

## Frequently Asked Questions

### S&P Cryptocurrency Index Series

#### S&P Cryptocurrency Indices

- 1. What are the [S&P Cryptocurrency Indices](#)?** These indices are designed to measure the performance of a selection of cryptocurrencies, also referred to as “coins” in this document, that meet minimum liquidity and market capitalization criteria and are listed on trading facilities (referred to within this document as “exchanges”) included among the primary markets covered by the Lukka Prime data product published by Lukka, Inc. In the cryptocurrency context, market capitalization refers to the product of coin supply (explained in question 18) at a given point in time multiplied by coin price. The term exchange as used in this FAQ does not refer to a “national securities exchange” that has registered with the Securities Exchange Commission (SEC) or other comparable securities exchange registered in another jurisdiction.
- 2. Why was the S&P Cryptocurrency Index Series created?** The S&P Cryptocurrency Index Series was launched to bring transparency to the emerging cryptocurrency market. For more background, visit <https://www.spglobal.com/spdji/en/landing/investment-themes/sp-cryptocurrency-indices/>.
- 3. What indices are in the S&P Cryptocurrency Index Series?** As of Feb. 4, 2022, the S&P Cryptocurrency Index Series includes the following 16 indices:
  - [S&P Bitcoin Index](#): This index is designed to track the performance of the digital asset Bitcoin.
  - [S&P Ethereum Index](#): This index is designed to track the performance of the digital asset Ethereum.
  - [S&P Cryptocurrency MegaCap Index](#): This index is designed to track the performance of the digital assets Bitcoin and Ethereum weighted by market capitalization.
  - [S&P Cryptocurrency Broad Digital Market \(BDM\) Index](#): This index is designed to measure the performance of digital assets that meet minimum liquidity and market capitalization criteria and that are covered by our price provider Lukka. The index is meant to reflect a broad investable universe.
  - [S&P Cryptocurrency LargeCap Index](#): This index is a subset of the S&P Cryptocurrency BDM Index designed to track the constituents with the largest market capitalization.
  - [S&P Cryptocurrency BDM Ex-MegaCap Index](#): This index is designed to track the constituents of the S&P Cryptocurrency Broad Digital Market Index, excluding the constituents of the S&P Cryptocurrency MegaCap Index.

- [S&P Cryptocurrency BDM Ex-LargeCap Index](#): This index is designed to track the constituents of the S&P Cryptocurrency Broad Digital Market Index, excluding constituents of the S&P Cryptocurrency LargeCap Index.
- [S&P Cryptocurrency LargeCap Ex-MegaCap Index](#): This index is designed to track the large-cap constituents of the S&P Cryptocurrency Broad Digital Market Index, excluding the constituents of the S&P Cryptocurrency Mega Cap Index.
- [S&P Cryptocurrency Top 5 Equal Weight Index](#): This index is equally weighted and seeks to track the performance of the top five cryptocurrencies by market capitalization from the S&P Cryptocurrency Broad Digital Market Index.
- [S&P Cryptocurrency Top 10 Equal Weight Index](#): This index is equally weighted and seeks to track the performance of the top ten cryptocurrencies by market capitalization from the S&P Cryptocurrency Broad Digital Market Index.

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

- [S&P Bitcoin Dynamic Rebalancing Risk Control 40% Index](#): This index seeks to limit the volatility of the S&P Bitcoin Index to a target level of 40% by adjusting the exposure to the underlying index and allocating to U.S. dollars.
- [S&P Ethereum Dynamic Rebalancing Risk Control 40% Index](#): This index seeks to limit the volatility of the S&P Ethereum Index to a target level of 40% by adjusting the exposure to the underlying index and allocating to U.S. dollars.

See the [S&P Risk Control Indices Methodology & Parameters](#) for additional details on these 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 Cryptocurrency CME Futures FAQ](#) and [S&P Futures Indices Methodology](#) for additional details on these indices.

- 4. Why does the series include ex-mega- and ex-large-cap indices?** As of June 30, 2021, the two largest cryptocurrencies comprised approximately 63% of the market capitalization of the total cryptocurrency market.<sup>1</sup> In the recent past, they accounted for over 80% of the total market

<sup>1</sup> Source: Lukka, USD 1.46 trillion, based on 950+ assets priced by Lukka Prime, as of June 30, 2021.

capitalization. By excluding the two largest cryptocurrencies in the S&P Cryptocurrency BDM Ex-MegaCap Index and S&P Cryptocurrency LargeCap Ex-MegaCap Index, smaller index constituents are more broadly reflected. The S&P Cryptocurrency BDM Ex-LargeCap Index is designed to provide perspective on the relatively smaller constituents of the S&P Cryptocurrency BDM Index. The large-cap index accounts for approximately 78% of total cryptocurrency market capitalization.<sup>1</sup>

- 5. Can these indices be customized?** Yes. For information on options for custom versions of the S&P Cryptocurrency Indices or custom crypto index calculation in general, please contact your S&P DJI account representative, or visit <https://www.spglobal.com/spdji/en/contact-us/>.

