### S&P Dow Jones Indices

A Division of S&P Global

# Dow Jones Commodity Index Methodology

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### Introduction

#### Index Objective and Highlights

The Dow Jones Commodity Index is a broad-market commodity index comprised of liquid commodities from three major sectors: Energy, Agriculture and Livestock, and Metals.

The sectors are equally weighted within the index and rebalance monthly. Individual commodities are weighted by relative liquidity based on the five-year average total dollar value traded (TDVT) annually. As part of the weighting scheme, the Capped Component 32/17 methodology (effective January 2020) is applied monthly to increase diversification.

For information on the roll and contract schedule, please refer to Appendix I.

#### **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' Commodity Index Mathematics Methodology <sup>1</sup>	Commodity Index Mathematics Methodology

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.

<sup>&</sup>lt;sup>1</sup> Generic formulas previously found in this methodology have been moved to the newly created Commodity Index Mathematics Methodology.

# Index Constituents and Weightings

#### **Index Eligibility**

**Liquidity.** Each individual commodity must have a TDVT of at least \$15 billion (\$5 billion for current index commodities) to be eligible for index inclusion.

**Country of Listing.** Commodities must be traded on exchanges in developed countries, as determined according to the S&P Dow Jones Indices Country Classification Methodology and reflected in the S&P Global BMI, S&P/IFCI Index Methodology. Country classification changes, if any, become effective during the index's first rebalancing in January following the effective date in the S&P Developed BMI.

For information on the S&P Developed BMI, please refer to the S&P Global BMI, S&P/IFCI Methodology available at <a href="https://www.spglobal.com/spdji/">www.spglobal.com/spdji/</a>.

**Minimum Weight.** The minimum percentage weight requirement for a commodity to be eligible for index inclusion is 0.25% (0.1% for current index commodities).

#### **Weighting Scheme**

The weighting scheme consists of three steps:

- 1. Weighting the individual commodities by liquidity
- 2. Capping the components
- 3. Equal weighting the sectors

#### Step 1 - Liquidity Weighting

The individual commodities in the Dow Jones Commodity Index are liquidity weighted. The liquidity measure used is the Total Dollar Value Traded (TDVT). A five-year simple moving average of the TDVTs is used to determine the effective TDVT for each of the commodities in the index. The TDVT, for the annual period from September through August, is the sum of the monthly volume of the eligible contracts multiplied by the average contract price for the month multiplied by the size of the contract. The individual TDVTs for each commodity are then compared to obtain the initial weights of each commodities within the same component group are then added up to obtain the initial component weight for that component.

#### Step 2 - Component Capping

There are 19 components, with five containing more than one commodity based on their similarity. The index follows the standard capped component rules (no single component's weight can exceed 32% and no remaining component's weight can exceed 17%). The following table lists the components:

<b>Commodity Contract Code</b>	Commodity Name	Component
CL	WTI Crude Oil	
НО	Heating Oil	
LCO	Brent Crude Oil	Petroleum
RB	RBOB Gasoline	
LGO	Gasoil	
NG	Natural Gas	Natural Gas
W	Chicago Wheat	Wheat
KW	Kansas Wheat	vvneat
С	Corn	Corn
S	Soybeans	
ВО	Soybean Oil	Soybeans
SM	Soybean Meal	
KC	Coffee	Coffee
SB	Sugar	Sugar
CC	Cocoa	Cocoa
СТ	Cotton	Cotton
LC	Live Cattle	Cattle
FC	Feeder Cattle	Cattle
LH	Lean Hogs	Lean Hogs
MAL	Aluminum	Aluminum
MCU	LME Copper	Coppor
HG	NA Copper	Copper
MPB	Lead	Lead
MNI	Nickel	Nickel
MZN	Zinc	Zinc
SI	Silver	Silver
GC	Gold	Gold
PL	Platinum	Platinum

#### Step 3 - Sector Equal Weighting

After the components are capped, the three sectors (Energy, Agriculture and Livestock, and All Metals) are equal-weighted. For each sector, the individual adjusted weights of the commodities in that sector are summed up. This sum is the adjusted sector weight for that sector.

The final weight of each commodity in each of the three designated sectors is defined to be as follows:

$$FinalWeight_{c} = \frac{AdjWeight_{c}}{AdjSectWeight_{i}}$$

where:

$$AdjWeight_c = \frac{CappedWeight}{3}$$

CappedWeight = Individual commodity weight after capping rules have been applied

AdjSectWeight | = The sum of the individual capped weights within each commodity sector

Capping Frequency: Monthly

Rebalancing Frequency: The weights are reset to the annual weights monthly.

Rebalancing Date: The Dow Jones Commodity Index business day before the first monthly roll date.

For information on capping rules, please refer to the Capped Component Indices section in the S&P GSCI Capped Indices Methodology. For information on capped component target weight and CWF calculations, please refer to the Capped Indices section of the S&P Dow Jones Indices Commodity Index Mathematics Methodology.

