composition of the index that have been determined in accordance with the procedures set forth in this methodology, but that have not yet become effective, shall be deemed to have been already made.

The Reference Percentage Dollar Weight is calculated on the basis of the proposed composition of the S&P WCI determined in accordance with the procedures set forth above. Any Contract that does not satisfy the applicable Reference Percentage Dollar Weight requirement is excluded from such proposed composition, and the CPWs of the remaining Contracts are recalculated in accordance with the procedure set forth in section IV.4, until the proposed S&P WCI contains only Contracts that satisfy the applicable Reference Percentage Dollar Weight requirements. This provision is designed to enhance the tradability of the S&P WCI by eliminating those Contracts that would account for *de minimis* percentages of the S&P WCI, thereby requiring traders to maintain and roll small positions.

III.5 Determination of the Number of Contracts

III.5(a). Determination of Commodity Groups. S&P Dow Jones Indices will from time to time determine which commodities, based on such factors as physical characteristics, trading, production, use or pricing, are sufficiently related to constitute a single S&P WCI Commodity for purposes of the methodology and procedures described in this methodology.

III.5(b). Selection of Contracts on the same S&P WCI Commodity and among several S&P WCI Commodities. In the event that two or more Contracts on the same S&P WCI Commodity satisfy the eligibility criteria set forth above, such Contracts are included in the S&P WCI in the order of their respective TQTs, with the Contract having the highest TQT being included first. No further Contracts are included if such inclusion results in the TVM for such Commodity exceeding the Total Volume Multiple (TVM) Upper Level.

If under the procedure set forth in the preceding paragraph, additional Contracts could be included with respect to several S&P WCI Commodities at the same time, the procedure is first applied to the S&P WCI Commodity that has the lowest TVM at the time of determination. Subject to the other eligibility criteria, the Contract with the highest TQT on such Commodity is included. Before any additional Contract on any S&P WCI Commodity is included, the TVMs for all S&P WCI Commodities are recalculated. The selection procedure described above is, then, repeated with respect to the Contracts on the S&P WCI Commodity that, then, has the lowest TVM.

Notwithstanding the above, and notwithstanding any other provisions of this methodology (including, but not limited to, any of the definitions), the TVM of any Contract and all other measures related to the TVM are calculated based on the relevant volume of such Contract together with the volume of any Related Contract. Any other modifications to the definitions included in this methodology that are necessary in order to implement such calculations are hereby deemed to have been made for purposes of calculating the relevant TVMs.

Notwithstanding the foregoing, between the First Contract and a Related Contract, only the Contract with the greater TQT over the relevant Calculation Period is included in the S&P WCI.

As described above, within each commodity group, the order in which additional Contracts are added is based on the TQTs of the relevant Contracts. If the Contracts on a particular S&P WCI Commodity have sufficient liquidity to support the portion of the S&P WCI that is attributable to such Commodity (as measured by the TVM), then no further Designated Contracts on such Commodity are necessary. If, however, the TVM of such Commodity is relatively low, it may be necessary or appropriate to include additional Contracts as Designated Contracts. This serves to spread the liquidity attributable to the relevant S&P WCI Commodity across a broader range of Contracts, thereby enhancing the tradability of the S&P WCI. However, no additional Contracts are added if their addition would cause the TVM of the relevant S&P WCI Commodity to exceed the TVM Upper Level. In those circumstances, no further liquidity in the relevant S&P WCI Commodity is necessary.

III.6 Intra-Year Changes in the Composition of the S&P WCI

As described in greater detail in section IV.6, the composition of the WCI is reviewed on a monthly basis during any given S&P WCI Year. If on any Monthly Observation Date, the TVM of any Designated Contract is below the TVM Threshold for the relevant S&P WCI Year, the composition of the S&P WCI with respect to the S&P WCI Commodity underlying such Contract will be re-determined.

III.7 Sources of Information

The following are the sources of the information used to determine the eligibility of Contracts for inclusion in the S&P WCI pursuant to the requirements set forth in sections III.2(b) through III.2(g). If any of the sources identified below is unavailable with respect to the determination of the S&P WCI for a particular S&P WCI Year, S&P Dow Jones Indices will identify appropriate alternative sources and the composition of the S&P WCI for such S&P WCI Year will be based on such alternative sources. In addition, if S&P Dow Jones Indices, in its reasonable judgment, believes that one or more of the sources identified below contains a manifest error, it may use an alternative source to obtain the necessary information. Any such alternative sources used by S&P Dow Jones Indices will be publicly disclosed at the time that the composition of the S&P WCI for the next S&P WCI Year is announced.

III.7(a) General Eligibility Requirements. The identification of those commodities that satisfy the general eligibility requirements set forth in section III.2 is based on the FIA Reports that are published with respect to the relevant Annual Calculation Period or Interim Calculation Period, and in the most recent version of the *Futures and Options Fact Book*, published by the Futures Industry Institute, available on the date of determination. The determination as to whether a particular Trading Facility has its principal place of business or operations in any country is based on the most recent data published by the Futures Industry Institute available on the date of determination.

III.7(b) Contract Volume and Liquidity Requirements. In order to determine whether a particular Contract satisfies the volume and liquidity requirements described above, S&P Dow Jones Indices may use any available sources that it believes to be reasonably reliable including, but not limited to, data contained in the FIA Reports. In the event of manifest error, S&P Dow Jones Indices may supplement, and make corrections to, any such data.

Volume data used to determine whether a particular Contract is eligible to be included in the S&P WCI are the data for the relevant Annual Calculation Period or Interim Calculation Period, provided that in the case of a Contract that has been trading for fewer than 12 months, the determination is made on the basis of data for the period of time during which the Contract has been trading, with such data being annualized.

Volume data with respect to a given Contract are calculated based on the volumes of all Contract Expirations of such Contract that have been traded within the relevant Annual Calculation Period or Interim Calculation Period.

III.7(c) Adjustments in Special Circumstances. In applying volume data for purposes of calculating the S&P WCI, S&P Dow Jones Indices may make any such adjustments as it believes to be reasonably necessary in order to take into account any unique or unusual factors with respect to the relevant S&P WCI Commodity.

III.7(d) Adjustments to Constituents Inclusion for Pro-Forma History. The Total Dollar Value Traded (TDVT) threshold was adjusted throughout the back-testing history to reflect the world commodity market growth. The TDVT threshold was set at \$6 billion in 2000 – 2005, \$7.5 billion in 2006, \$10 billion in 2007 – 2009 and was raised to \$15 billion in 2010. Year-by-year commodity selections were also adjusted for extreme shifts in trading volumes.

IV. Calculation of the Contract Production Weights

IV.1 Overview of the Contract Production Weights

The S&P WCI is a production-weighted index that is designed 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. In addition to determining the list of Designated Contracts, it is necessary to ascertain the quantity of each such Designated Contract to be included in the S&P WCI, i.e. the Contract Production Weights. The calculation of the Contract Production Weights, or CPWs, of the Designated Contracts involves a four-step process: (1) determination of the World Production Quantity, or WPQ, of each S&P WCI Commodity (section IV.2); (2) determination of the World Production Average, or WPA, of each S&P WCI Commodity over the WPQ Period (section IV.3); (3) calculation of the CPW based on the Contract's percentage of the relevant TQT (section IV.4); and (4) certain adjustments to the CPWs (sections IV.5 and IV.6). The procedure for selecting the data sources from which the WPQs, WPAs, and CPWs are derived is described in section IV.7.

IV.2 World Production Quantities

IV.2(a) Determination of WPQs. The WPQ of each S&P WCI Commodity is equal to the total world production of the S&P WCI Commodity (except as otherwise set forth in this section) 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 (1½) years between the end of the WPQ Period and the end of the relevant Annual Calculation Period. This delay is based on the fact that world production statistics are often incomplete and subject to revision for some time 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 WCI 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 WCI Commodities, which allows comparisons between production figures to be made without taking into account temporary aberrations in different time periods.

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.

IV.2(b) Regional Production Data. If an S&P WCI 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 WCI Commodity on the basis of regional, rather than world, production. At present, natural gas is the only S&P WCI Commodity in which the WPQ is determined on the basis of regional production. The WPQ of natural gas is based on European Union production.

Certain commodities, such as natural gas, are primarily regional commodities, due to the prohibitive cost of transporting such commodities from one part of the world to another or for other reasons. In such instances, it might not be appropriate to determine the WPQ of the commodity on the basis of world production data. For this reason, the definition of the term S&P WCI Commodity in this methodology includes any group of commodities that, 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. In those cases in which an S&P WCI Commodity is a regional commodity, S&P Dow Jones Indices may determine the WPQ of such Commodity on the basis of regional production data.

