

S&P Dynamic Futures Index *Methodology*

February 2024

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Introduction

Index Objective and Overview

The S&P Dynamic Futures Index (S&P DFI) measures the performance of a strategy based on trends in price movements of specific futures contracts. The futures contracts are represented individually on either a long or short basis, depending on market momentum.

Highlights

The key characteristics of the index are:

- The index comprises 24 futures constituents grouped into 14 sectors comprising eight financial and six commodity components. The financial sector includes eight global currency and U.S. Treasury futures contracts. The commodities sector includes 16 traditional, physical commodity components (futures contracts). The financials and commodities sectors are equal weighted.
- Long or short positions are determined by measuring the current component price relative to an exponential moving average.
- To maintain a balanced weighting across different commodity sectors, the weighting scheme of the S&P GSCI Light Energy Index is applied at the beginning of each year.
- To maintain weighting across different financial contracts, each country's current year International Monetary Fund (IMF) estimate for nominal Gross Domestic Product (GDP) is used to derive contract weights at the beginning of each year.
- Component weights are reset monthly to the annually defined target weights.
- Positions are rolled from the 1st through 5th business days of the month.

For more information on the S&P GSCI Light Energy Index, please refer to the S&P GSCI Index Methodology, available at www.spglobal.com/spdji.

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	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.

Index Construction

Position Determination

The rule for the index regarding long or short positions is summarized as follows:

- **Long positions:** tracked when a component's current price input is greater than or equal to the exponential average of the past seven price inputs.
- **Short positions:** tracked when a component's current price input is less than the exponential average of the past seven price inputs.

The position is determined on the second to last S&P DFI business day of the month (defined as the position determination date, or PDD) when the monthly percentage change of a component's price is compared to past monthly price changes, exponentially weighted to give greatest weight to the most recent return and least weight to the return seven months prior. See the *Appendix* for details regarding the exponential average. The weighted sum of the daily percentage changes of all the component prices equals the daily movement of the index.

The trade activity period (TAP) is the five S&P DFI business day period when the positions are executed from the first (1st) through the fifth (5th) S&P DFI business days of the month.

Index Weightings and Rebalancings

Non-Financial Weighting Scheme

The S&P GSCI Light Energy Index is comprised of the same Designed Contracts as the S&P GSCI, but the Contract Production Weights (CPW) of all Designed Contracts in the energy sector are one-fourth (1/4) their size in the S&P GSCI. There are some component differences between the S&P GSCI Light Energy Index and S&P DFI.

To derive the weighting scheme for the S&P DFI on the last business day of January of each year, we start with the weights of the components of the S&P GSCI Light Energy Index, and then reallocate the relative weights among the components by 1) removing the weights of components not in existence in the S&P DFI, such as Feeder Cattle, Aluminum High Grade, Lead, Nickel, and Zinc, and 2) picking the most liquid components in the S&P GSCI Light Energy Index, such as Chicago Wheat instead of Kansas City Wheat, WTI Crude Oil instead of Brent Crude Oil, and RBOB Gasoline instead of Gasoil, where more than one futures contracts track the same component.

Financial Commodity Weighting Scheme

Gross domestic product (GDP) is an indication of a country's economic significance and is used in selecting and making allocations to currency financials in the S&P DFI. The annual GDP data, reported in U.S. dollars, is obtained from WMR. The current year IMF estimates for nominal GDP are used to determine the weight for the financial (currency) future components. The data from the IMF are updated twice a year in April and September. The GDP number released in the September report of previous year is used for determining the weights of the currency futures for the current year.

The markets in the Index are divided equally between tangible commodities and financials (excluding equities and short-term interest rates) to decrease correlation among the components.

Rebalancings

Annual Rebalancing for Component Weights. At the last business day of January, each of the commodity components rebalance to the weightings derived from the S&P GSCI Light Energy Index, and the financial components rebalance to reflect the previous year's relevant nominal GDP figures. The component weights vary over time, as production and GDP figures change. Rebalancing the components annually, to reflect the changes in the S&P GSCI Light Energy Index weighting and relevant GDP figures, allows the strategy to better reflect the underlying economic developments and different stages of the market cycle.

Monthly Rebalancing for Component Weights. Components rebalance to their fixed weights at the beginning of each month using a rebalancing reference date as of the second to last S&P DFI business day of the previous month and implement over a five-day period from the first (1st) through the fifth (5th) S&P DFI business days of the current month.