#### **Dow Jones Commodity Index Values**

On any given day, the value of the index is equal to the total dollar weight of the index divided by a normalizing constant, which ensures the continuity of the index over time by enabling comparisons between the values of the index at various times. The total dollar weight of the index is the total dollar weight of the underlying commodities. The dollar weight of the underlying commodities on any given day is equal to the product of the daily contract reference price, the appropriate contract weight factor (CWF), and the appropriate "roll weights" needed during the roll period.

#### **Dow Jones Commodity Sector Indices**

Four sector capped indices and nine sector indices that are not capped are also part of the index family.

Capped Component Sectors	Uncapped Sectors			
Agriculture & Livestock	Energy	All Cattle		
Energy & Metals	Livestock	All Wheat		
Agriculture	Grains	Precious Metals		
All Metals	Softs	Industrial Metals		
	Petroleum			

### **Index Calculation**

#### **Overview of the Calculation Process**

The calculation of the DJCI considers price levels of the First Nearby Contract Expiration on each DJCI 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. The index families are calculated daily, throughout the calendar year. The indices follow the NYSE holiday schedule.

#### **Calculation of the Normalizing Constant**

In order to ensure continuity of the DJCI and to allow comparisons of DJCI's value over time, it is necessary to adjust the calculation of the DJCI each time the CWFs are changed. This calculation is adjusted with a Normalizing Constant (NC), which 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 DJCI is changed, pursuant to the procedures set forth in this methodology.

For information on the calculation of the index levels and Normalizing Constant, please refer to the Liquidity Weighted Indices section and the Derived Indices section of the S&P Dow Jones Indices' Commodity Index Mathematics Methodology.

#### **Contract Roll Weights and Monthly Roll Period**

The DJCI Spot Index Roll Period is from the 5<sup>th</sup> business day to the 9<sup>th</sup> business day on a monthly basis. The following table shows how the contracts are rolled on a daily basis during the Roll Period:

Business Day	Roll Out Contract	Roll In Contract
5 <sup>th</sup> Business Day	80%	20%
6 <sup>th</sup> Business Day	60%	40%
7 <sup>th</sup> Business Day	40%	60%
8 <sup>th</sup> Business Day	20%	80%
9 <sup>th</sup> Business Day	0%	100%

During the January Roll Period, and during any other Roll Period in which a re-weighting of the DJCl is implemented, the DJCl rolls into the new CWFs and NC during the regularly scheduled monthly Roll Period.

#### **Adjustment of Roll Period**

On any DJCI Business Day during the designated roll period (including the January roll period and any other roll period as a result of a CWF change), roll weights may need to be held from the previous business day to reflect a Market Disruption Event (MDE). The following table shows an example of how the contract roll weights would be held on a day when a Market Disruption Event occurs:

<b>Business Day</b>	<b>Roll Out Contract</b>	Roll In Contract	
5 <sup>th</sup> Business Day	80%	20%	
6 <sup>th</sup> Business Day	60%	40%	
7 <sup>th</sup> Business Day	60%	40%	MDE occurs; previous weights from 6 <sup>th</sup> Business Day are maintained
8 <sup>th</sup> Business Day	20%	80%	
9th Business Day	0%	100%	

In a Market Disruption Event, the portion of the roll that otherwise would have taken place on that S&P GSCI Business Day will take place on the next Contract Business Day (provided that day is also an S&P GSCI Business Day) as long as no Market Disruption Event occurs.

For more information of what constitutes a Market Disruption Event, please refer to the Index Policy section of the S&P Dow Jones Indices' Commodities Indices Policies & Practices document.

#### **Currency of Calculation and Additional Index Return Series**

In addition to the indices detailed in this methodology, additional return series versions of the indices may be available, including, but not limited to: currency, currency hedged, decrement, fair value, inverse, leveraged, and risk control versions. For a list of available indices, please refer to the <a href="#series">S&P DJI</a>
<a href="#mailto:Methodology & Regulatory Status Database">Methodology & Regulatory Status Database</a>.

For information on index calculation, please refer to the Other Derived Indices section of the S&P Dow Jones Indices' Commodity Index Mathematics Methodology.

For the inputs necessary to calculate certain types of indices, including decrement, dynamic hedged, fair value, and risk control indices, please refer to the Parameters documents available at <a href="https://www.spglobal.com/spdji/">www.spglobal.com/spdji/</a>.

S&P Dow Jones Indices calculates several non-U.S. dollar denominated versions of the Dow Jones Commodity Index. Currently, versions for the seven following currencies are calculated: Australian Dollar (AUD), Canadian Dollar (CAD), Euro (EUR), Japanese Yen (JPY), Singapore Dollar (SGD), Swiss Franc (CHF) and British Pounds (GBP). Based on the specific currency involved, Hedged and Unhedged versions of the index are calculated. The Euro and Yen Unhedged versions of the index represent the value of the Dow Jones Commodity Index translated into the specific currency. They are calculated by multiplying the previous day's currency index by the ratio of the current underlying index level to the previous session's underlying index level, multiplied by the ratio of the current FX rate to the previous session's FX rate. The FX rates are obtained from WMR using the 11:00 am NY (ET) rate.