IV.3 World Production Averages

The WPA of each S&P WCI Commodity is equal to its WPQ over the WPQ Period, divided by five. The WPA is simply the average annual production amount of the S&P WCI Commodity based on the WPQ over a five-year period.

IV.4 Contract Production Weights

In calculating the CPW of each Designated Contract on a particular S&P WCI 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 (i) the Percentage TQT for such Contract multiplied by (ii) the WPA of the underlying S&P WCI Commodity (after any necessary conversion made for purposes of the calculation) and divided by (iii) 1,000,000. However, if the calculation of the CPWs for the Designated Contracts on a particular S&P WCI Commodity results in the 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. This is achieved by setting the TVM for each such Contract at the TVM Reweighting Level, and reducing the CPW for such Contract accordingly. The adjustment procedure is designed to ensure that the CPW of each Designated Contract is at a level sufficient to support trading activity in the S&P WCI, but not disproportionately high. The final CPWs are rounded to seven digits of precision. The new CPWs are implemented at the beginning of each S&P WCI Period in accordance with the rolling procedure set forth in section VII.2(d).

IV.5 CPW Adjustment Procedure

The following procedure is used to adjust the CPWs of Designated Contracts, under the circumstances described above:

1. Determine the set "A" of all Designated Contracts to be re-weighted. If the set A is empty, then no adjustment is necessary.
2. Compute the CPWs for all Designated Contracts in A in accordance with the following formula:

$$CPW_i = \frac{\text{Percentage } TQT_i * WPA_i}{1,000,000}$$

3. Re-compute the TVMs for all Contracts in A and partition A into the following subsets:

$A_L = \{\text{Contracts with TVM below the TVM Reweighting Level}\}$

$A_E = \{\text{Contracts with TVM at the TVM Reweighting Level}\}$

And

$A_H = \{\text{Contracts with TVM above the TVM Reweighting Level}\}$

4. If A_L is empty, then no further adjustment is necessary.

5. For each of the Contracts in A_H , leave the CPW as specified in step (2).
6. Solve the set of linear equations for the CPWs of all Contracts in A_L and A_E .

$$TQT_i * \sum_{k \in C} (CPW_k * ACRP_k) = ISL * CPW_i * TVMRL$$

(where C is the set of all Contracts in the prospective index composition)

7. Repeat steps (3) through (6) until no further adjustment is necessary.

IV.6 Monthly Review of Index Composition

On each Monthly Observation Date, S&P Dow Jones Indices calculates the TVM of each Designated Contract, based on volume data for the relevant Interim Calculation Period. If on any such Date, the TVM of any Designated Contract is below the TVM Threshold, S&P Dow Jones Indices adjusts the composition of the S&P WCI, with respect to the S&P WCI Commodity underlying such Contract (but not with respect to any other S&P WCI Commodities), in accordance with the following principles:

- a. All eligible Contracts, whether previously included in the S&P WCI or not, on such Commodity as of such Date are identified, based on the eligibility criteria and subject to the limits set forth in section III.
- b. The CPWs of all Contracts so identified are determined in accordance with the procedure set forth in sections IV.4 and IV.5, provided that the Percentage TQT for each such Contract is determined based on volume data for the relevant Interim Calculation Period for which such data are available for all Contracts on the relevant S&P WCI Commodity.
- c. At the beginning of the new S&P WCI Period following the foregoing adjustments, the S&P WCI is re-normalized in accordance with the procedure set forth in section VI.

In order to maintain the liquidity and tradability of the S&P WCI throughout each S&P WCI Year, this section provides a mechanism to review and reallocate the distribution of CPWs among the Designated Contracts on a particular S&P WCI Commodity in the course of such Year, if there has been a significant decline in the liquidity of any such Contract. Any such reallocation may result in new Contracts on the same S&P WCI Commodity being included in the S&P WCI, or Designated Contracts that have been previously included in the S&P WCI being excluded. For this purpose, the liquidity of each Designated Contract is measured by its Trading Volume Multiple, which is calculated and reviewed on each Monthly Observation Date.

If any changes are made to the composition of the S&P WCI (including changes regarding the relative weight of any Designated Contract) in accordance with the procedure described above, the manner in which such changes are effected will be determined by S&P Dow Jones Indices, based on market conditions and other relevant factors, and publicly announced as soon as is reasonably practicable, which is expected to be at least three weeks prior to the implementation of such changes.

IV.7 Sources of Information

IV.7(a) Sources of Information for the Determination of CPWs. S&P Dow Jones Indices decides the sources of information used in determining the CPWs for a given S&P WCI Period. S&P Dow Jones Indices will generally use the same sources of information used to determine the CPWs for or during the immediately preceding S&P WCI Year. If such sources are not reasonably available or do not contain the necessary information, or if, in the reasonable judgment of S&P Dow Jones Indices, the information included in any such sources is inaccurate, unreliable or contains manifest error, S&P Dow Jones Indices will identify alternative sources of information. To the extent practicable, S&P Dow Jones Indices will publicly announce the sources used to determine the CPWs for or during a given S&P WCI Period at the time that the composition of the S&P WCI and the calculation of the CPWs for such Period are announced.

IV.7(b). Sources of Conversion Factors. The factors used to effect the conversions mentioned in section IV.2, which are necessary in order to convert the units of measurement used in the WPQs into the units of measurement used with respect to the applicable Contracts are derived from publicly available sources selected by S&P Dow Jones Indices.

V. Designated Contract Expirations

V.1 Use of Designated Contract Expirations in Calculating the S&P WCI

As indicated above, the Total Dollar Weight of the S&P WCI can only be determined based on the prices of actual Contracts. Because Designated Contracts by definition call for delivery or settlement on specified dates or during specified terms, it is necessary to determine the Designated Contract Expirations that will be included in the S&P WCI in order to identify the appropriate prices of such Contracts to be used in calculating the value of the S&P WCI. The identification of the Designated Contract Expirations during a given S&P WCI Year is made by S&P Dow Jones Indices at the time that the composition of the S&P WCI for such Year is determined or when Contracts are added. This section of the methodology sets forth the procedures for determining the Designated Contract Expirations for each Designated Contract.

V.2 Identification of Designated Contract Expirations

S&P Dow Jones Indices determines the Designated Contract Expirations for each Designated Contract during a given S&P WCI Year, provided that each such Designated Contract Expiration must be an Active Contract.

With respect to certain Contracts, a number of Contract Expirations have historically exhibited low trading volumes and are generally regarded as inactive. This may be due to seasonal cycles of supply and demand in the underlying commodity or other production, distribution, or economic factors. Inactive Contracts, although available for trading, might not generate accurate and reliable market prices because of the low level of trading activity. For this reason, the S&P WCI is calculated only on the basis of the prices of Active Contracts.

Once a Contract Expiration is identified as a Designated Contract Expiration, the S&P WCI is calculated on the basis of such Contract Expiration for the given S&P WCI Year, in accordance with the procedures set forth in section VII of this methodology. However, if S&P Dow Jones Indices determines during the course of an S&P WCI Year that a Contract Expiration that has been included as a Designated Contract Expiration is no longer an Active Contract, such Designated Contract Expiration will be deleted from the S&P WCI for the remainder of that S&P WCI Year. Conversely, if a new Contract is added to the S&P WCI on an intra-year basis, S&P Dow Jones Indices will identify the Designated Contract Expirations with respect to such Contract for the remainder of the relevant S&P WCI Year.

V.3 Failure to Trade Designated Contract Expirations

V.3(a) Deletion of Designated Contract Expirations. If a Trading Facility deletes a Contract Expiration that is a Designated Contract Expiration, such Contract Expiration will no longer constitute a Designated Contract Expiration for the remainder of the S&P WCI Year in which the deletion occurs. The S&P WCI will be calculated solely on the basis of the remaining Designated Contract Expirations for the remainder of the relevant S&P WCI Year.

V.3(b) Delay in Trading of Designated Contract Expirations. If two consecutive Designated Contract Expirations for a particular Designated Contract have not been made available for trading on or through the relevant Trading Facility at least six months prior to the date on which the Roll Period is scheduled to begin with respect to the first of these two Designated Contract Expirations, pursuant to section VII.2(c), S&P Dow Jones Indices will determine what action should be taken. Such action may include, without limitation, a decision to delete the Designated Contract Expirations or the Designated Contract from the S&P WCI for the remainder of the S&P WCI Year, or a contingent decision to include such Contract

Expirations or Designated Contract if the Designated Contract Expiration is made available by a specified date.

