

## Frequently Asked Questions

### S&P Cryptocurrency CME Futures Indices

#### FUTURES

- 1. Why was the S&P Cryptocurrency CME Futures Index Series created?** The S&P Cryptocurrency CME Futures Index Series was launched to bring transparency to the emerging cryptocurrency asset class. The indices are designed to measure the performance of the CME Bitcoin and Ether Futures markets. For more background, visit <https://www.spglobal.com/spdji/en/landing/investment-themes/sp-cryptocurrency-indices/>.
- 2. What indices are in the S&P Cryptocurrency CME Futures Index Series?** As of Jan. 31, 2022, the S&P Cryptocurrency CME Futures Index Series includes the following four indices:
  - [S&P CME Bitcoin Futures Index](#): This index is designed to measure the performance of the CME Bitcoin Futures market.
  - [S&P CME Ether Futures Index](#): This index is designed to measure the performance of the CME Ether Futures market.
  - [S&P Cryptocurrency MegaCap CME Futures Index](#): This index is designed to measure the performance of the CME Bitcoin and CME Ether Futures markets.
  - [S&P CME Bitcoin Futures Daily Roll Index](#): This index is designed to measure the performance of the CME Bitcoin Futures market. It is rebalanced on a daily basis between the front contract and the next month's contract.

See the [S&P Futures Indices Methodology](#) for additional details on these indices.

- 3. Who is S&P DJI's provider for cryptocurrency futures data?** Our cryptocurrency futures pricing is provided by the CME Group. The CME Group owns a 23% equity stake in S&P Dow Jones Indices LLC. For more information about CME cryptocurrency futures, please refer to the website: <https://www.cmegroup.com/markets/cryptocurrencies.html>.

Our cryptocurrency spot pricing and reference data are provided by Lukka, Inc. via its Lukka Prime and Lukka Reference Data products. Lukka covers over 950 crypto assets. For more information about Lukka, please refer to the website: <https://data.lukka.tech/prime/>. For more information about other indices in the S&P Cryptocurrency Index Series, please visit the [S&P Cryptocurrency Indices website](#).

S&P Global, Inc., the parent of S&P Dow Jones Indices LLC, is an investor in Lukka. For information on S&P Global's investment in Lukka, please see [here](#). In addition, representatives of Lukka may provide consultative services to the S&P Digital Assets Index Committee from time to time.

4. **Which cryptocurrencies are covered by the cryptocurrency futures data provider?** As of January 2022, the CME trades Bitcoin and Ether futures contracts.
5. **Are the futures indices calculated on a real-time basis?** Yes. S&P DJI performs intraday index calculations using the CME's real-time exchange-traded futures prices every five seconds. At each fixed interval, the index is computed with the latest real-time pricing for each underlying constituent included in the index. If a new price is not available since the last real-time calculation, the calculation will use the last available traded price provided by the exchange. Please refer to the Real-time Index Calculation section of the [S&P Commodities Indices Policies and Practices Methodology](#) for more information.
6. **What pricing is used as end of day for futures index calculation?** S&P DJI uses the CME's provided settlement prices for official end-of-day index calculations. Please refer to the End-of-Day-Calculations (EOD) section of the [S&P Commodities Indices Policies and Practices Methodology](#).
7. **When are the S&P Cryptocurrency Indices calculated?** In addition to real-time calculations, the indices are calculated at end of day five days a week (Monday through Friday) in U.S. dollars. End-of-day pricing is reported by 6:00 p.m. EST. Index files are published after that time following S&P DJI's standard file delivery format.
8. **Which cryptocurrencies are included in the indices?** The S&P Cryptocurrency CME Futures Indices include Bitcoin and Ethereum.

The S&P Digital Assets Index Committee reserves the right in its sole discretion to cease or suspend publication of an index or remove a digital asset that becomes subject to a legal, regulatory, or practical concern (e.g., because the digital asset may be an unregistered security, allegations of trading manipulation, potential implications of U.S. or other economic sanctions, inclusion of privacy features that may pose anti-money laundering concerns, assets being subject to a hacking event, etc.) or due to potential market disruption. If there is a market disruption, or a disruption with the data provider, the indices are calculated based on the last available price.

9. **How often do the indices rebalance? How does the rebalance process work?** CME Bitcoin and Ether futures contracts roll monthly. S&P DJI publishes daily and monthly rebalanced S&P Cryptocurrency CME Futures Indices.

The daily rebalanced index rebalances (or rolls) on a daily basis between the front contract into the next month futures contracts using an equal percent each day. On t-2 market close—that is, two business days before the expiry of the front contract—the index will be entirely in next month's contract.

The monthly rebalanced indices use a five-day rebalance (or roll) between the front contract into the next month futures contracts, from t-6 to t-2—that is, from six business days through two business days before expiry of the front contract. On t-2 market close—that is, two business days before the expiry of the front contract—the index will be entirely in next month's contract.

**10. How is the S&P Cryptocurrency MegaCap CME Futures Index weighted? How often is the weighting adjusted?** The index is market capitalization weighted, using the allocation of coin supply of the S&P Cryptocurrency MegaCap Index as of the last rebalance date. Using the coin supply value is intended to add stability because exposure will not change when the futures price of the cryptocurrency changes relative to the price of underlying cryptocurrency. Coin supply is the total number of coins mined (or issued) for a given cryptocurrency since inception. See the [S&P Digital Assets Index Mathematics Policies and Practices Methodology](#) for details. The weighting of the indices is adjusted on a quarterly basis.

**11. Can cryptocurrency futures prices deviate from spot prices?** Yes. While futures prices can deviate from spot prices, futures can also add price discovery and price transparency to an emerging market.

**12. How do the S&P Cryptocurrency CME Futures Indices address price spikes or price outliers? What happens if the futures price is significantly different from futures prices at other futures exchanges?** S&P DJI uses pricing from third-party sources for all its indices. Price checks take place at the pricing provider, CME. CME futures trade exclusively on the CME exchange, a regulated market. See question 6 for additional details.

There are other exchanges that trade Bitcoin and Ethereum futures and it is possible that their futures prices may be different from CME's futures pricing.

**13. What types of reference data fields are provided to S&P Cryptocurrency CME Futures Index subscribers?** Subscribers of the S&P Cryptocurrency CME Futures Indices receive the roll weights, contracts, and settlement prices.

**14. How much history is available for these indices?** Back-tested index history for these indices varies based on the constituents, with the earliest inception date being December 2017.

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 applied retroactively. For more information on back-tested history, please see the Performance Disclosure at the end of this document.

## PERFORMANCE DISCLOSURE/BACK-TESTED DATA

S&P Dow Jones Indices 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 Dow Jones Indices 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 S&P DJI's 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 Dow Jones Indices maintains the index and calculates the index levels and performance shown or discussed but does not manage actual 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).

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