The currency hedged versions of the Dow Jones Commodity Index measure the performance of the index components based on the specific non-U.S. dollar currency, but with minimal exchange rate risk. The hedged indices are calculated by hedging the beginning-of-period balances using rolling one-month forward rates. This shields the hypothetical value of the index at the start of each month from exchange rate fluctuations.

For information on index calculations, please refer to the Other Derived Indices section of the S&P Dow Jones Indices' Commodity Index Mathematics Methodology. For the inputs necessary to calculate certain types of indices, including decrement, dynamic hedged, fair value, and risk control indices, please refer to the Parameters documents available at <a href="https://www.spglobal.com/spdji/">www.spglobal.com/spdji/</a>.

## **Index Governance**

#### **Index Committee**

An S&P Dow Jones Indices Index Committee maintains the index and oversees the daily management and operations of the Dow Jones Commodity Index. The Index Committee is responsible for all analytical methods and calculation of the indices. The Committee meets regularly. At each meeting, the Committee reviews any issues that may affect index constituents, statistics comparing the composition of the indices to the market, commodities that are being considered as candidates for addition to an index, and any significant market events. In addition, the Index Committee may revise the methodology covering rules for selecting commodities, or other matters.

The Index Committee may change the date of a given rebalancing for reasons including market holidays occurring on or around the scheduled rebalancing date. Any such change will be announced with proper advance notice where possible.

S&P Dow Jones Indices considers information about changes to its indices and related matters to be potentially market moving and material. Therefore, all Index Committee discussions are confidential.

S&P Dow Jones Indices' Index Committees reserve the right to make exceptions when applying the methodology if the need arises. In any scenario where the treatment differs from the general rules stated in this document or supplemental documents, clients will receive sufficient notice, whenever possible.

In addition to the daily governance of indices and maintenance of index methodologies, at least once within any 12-month period, the Index Committee reviews the methodology to ensure the indices continue to achieve the stated objectives, and that the data and methodology remain effective. In certain instances, S&P Dow Jones Indices may publish a consultation inviting comments from external parties.

For information on Quality Assurance and Internal Reviews of Methodology, please refer to the Index Governance section of S&P Dow Jones Indices' Commodities Indices Policies & Practices.

## **Index Dissemination**

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

#### **Tickers**

The table below lists headline indices covered by this document. All versions of the below indices that may exist are also covered by this document. Please refer to the <a href="S&P DJI Methodology and Regulatory">S&P DJI Methodology and Regulatory</a> <a href="Status Database">Status Database</a> for a complete list of indices covered by this document.

Index Code	Index Name	Launch Date	BBG - Real Time	BBG	RIC	Base Date	Base Value
DJCI	Dow Jones Commodity Index	07/01/2014	DJCI		.DJCI	01/08/1999	100
DJCI1M	Dow Jones Commodity Index 1 Month Forward	07/01/2014		DJCI1M		01/08/1999	100
DJCI2M	Dow Jones Commodity Index 2 Month Forward	07/01/2014		DJCI2M		01/08/1999	100
DJCI3M	Dow Jones Commodity Index 3 Month Forward	07/01/2014		DJCI3M		01/08/1999	100
DJCI4M	Dow Jones Commodity Index 4 Month Forward	07/01/2014		DJCI4M		01/08/1999	100
DJCI5M	Dow Jones Commodity Index 5 Month Forward	07/01/2014		DJCI5M		01/08/1999	100
DJCI6M	Dow Jones Commodity Index 6 Month Forward	07/01/2014		DJCI6M		01/08/1999	100
DJCI12M	Dow Jones Commodity Index 12 Month Forward	07/01/2014		DJCI12M		01/08/1999	100
DJCIALC	Dow Jones Commodity Index Agriculture & Livestock Capped Component	07/01/2014	DJCIALC		.DJCIALC	01/09/2006	100
DJCIAGC	Dow Jones Commodity Index Agriculture Capped Component	07/01/2014	DJCIAGC		.DJCIAGC	01/09/2006	100
DJCIAC	Dow Jones Commodity Index All Cattle	07/01/2014	DJCIAC		.DJCIAC	01/09/2006	100
DJCIAMC	Dow Jones Commodity Index All Metals Capped Component	07/01/2014	DJCIAMC		.DJCIAMC	01/09/2006	100
DJCIAW	Dow Jones Commodity Index All Wheat	07/01/2014	DJCIAW		.DJCIAW	01/09/2006	100
DJCIEMC	Dow Jones Commodity Index Energy & Metals Capped Component	07/01/2014	DJCIEMC		.DJCIEMC	01/09/2006	100
DJCIEN	Dow Jones Commodity Index Energy	07/01/2014	DJCIEN		.DJCIEN	01/09/2006	100
DJCIGR	Dow Jones Commodity Index Grains	07/01/2014	DJCIGR		.DJCIGR	01/09/2006	100
DJCIIM	Dow Jones Commodity Index Industrial Metals	07/01/2014	DJCIIM		.DJCIIM	01/09/2006	100
DJCILV	Dow Jones Commodity Index Livestock	07/01/2014	DJCILV		.DJCILV	01/09/2006	100
DJCIPT	Dow Jones Commodity Index Petroleum	07/01/2014	DJCIPT		.DJCIPT	01/09/2006	100
DJCIPM	Dow Jones Commodity Index Precious Metals	07/01/2014	DJCIPM		.DJCIPM	01/09/2006	100
DJCISF	Dow Jones Commodity Index Softs	07/01/2014	DJCISF		.DJCISF	01/09/2006	100
DJCIDR	Dow Jones Commodity Index Dynamic Roll	10/13/2014	DJCIDR		.DJCIDR	01/07/1999	100
DCEMDRC	Dow Jones Commodity Index Energy & Metals Dynamic Roll Capped Component	11/3/2014	DCEMDRC		.DCEMDRC	01/17/2006	100
DJCI1MSP	Dow Jones Commodity Index Forward Spread 1 Month	07/30/2015				01/20/1999	100
DJCI1MSP	Dow Jones Commodity Index Forward Spread 1 Month	07/30/2015				01/20/1999	100
DJCI1MSP	Dow Jones Commodity Index Forward Spread 1 Month	07/30/2015				01/20/1999	100