In unusual situations, a Trading Facility may not officially delete or replace Designated Contracts on a particular commodity but may, nevertheless, delay the availability of Contracts for particular expirations by the time the Designated Contract Expirations for the next S&P WCI Year are determined. The provision set forth above is designed to address this type of unusual situation. Any action taken will be publicly announced prior to the effective date of the change in the composition of the S&P WCI.

For example, if the Designated Contract Expirations for a given Designated Contract are scheduled to include the month of July, and the respective Trading Facility deletes the July Contract Expiration for that year but an August Contract Expiration is made available for trading, the S&P WCI will be calculated on the basis of the August Contract Expiration, subject to the “rolling” procedures set forth in section VII.2(c) of this methodology, provided that the August Contract Expiration had been made available for trading sufficiently early as specified in section III.2(d).

V.4 Replacement of Contracts

If trading in all Contract Expirations with respect to a particular Designated Contract is terminated, or the relevant Trading Facility announces that no additional Contract Expirations will be made available with respect to a Designated Contract, an eligible replacement Contract on the relevant S&P WCI Commodity may be included in the S&P WCI. To the extent practicable, any such replacement will be in effect on the next following Monthly Observation Date, and in accordance with the procedure set forth in section IV.6.

If another Contract replaces a Designated Contract and the timing or procedure contemplated above is not practicable, a determination will be made as to the date from which the S&P WCI will be calculated using the replacement Contract. In making this determination, S&P Dow Jones Indices expects to take into account a number of factors, including any differences between the existing Contract and the replacement Contract specifications, Contract Expirations, and other matters. These factors may make it necessary or advisable to effect the transfer from the existing Contract to the replacement Contract over a series of days. It is anticipated that such a transfer will be implemented in a manner similar to the “rolling” of the S&P WCI that takes place during each Roll Period, as described in section VII.2(c).

If a replacement contract is to be included in the S&P WCI, S&P Dow Jones Indices will publicly announce the manner in which the transfer from the existing Contract to the replacement Contract will be implemented, and whether the CPWs of the other Designated Contracts on the relevant S&P WCI Commodity and/or the Normalizing Constant will be recalculated.

VI. The Normalizing Constant

VI.1 Purpose of the Normalizing Constant

In order to assure continuity of the S&P WCI and to allow comparisons of the value of the S&P WCI to be made over time, it is necessary to make an adjustment to the calculation of the S&P WCI each time the CPWs are changed. The factor used to make this adjustment is the Normalizing Constant (NC) and is used in the same manner as similar factors applied to the calculation of other published financial market indices. The NC is determined each time the composition of the S&P WCI is changed pursuant to the procedures set forth in this methodology.

VI.2 Calculation of the Total Dollar Weight of the S&P WCI on Non-Roll Days

The formula for calculating the Total Dollar Weight of the S&P WCI on any S&P WCI Business Day that does not occur during a Roll Period is the following:

$$TDW_d = \sum_c (CPW_d^c * DCRP_d^c * SpotFX_d^c)$$

where:

- c = the Designated Contract
- d = the S&P WCI Business Day on which the calculation is made
- $DCRP$ = the Daily Contract Reference Price
- $SpotFX$ = US\$ exchange rate

The Total Dollar Weight, which forms the basis for the calculation of the Normalizing Constant, is equal to the sum of the Dollar Weights of all Designated Contracts. The Dollar Weight of each Designated Contract is, in turn, calculated by multiplying the appropriate CPW by the applicable US\$ Daily Contract Reference Price (DCRP) on the day on which the calculation is made. Accordingly, the formula set forth above can generally be used to calculate the Total Dollar Weight. However, during a Roll Period, as described in section VII.2 of this methodology, the S&P WCI is calculated on the basis of the Daily Contract Reference Prices of the First Nearby Contract Expiration and the Roll Contract Expiration of each Designated Contract, reflecting the fact that the S&P WCI is being rolled from one Contract Expiration to the next.

As a result, the calculation of the Total Dollar Weight of the S&P WCI during a Roll Period is adjusted to reflect the fact that different Daily Contract Reference Prices are used for each Designated Contract (e.g., the respective Daily Contract Reference Prices of the First Nearby Contract Expiration and the Roll Contract Expiration). The formula for calculation of the Total Dollar Weight during a Roll Period (other than a January Roll Period or any other Roll Period in which a re-weighting is implemented) is set forth in section VII.3(a). Further, because the roll implemented in January (and in any other Roll Period in which a re-weighting is implemented) involves changes not only in the Contract Roll Weights but also the CPWs, a special formula is needed for calculation of the Total Dollar Weight during such Roll Periods. This formula is set forth in section VII.3(b).

VI.3 Calculation of the Normalizing Constant

VI.3(a) The Total Dollar Weight Ratio. The Total Dollar Weight Ratio is calculated in accordance with the following formula:

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

where:

c = the Designated Contract

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

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

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

$DCRP$ = the Daily Contract Reference Price

$SpotFX$ = US\$ exchange rate

VI.3(b) The Normalizing Constant. With respect to a given S&P WCI Period, the Normalizing Constant (NC_{new}) is calculated on the last S&P WCI Business Day of the previous S&P WCI Period and is equal to the product of (i) the Normalizing Constant for the S&P WCI Period ending on such day (NC_{old}) multiplied by (ii) 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:

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

VII. Calculation of the S&P WCI and Related Indices

VII.1 Overview of the Calculation Process

The S&P WCI is designed as a U.S. Dollar-denominated index, even though it consists of contracts from various international exchanges, which are traded in six different currencies (Canadian Dollar, Euro, Japanese Yen, Malaysia Ringgit, Pound Sterling and US Dollar). Thus, the first step in calculating the S&P WCI and related indices is to convert futures prices from local currencies into the U.S. Dollar.

Because the S&P WCI is designed as a “tradable” index that can be used to replicate actual commodity market performance, the calculation of the S&P WCI takes into account the fact that a person holding positions in the First Nearby Contract Expiration of each Designated Contract would need to “roll” such positions forward as they approach settlement or delivery. For this reason, the methodology for calculating the S&P WCI includes a “rolling” procedure designed to replicate the rolling of actual positions in the Designated Contracts. Moreover, because the rolling of actual positions in a Designated Contract on a single day could be difficult to implement or, if completed on a single day, could have an adverse impact on the market, such rolling would most likely take place over a period of several days. The rolling of the S&P WCI into new Designated Contract Expirations (Roll Contract Expirations), therefore, similarly takes place over periods of several days, which constitute the Roll Periods. The calculation of the S&P WCI, consequently, takes into account price levels of the First Nearby Contract Expiration on each S&P WCI Commodity and, during the Roll Periods, price levels of the Roll Contract Expirations as well. Once the Roll Period has been completed, the Roll Contract Expiration becomes the First Nearby Contract Expiration.

Since the S&P WCI represents an uncollateralized investment in a portfolio of foreign denominated futures contracts, we need to capture the price changes in the underlying futures contracts, as well as a way to track the FX exposure in the index. It is relatively straightforward to track the price changes in the futures contracts. However, for the FX exposure, we need to turn to an FX tracking portfolio since the futures themselves do not provide such information, as their prices are reflected in local currencies only. In order to keep the US\$-denominated S&P WCI on an uncollateralized basis, the investors who want to replicate the commodity returns in an index-style investment need to borrow US\$ to buy the local currencies associated with the underlying futures contracts, thereby earning the local interest rates on their local spot currency positions, and need to pay US\$ rates on the cash that they have borrowed, in short incurring a currency carry. Thus, the excess return of S&P WCI consists of the returns from the underlying futures contracts, the FX exposure, and the Daily Currency Carry Adjustment.

The Daily Currency Carry Adjustment (DCCA) should not be confused with hedging currency exposure. The S&P WCI remains an unhedged index. DCCA is the natural consequence of the tracking mechanism that needs to be put in place in order to reflect the spot FX changes required by index investors who want to fully replicate the commodity index returns.

In contrast to the S&P WCI, the S&P WCI ER represents the return of a portfolio 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 WCI ER is, therefore, calculated on the basis of the Contract Daily Return together with the Daily Currency Carry Adjustment.

The S&P WCI TR reflects the performance of a “Total Return” investment in commodities — Contract Daily Return, together with the Daily Currency Carry Adjustment, plus the daily interest on the funds hypothetically committed to the investment.

VII.2 Calculation of the S&P WCI

VII.2(a) Daily Calculation of the S&P WCI. The value of the S&P WCI on each S&P WCI Business Day is equal to the Total Dollar Weight of the S&P WCI divided by the Normalizing Constant. The value of the S&P WCI is calculated on each S&P WCI 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 WCI Settlement Time. The Daily Contract Reference Price for each First Nearby Contract Expiration or Roll Contract Expiration used in calculating the S&P WCI is determined in accordance with the procedure set forth in section VII.2(b). The S&P WCI is indexed to a value of 100 on December 30, 1999.