Sectors versus Components

Effective as of the July 2012 rebalancing, all S&P DFI component positions are determined at the component level.

Index Maintenance

Futures contracts have limited durations. Consequently, for the index to be calculated through time it must change (or roll) from tracking contracts that are approaching expiration to tracking new contracts. Currently, each contract has three to four roll periods each year and its own “roll pattern” based on historical liquidity. The following rules are observed in rolling the strategy futures contracts from an existing contract to the next contract:

- The non-currency component contracts are rolled from the current contract to the next contract beginning with the trade activity period (TAP) for the month that is two months before the current contract matures.
- The currency contracts are rolled from the current contract to the next maturing futures contract four times per year as of the first TAP for the month prior to the contract’s final maturity month.

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 the following: currency, currency hedged, decrement, fair value, inverse, leveraged, and risk control versions. For a list of available indices, please refer to [S&P DJI's All Indices by Methodology Report](#).

For information on index calculation, please refer to S&P Dow Jones Indices' Index Mathematics Methodology.

Index Calculation

Calculation of Spot & Excess Return Indices

On a given business day, d , the Spot & Excess Return indices are calculated containing a specific number of Components/Commodities. The Short Component (SC) is allocated to the amount of weight remaining in the index after the weights of each component has been defined based on the long and short positions and their respective percentage weights. Adding the weight of the Short Component to the sum of the weights of the Components will make the weights in the Index sum to 100%.

For more information, please refer to the Long-Short Indices section of the S&P Dow Jones Indices' Commodity Index Mathematics Methodology.

Calculation of Total Return Indices

The methodology calls for using an actual day count to calculate the interest rate of return.

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

Index Governance

Index Committee

An Index Committee maintains 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.

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 S&P Dow Jones Indices' Commodities Indices Policies & Practices Methodology.

Index Dissemination

Index levels are available through S&P Dow Jones Indices' Web site at www.spglobal.com/spdji/, major quote vendors (see codes below), 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 [S&P DJI Methodology & Regulatory Status Database](#) 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
SPDFI	S&P DFI Index	12/21/2009	SPDFI	SPDFI1	.SPDFI	01/13/2004	100
SPDCFI	S&P DCFI Index	12/21/2009	SPDCFI	SPDCFI	.SPDCFI	01/13/2004	100
SPDFFI	S&P DFFI Index	12/21/2009	SPDFFI	SPDFFI	.SPDFFI	01/13/2004	100

Index Data

Daily index level data is available via on subscription.

For product information, please contact S&P Dow Jones Indices, www.spglobal.com/spdji/en/contact-us.

Web site

For further information, please refer to S&P Dow Jones Indices' Web site at www.spglobal.com/spdji/.

Index Policy

Holiday Schedule

The S&P DFI calculates daily based on the CME group holiday schedule when the majority of the S&P DFI contracts are open for official trading and official settlement prices are provided, excluding holidays and weekends.

For information on Calculations and Pricing Disruptions, Expert Judgment, Data Hierarchy and Unexpected Exchange Closures, please refer to S&P Dow Jones Indices' Commodities Indices Policies & Practices Methodology.

Contact Information

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

Appendix I: Additional Index Data

Included Contracts

Currently each contract has three to four roll periods per year with a specific “roll pattern” based on historical liquidity. The following rules are observed in rolling the strategy futures contracts from an existing contract to the next contract:

- The non-currency component contracts are rolled from the current contract to the next contract beginning with the trade activity period (TAP) for the month that is two months before the current contract matures.
- The currency contracts are rolled from the current contract to the next maturing futures contract four times per year as of the first TAP for the month prior to the contract’s final maturity month.

The following tables provided reflect the data from the January 2023 rebalance:

Table 1: Active contract schedule used for price inputs of the index:

Trading Facility	Commodity (Contract)	Ticker	Designated Contract Expirations at Month Begin											
			1	2	3	4	5	6	7	8	9	10	11	12
NYM	Heating Oil	HO	H	M	M	M	U	U	U	Z	Z	Z	H	H
NYM	WTI Crude Oil	CL	H	M	M	M	U	U	U	Z	Z	Z	H	H
NYM	Natural Gas	NG	H	M	M	M	U	U	U	Z	Z	Z	H	H
NYM	RBOB Gasoline	RB	H	M	M	M	U	U	U	Z	Z	Z	H	H
CMX	NA Copper	HG	H	K	K	N	N	U	U	Z	Z	Z	H	H
CMX	Gold	GC	J	J	M	M	Q	Q	Z	Z	Z	Z	G	G
CMX	Silver	SI	H	N	N	N	N	U	U	Z	Z	Z	H	H
CME	Lean Hogs	LH	M	M	M	M	Q	Q	Z	Z	Z	Z	G	G
CME	Live Cattle	LC	M	M	M	M	Q	Q	Z	Z	Z	Z	G	G
CBOT	Corn	C	H	N	N	N	N	U	U	Z	Z	Z	H	H
CBOT	Soybeans	S	H	N	N	N	N	X	X	X	X	H	H	H
CBOT	Chicago Wheat	W	H	N	N	N	N	U	U	Z	Z	Z	H	H
ICE-US	Cocoa	CC	H	N	N	N	N	U	U	Z	Z	Z	H	H
ICE-US	Coffee	KC	H	N	N	N	N	U	U	Z	Z	Z	H	H
ICE-US	Cotton	CT	H	N	N	N	N	Z	Z	Z	Z	Z	H	H
ICE-US	Sugar	SB	H	K	K	N	N	V	V	V	H	H	H	H
CME	Australian Dollar	AD	H	H	M	M	M	U	U	U	Z	Z	Z	H
CME	British Pound	BP	H	H	M	M	M	U	U	U	Z	Z	Z	H
CME	Canadian Dollar	CD	H	H	M	M	M	U	U	U	Z	Z	Z	H
CME	Euro	URO	H	H	M	M	M	U	U	U	Z	Z	Z	H
CME	Japanese Yen	JY	H	H	M	M	M	U	U	U	Z	Z	Z	H
CME	Swiss Franc	SF	H	H	M	M	M	U	U	U	Z	Z	Z	H
CBOT	U.S. Treasury Bond	US	H	M	M	M	U	U	U	Z	Z	Z	H	H
CBOT	U.S. Treasury Note	TY	H	M	M	M	U	U	U	Z	Z	Z	H	H

Table 2: Month Letter Codes:

Month	Letter Code
January	F
February	G
March	H
April	J
May	K
June	M
July	N
August	Q
September	U

Month	Letter Code
October	V
November	X
December	Z

Contracts' Current Rebalancing Weights

Table 3: Non-Financial Commodity Rebalancing Weights

S&P GSCI Light Energy Components	Weight	S&P DFI Components	Weights related to S&P GSCI Light Energy	Weights related to S&P DFI
Chicago Wheat	4.89%	Chicago Wheat	4.89%	6.78%
Kansas City Wheat	1.98%			
Corn	8.26%	Corn	8.26%	11.45%
Soybeans	6.40%	Soybeans	6.40%	8.87%
Coffee "C"	1.76%	Coffee	1.76%	2.44%
Sugar #11	3.91%	Sugar	3.91%	5.41%
Cocoa	1.05%	Cocoa	1.05%	1.46%
Cotton #2	1.96%	Cotton	1.96%	2.71%
Lean Hogs	3.89%	Lean Hogs	3.89%	5.39%
Live Cattle	8.25%	Live Cattle	8.25%	11.43%
Feeder Cattle	3.47%			
Heating Oil	2.14%	Heating Oil	2.14%	2.96%
Gas Oil	2.68%			
RBOB Gasoline	1.80%	RBOB Gasoline	1.80%	2.49%
WTI Crude Oil	8.78%	WTI Crude Oil	8.78%	12.17%
Brent Crude Oil	9.40%			
Natural Gas	0.91%	Natural Gas	0.91%	1.26%
Aluminum High Grade	6.43%	NA Copper	8.56%	11.87%
NA Copper	8.56%			
Lead	1.05%			
Nickel	1.44%			
Zinc	1.41%			
Gold	8.78%	Gold	8.78%	12.17%
Silver	0.80%	Silver	0.80%	1.11%
Total	100.00%	Total	72.14%	100.00%

Table 4: Current Estimated Nominal Gross Domestic Product for Financial Commodity Rebalance Weights

Financial Sector Weight	Region	GDP (USD Billion)
42.50%	United States	22,286.18
34.56%	European Monetary Union	18,121.94
9.99%	Japan	5,237.20
5.17%	United Kingdom	2,710.34
3.41%	Canada	1,790.30
2.97%	Australia	1,555.83
1.40%	Switzerland	733.03