Index Code	Index Name	Launch Date	BBG - Real Time	BBG	RIC	Base Date	Base Value
DJCI1MSP	Dow Jones Commodity Index Forward Spread 1 Month	07/30/2015				01/20/1999	100
DJCI1MSP	Dow Jones Commodity Index Forward Spread 1 Month	07/30/2015				01/20/1999	100
DJCIE	Dow Jones Commodity Index Enhanced	10/24/2016	DJCIE		.DJCIE	01/20/1999	100

#### **Index Data**

Daily index level data is available via on subscription.

For product information, please contact S&P Dow Jones Indices, <a href="www.spglobal.com/spdji/en/contact-us">www.spglobal.com/spdji/en/contact-us</a>.

#### Web site

For further information, please refer to S&P Dow Jones Indices' Web site at <a href="www.spglobal.com/spdji/">www.spglobal.com/spdji/</a>.

# Appendix I

#### **Additional DJCI Index Data**

#### **Contracts Included**

The table below identifies the current contracts included in the Dow Jones Commodity Index and their respective designated contract roll schedule.

											ntra				
Trading Facility	Commodity	Ticker	2023 TDVT (USD bn) <sup>2</sup>	1	2	3	<u> </u>	5	15 at	7	nth E	9 9	10	11	12
CBT	Chicago Wheat	W	937.5	H	H	K	K	N	N	U	IJ	Z	Z	Z	H
KBT	Kansas Wheat	KW	392.3	Н	Н	K	K	N	N	U	IJ	Z	Z	Z	Н
CBT	Corn	C	2069.3	Н	Н	K	K	N	N	U	U	Z	Z	Z	Н
CBT	Soybeans	S	3085.3	Н	Н	K	K	N	N	Х	X	X	X	F	F
CBT	Soybean Meal	SM	1008.7	Н	Н	K	K	N	N	Z	Z	Z	Z	Z	F
CBT	Sovbean Oil	ВО	778.9	Н	Н	K	K	N	N	Z	Z	Z	Z	Z	F
ICE - US	Coffee	KC	643.9	Н	Н	K	K	N	N	U	U	Z	Z	Z	Н
ICE - US	Sugar #11	SB	566.4	Н	Н	Κ	K	Ν	Ν	V	V	V	Н	Н	Н
ICE - US	Cocoa	CC	277.5	Н	Н	K	K	Ν	Ν	U	U	Z	Ζ	Z	Н
ICE - US	Cotton #2	CT	349	Н	Н	K	K	N	Ν	Ζ	Ζ	Z	Z	Z	Н
CME	Lean Hogs	LH	387.9	G	J	J	М	М	Ν	Q	V	V	Z	Z	G
CME	Live Cattle	LC	735.8	G	J	J	М	М	Q	Q	V	V	Z	Z	G
CME	Feeder Cattle	FC	249.7	Н	Н	J	K	Q	Q	Q	U	V	Χ	F	F
NYM / ICE	Crude Oil	CL	20078.8	G	Н	J	K	М	N	Q	U	V	Χ	Z	F
NYM	Heating Oil	НО	3672.3	G	Н	J	K	М	Ν	Q	U	V	Χ	Ζ	F
NYM	RBOB Gasoline	RB	3792.9	G	Н	J	K	М	Ν	Q	U	V	Χ	Ζ	F
ICE - UK	Brent Crude Oil	LCO	15852.6	Н	J	K	М	Ν	Q	U	V	Χ	Z	F	G
ICE - UK	Gasoil	LGO	4796.4	G	Н	J	K	М	Ν	Q	U	V	Χ	Z	F
NYM / ICE	Natural Gas	NG	4403.7	G	Τ	J	K	М	Ν	Q	J	>	Χ	Ζ	F
LME	Aluminum	MAL	3227.1	G	Τ	J	K	М	Ν	Q	U	>	Χ	Ζ	F
LME	LME Copper	MCU	5993.3	G	Τ	J	K	М	Ν	Q	U	٧	Χ	Ζ	F
CMX	NA Copper	HG	2115.9	Н	Τ	K	K	Ν	Ν	U	U	Ζ	Ζ	Ζ	Н
LME	Lead	MPB	612.9	G	Н	J	K	М	Ν	Q	U	V	Χ	Z	F
LME	Nickel	MNI	1844.1	G	Н	J	K	М	Ν	Q	U	V	Χ	Ζ	F
LME	Zinc	MZN	1915.1	G	Н	J	K	М	Ν	Q	U	V	Χ	Z	F
CMX	Gold	GC	11431.7	G	J	J	М	М	Q	Q	Z	Z	Z	Z	G
CMX	Silver	SI	2180.8	Н	Н	Κ	K	N	Ν	U	U	Z	Ζ	Ζ	Н
CMX	Platinum	PL	235.5	J	J	J	N	N	Ν	V	V	V	F	F	F