The S&P WCI is calculated based on six spot currency exchange rates, depending on the local currency involved for the Designated Contract.

$$TDW_d = \sum_c (CPW_d^c * DCRP_d^c * SpotFX_d^c)$$

where:

c = the Designated Contract

d = the S&P WCI Business Day

TDW_d = Total Dollar Weight

CPW_d^c = Contract Production Weight

$DCRP_d^c$ = Daily Contract Reference Price

$SpotFX_d^c$ = US\$/Currency Spot FX rate

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

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

The S&P WCI reflects only the prices of the First Nearby Contract Expirations and, during a Roll Period, the Roll Contract Expirations on each S&P WCI Business Day. The value of the S&P WCI, therefore, is calculated solely on the basis of 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 of the S&P WCI. The Total Dollar Weight of the S&P WCI is, then, divided by the Normalizing Constant to assure continuity of the S&P WCI.

VII.2(b) Determination of Daily Contract Reference Prices. The Daily Contract Reference Prices used in performing the calculations described in any of the provisions of this methodology are the most recent Daily Contract Reference Prices of the First Nearby Contract Expirations or Roll Contract Expirations as made available by the relevant Trading Facility to its members or participants (and S&P Dow Jones Indices) as of the S&P WCI Settlement Time on the S&P WCI Business Day on which the calculation is made, subject to the following:

If the relevant Trading Facility fails to make available a Daily Contract Reference Price on a day that is a Contract Business Day, or, in the reasonable judgment of S&P Dow Jones Indices, the available Daily Contract Reference Price reflects a manifest error, the relevant calculation is delayed until such time as such Price is made available or corrected. If a Daily Contract Reference Price has not been made available or the error has not been corrected, by the relevant Trading Facility by 04:00 PM, Eastern Time, S&P Dow Jones Indices may, if it deems such action to be appropriate under the circumstances, determine the appropriate Daily Contract Reference Price for the relevant Designated Contract in its reasonable judgment for purposes of calculating the S&P WCI. In that event, S&P Dow Jones Indices will disclose the basis for its determination of such Daily Contract Reference Price.

- i. If any S&P WCI Business Day is not a Contract Business Day with respect to any Designated Contract Expiration, then the calculations will be made on the basis of the most recently available Daily Contract Reference Price for the First Nearby Contract Expiration or Roll Contract Expiration on the most recent Contract Business Day, regardless of whether such Contract Business Day is also a S&P WCI Business Day.
- ii. Notwithstanding the foregoing provisions of this section, if the Daily Contract Reference Price for any Contract Expiration on any S&P WCI Business Day is corrected or finally made available by the relevant Trading Facility sufficiently early on the next S&P WCI Business Day to enable S&P Dow Jones Indices to recalculate the S&P WCI, then the value of the S&P WCI for such S&P WCI Business Day will be recalculated based on such Daily Contract Reference Price.
- iii. A Daily Contract Reference Price determined in accordance with the procedure set forth in this section will be used in calculating the S&P WCI regardless of whether such Price is a Limit Price.

In the event that a contract price is available but the FX Spot Rate is not for the current day, the current day's contract price and the most recently available FX Spot Rate is used.

VII.2(c) Contract Roll Weights and Roll Contract Expirations. In calculating the Total Dollar Weight of the S&P WCI during a Roll Period, the Contract Roll Weights of the First Nearby Contract Expiration and the Roll Contract Expiration of each S&P WCI 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, respectively, subject to the provisions of section VII.2(d).

This section specifies the procedures for rolling the First Nearby Contract Expiration of each Designated Contract into the appropriate Roll Contract Expiration. The roll is essentially implemented by adjusting the Contract Roll Weights of each of the First Nearby Contract Expiration and the Roll Contract Expiration, on each day of the Roll Period, in a manner that shifts the calculation of the S&P WCI by a *pro rata* amount per day from the First Nearby Contract Expiration to the Roll Contract Expiration for each Designated Contract. The roll is reflected in the modified procedures for determining the Total Dollar Weight of the S&P WCI during a Roll Period (sections VII.3(a) and VI.3(b)).

VII.2(d) Adjustment of Roll Period. On any S&P WCI Business Day, the occurrence of any of the following circumstances will result in an adjustment of a Roll Period in accordance with the procedure set forth in this section:

- i. if such S&P WCI Business Day is not a Contract Business Day with respect to any First Nearby Contract Expiration or Roll Contract Expiration;
- ii. the applicable Daily Contract Reference Price of any such Contract Expiration on such S&P WCI Business Day is a Limit Price;
- iii. in the reasonable judgment of S&P Dow Jones Indices, the Daily Contract Reference Price published by a Trading Facility for a particular Designated Contract Expiration, reflects manifest error and such error is not corrected by the S&P WCI Settlement Time, or the Trading Facility for any reason fails to publish a Daily Contract Reference Price for such Contract Expiration by 04:00 PM, Eastern Time. If the day is otherwise a Contract Business Day and the circumstances described in clauses (ii) and (iv) of this section do not exist with respect to such Contract Expiration on the relevant day, S&P Dow Jones Indices may, if it deems such action to be appropriate under the circumstances, determine the appropriate Daily Contract Reference Price for the relevant Designated Contract in its reasonable judgment and determine the rolling of the S&P WCI based on such Daily Contract Reference Price. S&P Dow Jones Indices will disclose the basis for its determination of such Daily Contract Reference Price. If the Trading Facility makes available a Daily Contract Reference Price or corrected Daily Contract Reference Price for such Contract Expiration prior to the opening of trading in such Contract Expiration on the next succeeding Contract Business Day, then the rolling of the portion of the S&P WCI implemented on the prior S&P WCI Business Day will be revised based on such Daily Contract Reference Price; or
- iv. trading in the relevant Contract Expiration for such S&P WCI Business Day is terminated prior to the time at which, as of the opening of trading on such Day (as defined under the rules or policies (if any) of the relevant Trading Facility), trading in such Contract Expiration was scheduled to close, and trading in such Contract Expiration does not resume at least 10 minutes prior to and continue until the scheduled closing time (or the rescheduled closing time if such closing time was rescheduled as a result of the termination).
- v. the WM/Reuters' exchange rates are not available due to currency holidays.

In any such event, the portion of the roll that would otherwise have taken place on such S&P WCI Business Day will take place on the next Contract Business Day (provided that such Day is also a S&P WCI Business Day) on which none of the circumstances identified in this section exist.

If on any day during a Roll Period the Daily Contract Reference Price of any First Nearby Contract Expiration or Roll Contract Expiration is a Limit Price, no Daily Contract Reference Price is available, or trading in the relevant Designated Contract is terminated earlier than scheduled (and does not resume within the specified time period), the portion of the roll that would otherwise have taken place on that day will be deferred until the next day on which such circumstances do not exist. This limitation is based on the fact that, under the circumstances described in this section, it would be difficult or impossible to liquidate and/or establish actual positions in the market and to perform the roll. Delaying the rolling of the S&P WCI, therefore, serves to replicate the steps that would need to be taken in rolling actual market positions.

Under this procedure, if any of the enumerated circumstances exists on the first day of the Roll Period with respect to a First Nearby Contract Expiration or a Roll Contract Expiration, then no portion of the roll will be performed and 40% of the roll will be implemented on the next S&P WCI Business Day. If such circumstances also exist on the second S&P WCI Business Day of the Roll Period, then 60% of the roll will be performed on the third day, and so forth. If such circumstances exist throughout the five S&P WCI Business Days initially designated as the Roll Period, then the entire roll will be performed on the next succeeding S&P WCI Business Day on which none of these circumstances exist. This roll procedure also applies to the rolling of the S&P WCI into the new CPWs and Normalizing Constant during the January

Roll Period, or during any other Roll Period in which a re-weighting of the S&P WCI is effected, as set forth in section VII.3(b).