Nominal GDP estimates from the International Financial Statistics of the IMF

Table 5: Current Weightings

Rebalancing weights recalculate and reset annually, effective on the last business day of January, and applied during the designated February roll period. The official S&P DFI rebalancing weights are shown in the table below:

Market	Market Weights	Sector	Sector Weight	Component	Component Weight
Commodities	50.00%	Energy	9.44	WTI Crude Oil	6.09%
				Heating Oil	1.48%
				RBOB Gasoline	1.25%
				Natural Gas	0.63%
		Industrial Metals	5.93%	NA Copper	5.93%
		Precious Metals	6.64%	Gold	6.08%
				Silver	0.56%
		Livestock	8.41%	Lean Hogs	2.70%
				Live Cattle	5.72%
		Grains	13.55%	Corn	5.73%
				Soybeans	4.44%
				Wheat	3.39%
				Softs	6.01%
		Financials	50.00%		
Cocoa	0.73%				
Sugar	2.71%				
Cotton	1.36%				
Australian Dollar	1.48%				
British Pound	2.58%				
Canadian Dollar	1.71%				
Financials	50.00%			Euro	17.28%
				Japanese Yen	4.99%
				Swiss Franc	0.70%
				U.S. Treasury Notes	10.63%
				U.S. Treasury Bonds	10.63%
				Australian Dollar	1.48%
				British Pound	2.58%
Canadian Dollar	1.71%				
		Euro	17.28%		
		Japanese Yen	4.99%		
		Swiss Franc	0.70%		
		U.S. Treasury Notes	10.63%		
		U.S. Treasury Bonds	10.63%		

Exponential Average Multiplier Schedule

To create an exponential average for comparison, price inputs (percentage change from current and previous six position determination dates, *PDDs*) are weighted using a multiplier per the schedule below, which is based on 1.6⁰, 1.6¹, 1.6², etc.

Number of Months	Multiplier	Weight
7	1	2.32%
6	1.6	3.71%
5	2.56	5.94%
4	4.096	9.51%
3	6.5536	15.22%
2	10.48576	24.34%
1	16.777216	38.95%
Sum	43.072576	100.00%

The weight given to each month is based on its multiplier versus the accumulation of the multipliers. For example, the price seven months prior is 2.32% (1/43.072576), and so on. Therefore, 78.5% of the index's moving average is weighted to the price movements of the last three months, making current price movements more important than those of the more distant past.

Appendix II: Methodology Changes

Change	Effective Date (After Close)	Previous	Methodology Updated
No Short Exemptions	07/31/2012	Prior to the July 2012 rebalancing, energy positions were restricted from short positions.	Beginning with the July 2012 rebalancing, all S&P DFI component positions are determined independently and there is no short exemption for any components.

Appendix III: ESG Disclosures

EXPLANATION OF HOW ENVIRONMENTAL, SOCIAL & GOVERNANCE (ESG) FACTORS ARE REFLECTED IN THE KEY ELEMENTS OF THE BENCHMARK METHODOLOGY¹	
1.	Name of the benchmark administrator. S&P Dow Jones Indices LLC.
2.	Underlying asset class of the ESG benchmark.² 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	
Appendix first publication: January 2021	

¹ 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].

² 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.

Appendix IV: 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 by 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. Also, the treatment of corporate actions in back-tested performance may differ from treatment for live indices due to limitations in replicating index management decisions. 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 data points and relevant time period for which backward projected data was used. Index returns shown do not represent the results of actual trading of investable assets/securities. S&P DJI maintains the index and calculates the index levels and performance shown or discussed but does not manage any assets.

Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the Index or investment funds that are intended to track the performance of the Index. The imposition of these fees and charges would cause actual and back-tested performance of the securities/fund to be lower than the Index performance shown. As a simple example, if an index returned 10% on a US \$100,000 investment for a 12-month period (or US \$10,000) and an actual asset-based fee of 1.5% was imposed at the end of the period on the investment plus accrued interest (or US \$1,650), the net return would be 8.35% (or US \$8,350) for the year. Over a three-year period, an annual 1.5% fee taken at year end with an assumed 10% return per year would result in a cumulative gross return of 33.10%, a total fee of US \$5,375, and a cumulative net return of 27.2% (or US \$27,200).

Intellectual Property Notices/Disclaimer

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