#### Month Letter Codes

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

<sup>&</sup>lt;sup>2</sup> The TDVT's (Total Dollar Value Traded) are calculated by using a simple average of the Total Dollar Value Traded for each individual commodity for the last five years within the Dow Jones Commodity Index.

# Appendix II

#### **Calculation of Additional DJCI Indices**

#### **Dow Jones Commodity Index Dynamic Roll**

The Dow Jones Commodity Index Dynamic Roll is a version of the Dow Jones Commodity Index that utilizes a more flexible monthly futures contract rolling strategy to determine the new futures contract months for the underlying commodities. The Dynamic Roll Algorithm follows that of the S&P GSCI Dynamic Roll.

**Dynamic Roll Matrices of the DJCI Commodities.** The Dynamic Roll Matrix of a given commodity is a listing of all eligible contract months for that commodity, on a month-by-month basis. The eligible contract months are determined based on the liquidity profile measured by open interest and volume, which are verified annually.

The following tables represent the DJCI Dynamic Roll Matrices for the current year, with column headers as follows: The column "0" is the "front futures" contract. The eligible contracts for each month are listed from column "1" onward. Contract months listed under "1" are the same as the DJCI Roll Schedule for that commodity. Rows excluding contract months indicate non-roll months.

SM	Month	0	1	2	3	4
Jan	1					
Feb	2	H0	K0	N0	Z0	
Mar	3					
Apr	4	K0	N0	Q0	Z0	
May	5					
Jun	6	N0	<b>Z</b> 0			
Jul	7					
Aug	8					
Sep	9					
Oct	10					
Nov	11	<b>Z</b> 0	F1	H1	K1	N1
Dec	12	F1	H1	K1	N1	

ВО	Month	0	1	2	3	4
Jan	1					
Feb	2	H0	K0	N0	<b>Z</b> 0	
Mar	3					
Apr	4	K0	N0	<b>Z</b> 0		
May	5					
Jun	6	N0	<b>Z</b> 0			
Jul	7					
Aug	8					
Sep	9					
Oct	10					
Nov	11	<b>Z</b> 0	F1	H1	K1	N1
Dec	12	F1	H1	K1	N1	

HG	Month	0	1	2	3	4
Jan	1					
Feb	2	H0	K0	N0	U0	<b>Z</b> 0
Mar	3					
Apr	4	K0	N0	U0	Z0	
May	5					
Jun	6	N0	U0	<b>Z</b> 0	H1	
Jul	7					
Aug	8	U0	<b>Z</b> 0	H1		
Sep	9					
Oct	10					
Nov	11	Z0	H1	K1	N1	
Dec	12					

PL	Month	0	1	2	3	4
Jan	1					
Feb	2					
Mar	3	JO	N0			
Apr	4					
May	5					
Jun	6	N0	V0			
Jul	7					
Aug	8					
Sep	9	V0	F1			
Oct	10					
Nov	11					
Dec	12	F1	J1			

For more information on the Dynamic Roll Algorithm, please refer to the S&P GSCI <u>Dynamic Roll Index</u> <u>Methodology</u>.

#### **DJCI Forward Index Family**

S&P Dow Jones Indices calculates forward month versions of the Dow Jones Commodity Index. The forward indices measure the index components based on first nearby contract expirations that would be included the index on the specified forward dates.

For example, on December 11, 2013, the commodities in the Dow Jones Commodity Index 3 Month Forward include those futures contract months which would be in the main Dow Jones Commodity Index on March 11, 2014 (i.e., the futures contract month is moved forward three months).

The forward indices follow the same rules and calculation methodology as the main Dow Jones Commodity Index, except for weights and the futures contract months. The weights differ because the indices are capped using the capping method specified in *Step 2 – Component Capping*. There are seven forward month versions of the Dow Jones Commodity Index: one-month forward, two-month forward, three-month forward, four-month forward, five-month forward, six-month forward, and 12-month forward. Designated Contract Expirations (see *Appendix A*) are advanced by the number of months identified by the specific forward index version.