The only exception to the foregoing is that if the relevant Trading Facility makes available a Daily Contract Reference Price that reflects manifest error, and such error is not corrected by the S&P WCI Settlement Time, or if the Trading Facility fails to make available any Daily Contract Reference Price by 4:00 PM, Eastern Time, on a day on which trading otherwise occurred (and none of the other conditions specified in section VII.2(d) exist), S&P Dow Jones Indices may, if it deems such action appropriate under the circumstances, determine the Daily Contract Reference Price to be used in implementing that day's roll. In such instances, S&P Dow Jones Indices will disclose the basis for its determination. If the Trading Facility, then, makes available a Daily Contract Reference Price or a corrected Daily Contract Reference Price prior to the opening of trading on the next Contract Business Day, S&P Dow Jones Indices will revise the calculation accordingly. This provision is intended to address the unlikely situation in which trading has taken place on or through a Trading Facility during the trading day, and market participants may, therefore, have rolled actual positions, but the Trading Facility, due to communications or equipment failures or other problems, publishes an erroneous Daily Contract Reference Price or fails to publish a Daily Contract Reference Price by 04:00 PM, Eastern Time.

VII.3 Calculation of the S&P WCI ER

VII.3(a) Calculation of TDW During a Roll Period. The formula for calculating the Total Dollar Weight of the S&P WCI on any S&P WCI 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 WCI is effected) is the following:

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

where

- c = each Designated Contract
- d = the S&P WCI 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
- $SpotFX$ = US\$ exchange rate

On any S&P WCI Business Day that does not occur during a Roll Period, the Total Dollar Weight of the S&P WCI is calculated in accordance with the procedure set forth in section VI.2. During a Roll Period, however, the Total Dollar Weight reflects the fact that the S&P WCI is being rolled from one Contract Expiration to the next. As a result, the formula for Total Dollar Weight during a Roll Period must be adjusted to reflect the fact that different Daily Contract Reference Prices are used for each Designated Contract (i.e., the respective Daily Contract Reference Prices of the First Nearby Contract Expiration and the Roll Contract Expiration).

VII.3(b) Calculation of TDW in Connection with Changes in the Composition of the S&P WCI. The CPWs and NC for a given S&P WCI Period are implemented during the Roll Period of the calendar month in which such S&P WCI Period begins. In calculating the value of the S&P WCI on each day of such Roll Period, (i) the Contract Roll Weight of the First Nearby Contract Expiration of each Designated Contract, as determined and adjusted in prior sections, 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 WCI Period, and divided by the NC for the prior S&P WCI Period, and (ii) the Contract Roll Weight of the Roll Contract Expiration of each Designated Contract, as determined and adjusted in prior sections, 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 WCI Period and divided by the NC for such new S&P WCI Period.

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

$$TDW_d = \frac{NC_{new}}{NC_{old}} * \left[\sum_c (CPW1^c * CRW1_d^c * DCRP1_d^c * SpotFX_d^c) + \sum_c (CPW2^c * CRW2_d^c * DCRP2_d^c * SpotFX_d^c) \right]$$

where

- c = each Designated Contract
- d = the S&P WCI 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
- $SpotFX$ = US\$ exchange rate

During the January Roll Period, and during any other Roll Period in which a re-weighting of the S&P WCI is implemented, the S&P WCI 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 WCI Business Day of the month, 80% of the S&P WCI is calculated based on the CPWs and NC for the prior S&P WCI Period and 20% of the S&P WCI is calculated based on the CPWs and NC for the S&P WCI Period beginning on such Day. On the sixth (6th) through ninth (9th) S&P WCI Business Days, the percentages are 60/40, 40/60, 20/80 and 0/100, respectively. On the ninth (9th) S&P WCI Business Day, the roll is completed, unless the Roll Period is extended as a result of the occurrence of one of the events specified in section VII.2(d).

In order to reflect this roll into the new CPWs and Normalizing Constant, the formula for the Total Dollar Weight of the S&P WCI requires the additional adjustments detailed above. Specifically, because the CPWs of the First Nearby Contract Expiration and the Roll Contract Expiration will be different, $CPW1$ and $CPW2$, as set forth above, must enter the calculation. In addition, the result of this calculation must be multiplied by the Total Dollar Weight Ratio, which reflects the change in the Total Dollar Weight resulting from the shift to new CPWs and, therefore, when multiplied by $CRW1$ and $CRW2$, rolls the S&P WCI into the new CPWs and the new Normalizing Constant.

VII.3(c) Calculation of the Contract Daily Return. On any S&P WCI Business Day, the Contract Daily Return is equal to the ratio obtained by dividing the Total Dollar Weight Obtained (TDWO) on such Day by the Total Dollar Weight Invested (TDWI) on the immediately preceding S&P WCI 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 principal component of the calculation of the S&P WCI ER is the determination of the Contract Daily Return (CDR) for a given S&P WCI Business Day. The CDR is calculated by reference to the Total Dollar Weight of the S&P WCI. The Contract Daily Return is generally defined as the percentage change in the Total Dollar Weight of the S&P WCI from one S&P WCI Business Day to the next. The Contract Daily Return, therefore, 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 WCI a tradable index.

As set forth in prior sections, the formula for calculation of the Total Dollar Weight of the S&P WCI on those days that occur during a Roll Period differs from the formula used on other days. In addition, during the January Roll Period, or any other Roll Period in which a re-weighting of the S&P WCI is implemented, a further adjustment to this formula must be made.

Once the appropriate formula for calculating the Total Dollar Weight of the S&P WCI is determined, the Total Dollar Weight Invested, which reflects a hypothetical investment in the S&P WCI based on the CPWs, CRWs and Daily Contract Reference Prices on the immediately preceding S&P WCI Business Day, and the Total Dollar Weight Obtained, which reflects the return on the hypothetical investment and is calculated based on the CPWs and CRWs in effect on the immediately preceding day but on the Daily Contract Reference Prices used to calculate the S&P WCI on the current day, can be determined. The Contract Daily Return can, then, be 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 immediately preceding day.

VII.3(d) Calculation of Daily Currency Carry Adjustment (DCCA). The Daily Currency Carry Adjustment of the S&P WCI is a function of the individual currency carry adjustments for each contract, c , and the interest rate differential between the Local Currency, $curr$, that the contract is denominated in and the US Dollar rates.

Let:

$SpotFX_{curr}^c$ = FX Spot Rate of $curr$ for contract c , expressed in US\$ per unit Local Currency

$FwdFX_{curr}^c$ = 1-month FX Forward Rate of $curr$ for contract c

$SpotDate_{curr}$ = Date corresponding to FX Spot

$FwdDate_{curr}$ = Forward date corresponding to FX Forward

$$DayCount_{curr} = \frac{FwdDate_{curr} - SpotDate_{curr}}{365}$$

$$RateDifferential_{curr} = -\frac{\ln\left(\frac{FwdFX_{curr}^c}{SpotFX_{curr}^c}\right)}{DayCount_{curr}}$$

$NumCarryDays$ = Number of Days between the immediately preceding S&P WCI Business Day and the current S&P WCI Business Day

$$CurrCarry_{curr} = \exp\left(RateDifferential_{curr} \times \frac{NumCarryDays}{365}\right) - 1$$

All contracts in the same Local Currency are then grouped together:

$$CurrPercentWeight_d^{curr} = \frac{TDW_d^{curr}}{TDW_d}$$

where:

TDW_d^{curr} = TDW of contracts denominated in Currency *curr* on day *d*

TDW_d = TDW of all contracts on day *d*

Finally, the Daily Currency Carry Adjustment is given by:

$$DCCA_d = \sum_{curr} (CurrPercentWeight_{d-1}^{curr} * CurrCarry_{curr})$$

Note: We observe weights and rate differentials on day *d-1* for the Currency Carry calculation that gets credited into the Index on day *d*. Theoretically, the currency carry of US\$ is 0.

VII.3(e) Daily Calculation of the S&P WCI ER. On any S&P WCI Business Day, the value of the S&P WCI ER is equal to the product of (i) the S&P WCI ER on the immediately preceding S&P WCI Business Day multiplied by (ii) one plus the Contract Daily Return on the S&P WCI Business Day on which the calculation is made, offset by the Daily Currency Carry Adjustment (DCCA). The value of the S&P WCI ER is indexed to a base value of 100 on December 30, 1999. The result of the foregoing calculation is then rounded to seven digits of precision.

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

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

The S&P WCI ER is calculated on a cumulative basis beginning with the first day for which the S&P WCI ER was calculated, which was December 30, 1999. The value of the S&P WCI ER on any S&P WCI Business Day, therefore, can be determined by reference to the value on the immediately preceding S&P WCI Business Day, the Contract Daily Return on the day of calculation, and any currency carry adjustment.