The Dow Jones Commodity Index 12 Month Forward uses slightly different Designated Contract Expirations for Feeder Cattle (commodity code: FC). Designated Contract Expirations are the same as that in the main Dow Jones Commodity Index.

#### **Dow Jones Commodity Index Single Commodity Capped Component**

The Dow Jones Commodity Index Single Commodity Capped Component version of the Dow Jones Commodity Index (DJCI) maintains the diversification of the DJCI component weights while allocating 15% to the namesake commodity and equally distributing the remaining 85% among the eligible commodities, subject to the Rule of Exclusion. In addition, all components are capped at 17%.

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

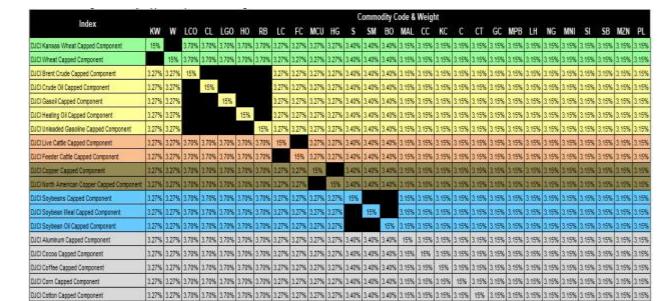
The Rule of Exclusion states that when any commodity that belongs to a component is the namesake commodity of the index, all other commodities of that same component are excluded in that single commodity index. Thus, for the DJCI Heating Oil Capped Component, the four remaining commodities (WTI Crude Oil, Brent Crude Oil, Gasoil, and RBOB Gasoline) of the Petroleum component are excluded from the index.

Weights are rebalanced monthly on the 5<sup>th</sup> business day. In essence, each single commodity index consists of a basket of individual DJCI single commodities, not just one single individual commodity. However, if a market disruption event takes place on the day of the rebalancing, the rebalancing is held off one business day, or until there is no further market disruption event.

Rebalancing Frequency: Monthly.

**Determination Date:** One DJCI business day before each monthly roll date.

For information on capping rules, please refer to the **Capped Component Indices** section in the S&P GSCI Capped Indices Methodology. For information on the calculation of the index levels, please refer to the **Capped Indices** section of the S&P Dow Jones Indices' Commodity Index Mathematics Methodology.



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**Table 1: DJCI Single Commodity Capped Component Index Weights** 

#### **Dow Jones Commodity Index Forward Spread**

The Dow Jones Commodity Index Forward Spread measures a long position in the Dow Jones Commodity Index Forward ER and a short position in the Dow Jones Commodity Index Front Month ER to capture the calendar spread. There are five forward month versions of the Dow Jones Commodity Index Forward Spread: one-month, two-month, three-month, four-month and five-month. Index calculation is as follows:

$$Index_{t} = Index_{R} * \left[1 + Weight_{F} * \frac{DJCIFwd_{t}}{DJCIFwd_{R}} + Weight_{D} * \frac{DJCI_{t}}{DJCI_{R}}\right]$$

where:

DJC/ Gold Capped Component

DJC: Lead Capped Component

DJCI Sugar Capped Component

DJCI Zinc Capped Component

DJCI Platinum Capped Component

 $Index_t$  = DJCI Forward Spread ER on date t.  $Index_R$  = DJCI Forward Spread ER on date R.

 $DJCIFwd_t = DJCI x$ -Month Forward ER on date t (e.g., DJCI 2-Month Forward ER).

 $DJCIFwd_R = DJCI x$ -Month Forward ER on date R.

 $DJCI_t$  = DJCI ER on date t.  $DJCI_R$  = DJCI ER on date R.

R = Last rebalancing date preceding date t.

Weight  $_F$  = 100% Weight  $_D$  = -100% 15% 3 15% 3 15% 3 15% 3 15% 3 15%

**Handling of Market Disruption Events**. If a market disruption event (MDE) takes place on a rebalancing date, an MDE offset adjustment is calculated and added to the index on the following business day. This process is repeated until there are no further market disruption events.

MDE offset adjustments are calculated for both contracts of the MDE-impacted commodity to maintain a balanced spread even if only one of the commodity's contracts within the spread index is disrupted. For example, if LCQ5 in the DJCI is disrupted and LCZ5 in the DJCI 3-Month Forward is not, S&P Dow Jones Indices will calculate MDE adjustment for both contracts and the index calculation is as follows:

$$Index_{t} = Index_{R} * \left[ 1 + Weight_{F} * \frac{DJCIFwd_{t}}{DJCIFwd_{R}} + Weight_{D} * \frac{DJCI_{t}}{DJCI_{R}} \right] + MDE_{Adj}$$

where:

 $MDE_{Adj}$  = The sum of the MDE Offset Adjustments for the pair of MDE-impacted contracts. In formulaic terms:

$$MDE_{Adj} = \sum (AHP - THP) * (Price_t - Price_R)$$

The actual hedged position (AHP) of the MDE-impacted contract is determined as follows:

$$AHP_{c} = \frac{CWeight * Index_{R-1}}{CIndex_{R-1}} * HP_{t-1}$$

where:

 $AHP_c$  = Actual hedged position of the MDE-impacted contract c.