VII.4 Calculation of the S&P WCI TR

VII.4(a) The Treasury Bill Return. On any given calendar day, the Treasury Bill Return is equal to:

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

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

VII.4(b) Daily Calculation of the S&P WCI TR. On any S&P WCI Business Day, the value of the S&P WCI TR is equal to the product of (i) the S&P WCI TR on the immediately preceding S&P WCI Business Day multiplied by (ii) one plus the sum of the Contract Daily Return, offset by the currency carry adjustment, plus the Treasury Bill Return on the S&P WCI Business Day on which the calculation is made multiplied by (iii) one plus the Treasury Bill Return for each non S&P WCI Business Day since the immediately preceding S&P WCI Business Day. The result of the foregoing calculation is then rounded to seven digits of precision.

In formulaic terms:

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

where *days* is the number of non S&P WCI Business Days since the immediately preceding S&P WCI Business Day. The S&P WCI TR is set equal to 100 on December 30, 1999.

VII.5 Calculation of the Sub-Indices

Each of the sub-indices reflecting portions of the S&P WCI, the S&P WCI ER, or the S&P WCI TR is calculated in the same manner as the respective index, except that: (i) the Daily Contract Reference Prices, CPWs and Contract Roll Weights used in performing such calculations are limited to those of the S&P WCI Commodities included in the relevant sub-index; and (ii) each sub-index has a separate Normalizing Constant, which is calculated in accordance with the procedures set forth in section VI of this methodology. The Dollar Weights and Daily Contract Reference Prices used in calculating such Normalizing Constant are limited to those of the Designated Contracts included in the relevant sub-index.

VIII. Index Governance

VIII.1 Index Governance

S&P Dow Jones Indices has established a Commodity Index Committee consisting of full-time employees of S&P Dow Jones Indices; with one member serving as the chair. The Commodity Index Committee is responsible for the S&P WCI, the rules that govern the Index and the annual rebalancing of the Index.

S&P Dow Jones Indices has also established an S&P Commodity Advisory Panel consisting of a number of industry and investment leaders, drawn from organizations that are active participants or observers of the global commodities markets. This group meets annually, or more often at the request of the Commodity Index Committee, to discuss developments in the markets and possible adjustments or changes to the S&P WCI. Its role is advisory; there are no votes and it cannot bind or require the Commodity Index Committee to make any changes to the S&P WCI. S&P Dow Jones Indices values the advice provided by the Commodity Advisory Panel.

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.

VIII.2 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 WCI. The Panel meets on an annual basis and at other times at the request of the Commodity Index Committee. The principal purpose of the Panel is to advise the Commodity Index Committee with respect to, among other things, the calculation of the S&P WCI, and the effectiveness of the S&P WCI as a measure of the international commodity futures market performance and the need for changes in the composition or methodology of the S&P WCI. The Panel acts solely in an advisory and consultative capacity; the Commodity Index Committee makes all decisions with respect to the composition, calculation and operation of the S&P WCI. Certain of the members of the Panel may be affiliated with clients of S&P Dow Jones Indices. Also, certain of the members of the Panel may be affiliated with entities which, from time to time, may have investments linked to the S&P WCI, either through transactions in the Contracts included in the S&P WCI, futures contracts on the S&P WCI or derivative products linked to the S&P WCI.

Appendix A: Contracts Included in the S&P WCI for 2018

As required by the S&P WCI Index Methodology, S&P Dow Jones Indices has performed the annual calculation to determine the initial CPWs for the 2018 S&P WCI based on trading volumes from September 2016 to August 2017. The audited results of the calculations are presented in this Appendix.

Contracts included in the 2018 S&P WCI

Table 1 (below) identifies the Contracts included in the 2018 S&P WCI as well as the Contract Production Weights and Designated Contract Expirations for each such Contract in 2018. The Reference Percentage Dollar Weights were calculated on the basis of the Average Contract Reference Prices for the 2018 Annual Calculation Period; actual Percentage Dollar Weights on any given S&P WCI Business Day will vary depending on actual 2018 Daily Contract Prices.

Commodity (Contract)	Ticker ⁽¹⁾	2018 CPW	2018 ACRP (\$)	Unit	2018 RPDW	TDVT (USD bn)	TVM	Designated Contract Expirations at Month Begin ⁽²⁾												
								1	2	3	4	5	6	7	8	9	10	11	12	
Wheat	BL2	690.4234	186.6827099	M ton	0.057439031	83.1668019	144.8	H	H	K	K	Z	Z	Z	Z	Z	Z	Z	H*	
Rapeseed	COM	36.60824	427.1377813	M ton	0.00696842	59.56180077	854.7	G	K	K	K	Q	Q	Q	X	X	X	X	G*	G*
Robusta Coffee- 10 Tonne	LRC	8.67728	2095.666667	M ton	0.008103886	95.8687236	1183	H	H	K	K	N	N	U	U	X	X	F*	F*	
White Sugar	LSU	168.2966	487.8583333	M ton	0.036589509	65.81257703	179.9	H	K	K	Q	Q	Q	V	V	H*	H*	H*	H*	
No. 7 Cocoa	LCC	4.499853	2195.882692	M ton	0.004403469	176.5598381	4009.6	H	H	K	K	N	N	U	U	Z	Z	Z	H*	
Crude Palm Oil (FCPO)	1FCPO	51.92662	631.6489298	M ton	0.014616834	185.5684913	1269.6	H	J	K	M	N	Q	U	V	X	Z	F*	G*	
Canola	RS	29.97582	382.2726411	M ton	0.005106599	43.64808894	854.7	H	H	K	K	N	N	X	X	X	X	F*	F*	
ICE UK Natural Gas Monthly (NBP) Winter ⁽³⁾	NGLNM	8512.895	0.572113373	Therms	0.004340871	189.3809686	4362.7	V	V	V	V	V	V	X	X	Z	F*	G*	H*	
ICE UK Natural Gas Monthly (NBP) Summer ⁽³⁾	NGLNM	8512.895	0.572113373	Therms	0.004340871	189.3809686	4362.7	J	K	M	N	Q	U	J*	J*	J*	J*	J*	J*	
High Grade Primary Aluminum	MAL	52.096	1856.854167	M ton	0.043109172	2407.586853	5584.9	G	H	J	K	M	N	Q	U	V	X	Z	F*	
Copper - Grade A	MCU	20.44	5776.270833	M ton	0.052615772	4930.637924	9371	G	H	J	K	M	N	Q	U	V	X	Z	F*	
Standard Lead	MPB	10.322	2239.125	M ton	0.010299822	569.5517279	5529.7	G	H	J	K	M	N	Q	U	V	X	Z	F*	
Primary Nickel	MNI	1.784	10234.89583	M ton	0.008137028	1227.979813	15091.3	G	H	J	K	M	N	Q	U	V	X	Z	F*	
Special High Grade Zinc	MZN	12.86	2704.125	M ton	0.015497271	1892.13501	12209.5	G	H	J	K	M	N	Q	U	V	X	Z	F*	
Tin	MSN	0.3492	20365.83333	M ton	0.003169304	129.1224382	4074.2	G	H	J	K	M	N	Q	U	V	X	Z	F*	
Oil (Gasoil)	LGO	671.2194	469.5416667	M ton	0.140451424	3392.4045	2415.4	G	H	J	K	M	N	Q	U	V	X	Z	F*	
Oil (Brent Crude Oil)	LCO	21870.34	52.52	Barrels	0.511879528	12363.72296	2415.4	H	J	K	M	N	Q	U	V	X	Z	F*	G*	
Rubber	JRU	26712.2	2.051679859	Kg	0.024423436	24.55805396	100.6	K	M	N	Q	U	V	X	Z	F*	G*	H*	J*	
Gasoline	JGL	3.259293	439.2411451	Kiloliters	0.00063799	15.40974336	2415.4	M	N	Q	U	V	X	Z	F*	G*	H*	J*	K*	
Gold	JAU	2790	39.98373237	Grams	0.049713581	260.1990564	523.4	V	Z	Z	G*	G*	J*	J*	M*	M*	Q*	Q*	V*	
Platinum	JPL	181.4	30.88892069	Grams	0.002497052	44.34045876	1775.7	V	Z	Z	G*	G*	J*	J*	M*	M*	Q*	Q*	V*	

(1) Tickers are Reuters Tickers.

(2) Future months included in the S&P WCI at the beginning of each calendar month, starting with January 2018. Month letter codes are shown in Table 2.

(3) Due to heavy seasonality in natural gas demand and limited storage capacity, the summer and winter contracts effective trade like separate commodities.

(*) Denotes expiration in the following year

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

Composition of S&P WCI Sub-Indices

Table 3 (below) demonstrates the effects of re-weighting on the principal S&P WCI Sub-Indices. The Reference Percentage Dollar Weights were calculated on the basis of Average Contract Reference Prices for the 2017 Annual Calculation Period; actual Daily Percentage Dollar Weights will vary, depending on actual 2017 Daily Contract Prices.