CWeight = Weight of the component index (DJCI or DJCI Forward) within the Forward Spread Index (100% for the long position and -100% for the short position).

Index  $R_{-1}$  = DJCI Forward Spread on previous rebalance date.

 $CIndex_{R-1}$  = Component index within the Forward Spread Index on previous rebalancing date.

 $HP_{t-1}$  = Hedged position of the MDE-impacted contract c as of the previous business day.

The theoretical hedged position (*THP*) of the MDE-impacted contract is determined as follows:

$$THP_{c} = \frac{CWeight * Index_{t-1}}{CIndex_{t-1}} * HP_{t-1}$$

where:

 $THP_c$  = Theoretical hedged position of the MDE-impacted contract c.

Index t-1 = DJCI Forward Spread on the previous business day.

 $CIndex_{t-1} = Component index (DJCI or DJCI Forward)$  within the Forward Spread Index on the previous business day.

 $HP_{t-1}$  = Hedged position of the MDE-impacted contract c as of the previous business day.

The hedged position (*HP*) of the MDE-impacted contract is determined as follows:

$$HP_{c} = \frac{CIndex_{t-1}}{TDW_{t-1}} * CRW_{t} * CWF_{t}$$

where:

 $HP_c$  = Hedged position of the MDE-impacted contract c.

CIndex t1 = Component index (DJCI or DJCI Forward) within the Forward Spread index on date t-1.

 $TDW_{t-1}$  = Total Dollar Weight of the component index (DJCI or DJCI Forward) which includes the MDE-impacted contract.

 $CRW_t$  = Contract Roll Weight on date t.

 $CWF_t$  = Contract Weight Factor on date t.

#### **Dow Jones Commodity Index Enhanced**

The Dow Jones Commodity Index Enhanced applies certain dynamic and seasonal rolling rules. Although the Dow Jones Commodity Index Enhanced includes the same futures contracts as the DJCI, the contract months will vary, and the returns and values will differ from the DJCI. The five-day roll begins on the first business day of the month, and the closing futures prices on the third to last business day of the prior month are used to determine the dynamic roll check for WTI Crude Oil and Brent Crude Oil.

Most of the DJCI futures contracts in the Enhanced Index follow the normal schedule with the following exceptions:

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

The contango percentage is determined as follows:

$$C = \frac{Price_{m+1}}{Price_m} - 1$$

where:

C = Contango percentage.

*Price*  $_{m+1}$  = Settlement price for WTI Crude Oil (2<sup>nd</sup> contract month) or Brent Crude Oil (3<sup>rd</sup> contract month).

*Price* <sub>m</sub> = Settlement price for WTI Crude Oil (1<sup>st</sup> contract month) or Brent Crude Oil (2<sup>nd</sup> contract month).

The following table identifies the contracts included in the Dow Jones Commodity Index Enhanced that have specifically different Designated Contract Expirations than the DJCI.

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

<sup>&</sup>lt;sup>3</sup> Future Months included in the Enhanced Strategy Index at the beginning of each calendar month

# Appendix III

### **Methodology Changes**

#### Methodology changes since January 1, 2015, are as follows:

<b>2</b> 1	Effective Date	Methodology				
Change Relaunch: Dow Jones Commodity Index Nickel 2X Inverse Indices	(After Close) 05/13/2022	The index values for the Dow Jones Commodity Index Nickel 2X Inverse ER (Index Code: DJCIK2IP) and Dow Jones Commodity Index Nickel 2X Inverse TR (Index Code: DJCIK2IT) closed at zero on March 7, 2022.	Updated  The Dow Jones Commodity Index Nickel 2X Inverse ER (Index Code: DJCIK2IP) and Dow Jones Commodity Index Nickel 2X Inverse TR (Index Code: DJCIK2IT) indices relaunched on May 16, 2022, with new base dates of March 8, 2022, and base values of 100,000.			
Capping Rules for Capped Indices	01/07/2020	Rule 1: Only one commodity component can reach a maximum weight of 35%. If any component's weight exceeds 35%, it is capped at 32% and 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%. If any remaining component's weight exceeds 20%, it is capped at 17% and any excess weight is distributed proportionately among the remaining components.  Capping Frequency: Quarterly	Rule 1: Only one commodity component can reach a maximum weight of 32%.  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 17%.  Any excess weight is distributed proportionately among the remaining components.  Capping Frequency: Monthly			
Liquidity Criteria	01/07/2019	Similar commodities are grouped into "components" (e.g., Petroleum). Each component must have a Total Dollar Value Traded (TDVT) of at least \$30 billion in order to be eligible for index inclusion. Additionally, commodity components must have a Total Quantity Traded of at least 25% of the total component for index inclusion.	Each commodity (e.g., WTI Crude Oil) must have a TDVT of at least \$15 billion (\$5 billion for current index commodities) in order to be eligible for index inclusion. Capped component indices could still be created, but the component inclusion concept no longer applies.			
Country Criteria	01/07/2019	Country eligibility is based on OECD membership.	Country eligibility is based on the S&P Developed BMI index with any country classification changes implemented in the DJCI during the index's annual rebalancing in January.			
Minimum Weight Criteria	01/07/2019	The percentage weight requirement for a commodity to be eligible for index inclusion is 1% (0.1% for current index commodities).	The percentage weight requirement for a commodity to be eligible for index inclusion is 0.25%. The exclusion percentage for current commodities will remain at 0.1%.			