Sub-Index	2018 RPDW	Included Commodities
Energy	65.73%	Crude Oil (and supporting contracts) and Natural Gas
Non-Energy	34.27%	All commodities not included in Energy Sub-Index
Petroleum	65.30%	Crude Oil (and supporting contracts)
Agricultural	15.77%	Wheat, Coffee, Sugar, Cocoa, Crude Palm Oil, Canola, Rapeseed and Rubber
Industrial Metals	13.28%	Aluminum, Copper, Lead, Nickel, Tin and Zinc
Precious Metals	5.22%	Gold and Platinum

WPAs and Conversion Factors

The WPAs, relevant units and conversion factors used for the Designated Contracts, which are effective during the first Roll Period for the S&P WCI year 2018, are shown below.

Commodity	WPQ Units	2018 WPA
ICE UK Natural Gas Monthly (NBP)	Petajoules	1,796
Canola	M ton	66,584,058
Crude Palm Oil (FCPO)	M ton	51,926,624
No. 7 Cocoa	M ton	4,499,853
Rapeseed	M ton	66,584,058
Robusta Coffee- 10 Tonne	M ton	8,677,280
Wheat	M ton	690,423,419
White Sugar	M ton	168,296,600
Copper - Grade A	M ton	20,440,000
Primary Nickel	M ton	1,784,000
Special High Grade Zinc	M ton	12,860,000
Standard Lead	M ton	10,322,000
Tin	M ton	349,200
Gold	Kg	2,790,000
Platinum	Kg	181,400
Gasoline	1000 M ton	3,661,383,369
Oil (Brent Crude Oil)	1000 M ton	3,661,383,369
Oil (Gasoil)	1000 M ton	3,661,383,369
Rubber	1000 M ton	26,712
High Grade Primary Aluminum	1000 M ton	52,096,000

Contract Units and Conversion Factors for 2018 S&P WCI Contracts

Contract	Contract	Units	Conversion Factor between Contract Units and WPQ Units
Wheat (Milling)	50	Metric ton	1
Robusta Coffee	10	Metric ton	1
White Sugar	50	Metric ton	1
Cocoa	10	Metric ton	1
Crude Palm Oil (FCPO)	25	Metric ton	1
Canola	20	Metric ton	1
Rapeseed	50	Metric ton	1
Rubber	5,000	Kilograms	1,000,000
ICE Brent Crude Oil	1,000	Barrels	7.32
ICE Gasoil Futures (Monthly)	100	Metric ton	1
Gasoline	50	Kiloliters	1.35627
ICE UK Natural Gas Monthly (NBP)	30,000	<u>Therms</u>	9,478,171.204
High Grade Primary Aluminum	25	Metric ton	1
Copper - Grade A	25	Metric ton	1
Standard Lead	25	Metric ton	1
Primary Nickel	6	Metric ton	1
Special High Grade Zinc	25	Metric ton	1
Tin	5	Metric ton	1
Gold	1,000	Grams	1,000
Platinum	500	Grams	1,000

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.

Sources for World Production Data

In accordance with the S&P WCI Index Methodology, the WPQ Period for the 2018 S&P WCI is 2010-2014. This is the most recent period for which data was available for all S&P WCI Commodities.

Commodity	Primary Source for Production Data
Wheat	FAOSTAT http://faostat.fao.org/site/567/default.aspx#ancor (Commodity: "Wheat", Year 2010-2014)
Coffee	FAOSTAT http://faostat.fao.org/site/567/default.aspx#ancor (Commodity: "Coffee, green", Year 2010-2014)
Sugar	USDA http://www.fas.usda.gov/psdonline/psdQuery.aspx (Commodity: "Sugar, Centrifugal", Year 2010-2014)
Cocoa	FAOSTAT http://faostat.fao.org/site/567/default.aspx#ancor (Commodity: "Cocoa beans", Year 2010-2014)
Palm Oil	FAOSTAT http://faostat.fao.org/site/636/DesktopDefault.aspx?PageID=636#ancor (Commodity: "Palm Oil", Year 2010-2014)
Rapeseed	FAOSTAT http://faostat.fao.org/site/567/DesktopDefault.aspx?PageID=567#ancor (Commodity: "Rapeseed", Year 2010-2014)
Rubber	http://www.rubberstudy.com
Crude Oil	UN Data http://data.un.org/Data.aspx?q=crude+petroleum&d=ICS&f=cmlD%3a12010-0
Natural Gas	UN Data http://data.un.org/Data.aspx?q=natural+gas+&d=ICS&f=cmlD%3a12020-1 (UK Only)
Aluminum	USGS - MYB 2014 http://minerals.usgs.gov/minerals/pubs/commodity/aluminum/ (Table 13: Aluminum, Primary: World Production By Country)
Copper	USGS - MYB 2014 http://minerals.usgs.gov/minerals/pubs/commodity/copper/ (Table 22: Copper: World Refinery Production By Country)
Lead	USGS - MYB 2014 http://minerals.usgs.gov/minerals/pubs/commodity/lead/ (Table 13: Lead: World Refinery Production By Country)
Nickel	USGS - MYB 2014 http://minerals.usgs.gov/minerals/pubs/commodity/nickel/ (Table 12: Nickel: World Plant Production By Country)
Zinc	USGS - MYB 2014 http://minerals.usgs.gov/minerals/pubs/commodity/zinc/ (Table 10: Zinc: World Smelter Production By Country)
Tin	USGS - MYB 2014 http://minerals.usgs.gov/minerals/pubs/commodity/tin/ (Table 10: Tin: World Smelter Production By Country)
Gold	USGS - MYB 2014 http://minerals.usgs.gov/minerals/pubs/commodity/gold/ (Table 8: Gold: World Mine Production By Country)
Platinum	USGS - MYB 2014 http://minerals.usgs.gov/minerals/pubs/commodity/platinum/ (Table 5: Platinum-Group Metals: World Production By Country)
USGS MYB	<i>Minerals Yearbook</i> , US Department of Interior, US Geological Survey

Appendix B: S&P WCI Capped Component Index

On July 15, 2010, S&P Dow Jones Indices announced the launch of the S&P WCI Capped Component Index. The Index limits constituent weights, providing greater diversification.

The S&P WCI Capped Component Index institutes periodic weight caps on the index constituents of the S&P WCI, providing a version of the Index where the performance is not dominated by relatively heavy-weighted constituents.

At the beginning of each quarter, the S&P WCI Capped Component Index groups the S&P WCI commodities into components based on their similarity. Using the S&P WCI constituents and its corresponding world production data for initial weighting purposes, the highest component is capped at 35%. If necessary, the remaining commodity components are capped at 20%¹. Any excess weight is distributed proportionately among the remaining components. Since petroleum is currently the highest weight of the S&P WCI, the S&P WCI Capped Component Index can also be considered a “light-energy” version of the S&P WCI.

The capping procedure, endeavoring to maintain continuity and proportion to the S&P WCI component weights, follows two rules, in succession:

Rule 1: Only one commodity 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 commodity component’s weight can exceed 20%. Any excess weight is distributed proportionately among the remaining components.

Capping Frequency: Quarterly.

Determination & Implementation Date: The quarterly determination date is the 4th business day in January, April, July and October. The implementation will take place during the 5 day roll period (5th to 9th business days).

Capping excess distribution: Distributed proportionately among the remaining components.

Components: There are 17 components, with two containing more than one commodity based on their similarity. The S&P WCI index and its corresponding world production data are used for initial weighting purposes. The multiple commodity components are as follows:

Petroleum: Brent Crude Oil, Gasoil, and Gasoline.

Rapeseed: Rapeseed and Canola.

¹ 35/20 is a means of identifying a two tiered capping model. It does not connote compliance with any regulatory regime or guideline.

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 WCI 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 WCI components.

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

1. On the business day before each quarterly first roll date, the latest S&P WCI commodity CPWs are multiplied by the commodity prices to determine the S&P WCI 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 WCI weights implied by those prices and the latest S&P WCI CPWs. For example, the January S&P WCI CPWs are multiplied by the commodity prices from 4th business day in January, the last business day before the roll.
6. This 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 WCI.

Appendix C: S&P WCI Tickers

Official Index Name	Bloomberg Ticker, Real Time	Bloomberg Ticker	Reuters RIC
S&P WCI Index	SPWCI	SPWICI	.SPWCI
S&P WCI Index ER	SPWCIP	SPWICIP	.SPWCIP
S&P WCI Index TR	SPWCITR	SPWICITR	.SPWCITR
S&P World Commodity Europe Index	---	SPWIEU	---
S&P World Commodity Europe Index ER	---	SPWIEUP	---
S&P World Commodity Europe Index TR	---	SPWIEUTR	---
S&P World Commodity Asia Index	---	SPWIAS	---
S&P World Commodity Asia Index ER	---	SPWIASP	---
S&P World Commodity Asia Index TR	---	SPWIASTR	---
S&P World Commodity America Index	---	SPWIUS	---
S&P World Commodity America Index ER	---	SPWIUSP	---
S&P World Commodity America Index TR	---	SPWIUSTR	---
S&P World Commodity Agriculture Index	---	SPWIAG	---
S&P World Commodity Agriculture Index ER	---	SPWIAGP	---
S&P World Commodity Agriculture Index TR	---	SPWIAGTR	---
S&P World Commodity Energy Index	---	SPWIEN	---
S&P World Commodity Energy Index ER	---	SPWIENP	---
S&P World Commodity Energy Index TR	---	SPWIENR	---
S&P World Commodity Metals Index	---	SPWIAM	---
S&P World Commodity Metals Index ER	---	SPWIAMP	---
S&P World Commodity Metals Index TR	---	SPWIAMTR	---
S&P World Commodity Grains Index	---	SPWIGR	---
S&P World Commodity Grains Index ER	---	SPWIGRP	---
S&P World Commodity Grains Index TR	---	SPWIGRTR	---
S&P World Commodity Softs Index	---	SPWISF	---
S&P World Commodity Softs Index ER	---	SPWISFP	---
S&P World Commodity Softs Index TR	---	SPWISFTR	---
S&P World Commodity Oil Seeds Index	---	SPWISD	---
S&P World Commodity Oil Seeds Index ER	---	SPWISDP	---
S&P World Commodity Oil Seeds Index TR	---	SPWISDTR	---
S&P World Commodity Agro Raw Materials Index	---	SPWIRM	---
S&P World Commodity Agro Raw Materials Index ER	---	SPWIRMP	---
S&P World Commodity Agro Raw Materials Index TR	---	SPWIRMTR	---
S&P World Commodity Petroleum Index	---	SPWIPT	---
S&P World Commodity Petroleum Index ER	---	SPWIPTP	---
S&P World Commodity Petroleum Index TR	---	SPWIPTTR	---
S&P World Commodity Natural Gas Index ER	---	SPWINGP	---
S&P World Commodity Natural Gas Index TR	---	SPWINGTR	---
S&P World Commodity Industrial Metals Index	---	SPWIIN	---
S&P World Commodity Industrial Metals Index ER	---	SPWIINP	---
S&P World Commodity Industrial Metals Index TR	---	SPWIINTR	---

Official Index Name	Bloomberg Ticker Real Time	Bloomberg Ticker	Reuters RIC
S&P World Commodity Precious Metals Index	---	SPWIPM	---
S&P World Commodity Precious Metals Index ER	---	SPWIPMP	---
S&P World Commodity Precious Metals Index TR	---	SPWIPMTR	---
S&P World Commodity Capped Component 35/20 Index	---	SPWIUC	---
S&P World Commodity Capped Component 35/20 Index ER	---	SPWIUCP	---
S&P World Commodity Capped Component 35/20 Index TR	---	SPWIUCTR	---
S&P World Commodity High Grade Primary Aluminum Index	---	SPWIIA	---
S&P World Commodity High Grade Primary Aluminum Index ER	---	SPWIIAP	---
S&P World Commodity High Grade Primary Aluminum Index TR	---	SPWIIATR	---
S&P World Commodity Corn Index	---	SPWICN	---
S&P World Commodity Corn Index ER	---	SPWICNP	---
S&P World Commodity Corn Index TR	---	SPWICNTR	---
S&P World Commodity Kerosene Index	---	SPWIKE	---
S&P World Commodity Kerosene Index ER	---	SPWIKEP	---
S&P World Commodity Kerosene Index TR	---	SPWIKETR	---
S&P World Commodity Wheat Index	---	SPWIWH	---
S&P World Commodity Wheat Index ER	---	SPWIWHP	---
S&P World Commodity Wheat Index TR	---	SPWIWHTR	---
S&P World Commodity Gold Index	---	SPWIGC	---
S&P World Commodity Gold Index ER	---	SPWIGCP	---
S&P World Commodity Gold Index TR	---	SPWIGCTR	---
S&P World Commodity Platinum Index	---	SPWIPL	---
S&P World Commodity Platinum Index ER	---	SPWIPLP	---
S&P World Commodity Platinum Index TR	---	SPWIPLTR	---
S&P World Commodity Canola Index	---	SPWIRS	---
S&P World Commodity Canola Index ER	---	SPWIRSP	---
S&P World Commodity Canola Index TR	---	SPWIRSTR	---
S&P World Commodity Oil (Brent Crude Oil) Index	---	SPWIBR	---
S&P World Commodity Oil (Brent Crude Oil) Index ER	---	SPWIBRP	---
S&P World Commodity Oil (Brent Crude Oil) Index TR	---	SPWIBRTR	---
S&P World Commodity Oil (Gasoil) Index	---	SPWIGO	---
S&P World Commodity Oil (Gasoil) Index ER	---	SPWIGOP	---
S&P World Commodity Oil (Gasoil) Index TR	---	SPWIGOTR	---
S&P World Commodity Gasoline Index ER	---	SPWIGSP	---
S&P World Commodity Gasoline Index TR	---	SPWIGSTR	---
S&P World Commodity White Sugar Index	---	SPWISB	---
S&P World Commodity White Sugar Index ER	---	SPWISBP	---
S&P World Commodity Copper - Grade A Index	---	SPWIIC	---
S&P World Commodity Copper - Grade A Index ER	---	SPWIICP	---
S&P World Commodity Copper - Grade A Index TR	---	SPWIICTR	---
S&P World Commodity UK Natural Gas (Summer) Index	---	SPWIFS	---
S&P World Commodity UK Natural Gas (Summer) Index ER	---	SPWIFSP	---
S&P World Commodity UK Natural Gas (Summer) Index TR	---	SPWIFSTR	---
S&P World Commodity UK Natural Gas (Winter) Index	---	SPWIFW	---
S&P World Commodity UK Natural Gas (Winter) Index ER	---	SPWIFWP	---
S&P World Commodity UK Natural Gas (Winter) Index TR	---	SPWIFWTR	---
S&P World Commodity Crude Palm Oil (FCPO) Index	---	SPWIKO	---
S&P World Commodity Crude Palm Oil (FCPO) Index ER	---	SPWIKOP	---
S&P World Commodity Crude Palm Oil (FCPO) Index TR	---	SPWIKOTR	---
S&P World Commodity Standard Lead Index	---	SPWIIL	---
S&P World Commodity Standard Lead Index ER	---	SPWIILP	---
S&P World Commodity Standard Lead Index TR	---	SPWIILTR	---

Official Index Name	Bloomberg Ticker Real Time	Bloomberg Ticker	Reuters RIC
S&P World Commodity Primary Nickel Index	---	SPWIIK	---
S&P World Commodity Primary Nickel Index ER	---	SPWIIKP	---
S&P World Commodity Primary Nickel Index TR	---	SPWIIKTR	---
S&P World Commodity Tin Index	---	SPWIIS	---
S&P World Commodity Tin Index ER	---	SPWIISP	---
S&P World Commodity Tin Index TR	---	SPWIISTR	---
S&P World Commodity Rubber Index	---	SPWIRU	---
S&P World Commodity Rubber Index ER	---	SPWIRUP	---
S&P World Commodity Rubber Index TR	---	SPWIRUTR	---
S&P World Commodity Special High Grade Zinc Index	---	SPWIIZ	---
S&P World Commodity Special High Grade Zinc Index ER	---	SPWIIZP	---
S&P World Commodity Special High Grade Zinc Index TR	---	SPWIIZTR	---
S&P World Commodity Rapeseed Index	---	SPWIJ	---
S&P World Commodity Rapeseed Index ER	---	SPWIJJP	---
S&P World Commodity Rapeseed Index TR	---	SPWIJTR	---
S&P World Commodity No. 7 Cocoa Index	---	SPWICC	---
S&P World Commodity No. 7 Cocoa Index ER	---	SPWICCP	---
S&P World Commodity No. 7 Cocoa Index TR	---	SPWICCTR	---
S&P World Commodity Robusta Coffee - 10 Tonne Index	---	SPWIKC	---
S&P World Commodity Robusta Coffee - 10 Tonne Index ER	---	SPWIKCP	---
S&P World Commodity Robusta Coffee - 10 Tonne Index TR	---	SPWIKCTR	---

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