# Appendix IV

#### **ESG Disclosures**

E	EXPLANATION OF HOW ENVIRONMENTAL, SOCIAL & GOVERNANCE (ESG) FACTORS ARE REFLECTED IN THE KEY ELEMENTS OF THE BENCHMARK METHODOLOGY <sup>4</sup>					
1.	Name of the benchmark administrator.	S&P Dow Jones Indices LLC.				
2.	Underlying asset class of the ESG benchmark. <sup>5</sup>	N/A				
3.	Name of the S&P Dow Jones Indices benchmark or family of benchmarks.	S&P DJI Futures Indices Benchmark Statement				
4.	Do any of the indices maintained by this methodology consider ESG factors?	No				
Appendix latest update:		January 2021				
Ap	pendix first publication:	January 2021				

<sup>&</sup>lt;sup>4</sup> The information contained in this Appendix is intended to meet the requirements of the European Union Commission Delegated Regulation (EU) 2020/1817 supplementing Regulation (EU) 2016/1011 of the European Parliament and of the Council as regards the minimum content of the explanation of how environmental, social and governance factors are reflected in the benchmark methodology and the retained EU law in the UK [The Benchmarks (amendment and Transitional Provision) (EU Exit) Regulations 2019].

<sup>&</sup>lt;sup>5</sup> The 'underlying assets' are defined in European Union Commission Delegated Regulation (EU) 2020/1816 supplementing Regulation (EU) 2016/1011 of the European Parliament and of the Council as regards the explanation in the benchmark statement of how environmental, social and governance factors are reflected in each benchmark provided and published.

### Disclaimer

#### Performance Disclosure/Back-Tested Data

Where applicable, S&P Dow Jones Indices and its index-related affiliates ("S&P DJI") defines various dates to assist our clients in providing transparency. The First Value Date is the first day for which there is a calculated value (either live or back-tested) for a given index. The Base Date is the date at which the index is set to a fixed value for calculation purposes. The Launch Date designates the date when the values of an index are first considered live: index values provided for any date or time period prior to the index's Launch Date are considered back-tested. S&P DJI defines the Launch Date as the date by which the values of an index are known to have been released to the public, for example via the company's public website or its data feed to external parties. For Dow Jones-branded indices introduced prior to May 31, 2013, the Launch Date (which prior to May 31, 2013, was termed "Date of introduction") is set at a date upon which no further changes were permitted to be made to the index methodology, but that may have been prior to the Index's public release date.

Please refer to the methodology for the Index for more details about the index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations.

Information presented prior to an index's launch date is hypothetical back-tested performance, not actual performance, and is based on the index methodology in effect on the launch date. However, when creating back-tested history for periods of market anomalies or other periods that do not reflect the general current market environment, index methodology rules may be relaxed to capture a large enough universe of securities to simulate the target market the index is designed to measure or strategy the index is designed to capture. For example, market capitalization and liquidity thresholds may be reduced. In addition, forks have not been factored into the back-test data with respect to the S&P Cryptocurrency Indices. For the S&P Cryptocurrency Top 5 & 10 Equal Weight Indices, the custody element of the methodology was not considered; the back-test history is based on the index constituents that meet the custody element as of the Launch Date. Back-tested performance reflects application of an index methodology and selection of index constituents with the benefit of hindsight and knowledge of factors that may have positively affected its performance, cannot account for all financial risk that may affect results and may be considered to reflect survivor/look ahead bias. Actual returns may differ significantly from, and be lower than, back-tested returns. Past performance is not an indication or guarantee of future results.

Typically, when S&P DJI creates back-tested index data, S&P DJI uses actual historical constituent-level data (e.g., historical price, market capitalization, and corporate action data) in its calculations. As ESG investing is still in early stages of development, certain datapoints used to calculate certain ESG indices may not be available for the entire desired period of back-tested history. The same data availability issue could be true for other indices as well. In cases when actual data is not available for all relevant historical periods, S&P DJI may employ a process of using "Backward Data Assumption" (or pulling back) of ESG data for the calculation of back-tested historical performance. "Backward Data Assumption" is a process that applies the earliest actual live data point available for an index constituent company to all prior historical instances in the index performance. For example, Backward Data Assumption inherently assumes that companies currently not involved in a specific business activity (also known as "product involvement") were never involved historically and similarly also assumes that companies currently involved in a specific business activity were involved historically too. The Backward Data Assumption allows the hypothetical back-test to be extended over more historical years than would be feasible using only actual data. For more information on "Backward Data Assumption" please refer to the FAQ. The methodology and factsheets of any index that employs backward assumption in the back-tested history will explicitly state so. The methodology will include an Appendix with a table setting forth the specific

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