## Index Data & Licensing

- 6. Who is S&P DJI's provider for cryptocurrency data?** Our cryptocurrency pricing, custody, and reference data are provided by Lukka, Inc. via its Lukka Prime and Lukka Reference Data products. Lukka is a leading crypto asset data services provider for institutions, including fund administrators and fund auditors that serve over 160 active crypto funds as of May 2021. Lukka covers over 950 crypto assets. For more information about Lukka, please refer to the website: <https://data.lukka.tech/prime/>.

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.

- 7. What pricing is used as end-of-day for index calculation?** S&P Dow Jones Indices uses the Lukka Prime Fair Market Value end-of-day price taken at 4:00 p.m. EST for cryptocurrency index calculation. Other end-of-day index levels will be added for additional markets and regions as demand warrants. Lukka's methodology is the first of its kind for designed specifically for determining the fair value pricing of liquid cryptocurrency assets.
- 8. What is Fair Market Value (FMV) Pricing?** The "Lukka Prime" Pricing & Valuation Methodology offers FMV pricing, an actual executed exchange price for liquid crypto assets via a multi-stage process. First, exchanges are pre-screened by Lukka according to its determined criteria such as oversight, efficiency, data transparency, and data integrity. Then, on a real time basis, Lukka designates a representative primary market from the pre-screened exchanges by using a ranking approach. The ranking considers several exchange characteristics—including jurisdiction, oversight and intra-day trading liquidity, and volume—to determine the best available executable price at a point in time for each trading pair of cryptocurrencies (each cryptocurrency can be traded against other currencies or cryptocurrencies, e.g. BTC/USD, BTC/ETH). An executed exchange price is used for each covered asset and represents FMV at a specific time. Read more about FMV [here](#).
- 9. Why use Fair Market Value Pricing?** S&P DJI chose FMV pricing for its indices because it is compatible with how fund assets are valued (for example, many funds holding cryptocurrencies use Lukka FMV data to strike a daily NAV<sup>2</sup>) and because it represents an actual executable price, potentially enhancing tradability for index tracking purposes. In contrast, average prices

<sup>2</sup> Net asset value

(i.e., VWAP<sup>3</sup>) are not considered to be FMV and usually do not exist in the market as tradable prices.

Lukka's FMV Pricing Methodology is designed to align with both U.S. Generally Accepted Accounting Principles (GAAP) and International Financial Reporting Standards (IFRS) guidelines. Additionally, the Lukka Prime infrastructure and data quality adhere to the standards set by the American Institute of Certified Public Accountants (AICPA) for Service Organizations. Lukka was the first AICPA SOC 1 Type 2 and AICPA SOC 2 Type 2 middle and back office crypto service organization.

**10. How do the S&P Cryptocurrency Indices address price spikes or price outliers? What happens if the chosen price is significantly different from other prices at that exchange or from comparable ones?**

S&P DJI uses pricing for all its indices from third-party sources. Many of the price checks take place at the pricing provider, Lukka, while S&P DJI employs its own price validation protocols as well.

Lukka, through its Lukka Prime methodology, algorithmically evaluates and eliminates (when appropriate) price spikes and outliers in trade data. Parameters are set so that the Lukka Prime price, an FMV price, does not deviate significantly from crypto market trading activity.

Lukka conducts both algorithmic and manual quality checks during and after the creation of Lukka Prime prices. These checks evaluate items such as data quality from the member exchanges and significant price deviation from market trading activity. This also includes volatility checks and basic market comparisons. See Lukka Prime FAQs [here](#) for additional detail.

In addition, S&P DJI performs independent quality checks as a second layer of validation to those employed by Lukka, including checks against assets with large movements, assets with unchanged prices, and assets that have ceased pricing. S&P DJI may submit a price challenge to Lukka if it deems the day over day variance from the Lukka price to be material. Lukka will perform an independent review of the price challenge to ensure the price is representative of the fair value of a particular cryptocurrency. If there is a change, the process will follow that described in the Recalculation Policy found on the [S&P Digital Assets Index Mathematics Policies and Practices Methodology](#).

**11. Which cryptocurrencies are covered by the cryptocurrency data provider?** Lukka Prime covers over 900 assets, representing the most liquid crypto assets, including the top-traded cryptocurrencies such as Bitcoin, Ethereum, Tether, and Litecoin. As of July 13, 2021, prices are compiled from approximately 10 exchanges that represent a large portion of market liquidity and pass Lukka's screening tests. For the current list of exchanges, see Lukka Prime FAQs [here](#).

**12. What types of reference data fields are provided to S&P Cryptocurrency Index subscribers?** In addition to pricing data, subscribers of the S&P Digital Market Indices receive

<sup>3</sup> Volume weighted average price

Lukka-sourced constituent level on-exchange trading volume, coin supply, and market capitalization data.

- 13. 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 January 2014.

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.

- 14. Which cryptocurrencies are included in the indices?** The [S&P Digital Market Indices Methodology](#) describes the eligibility criteria for inclusion of a cryptocurrency in the indices. To be eligible for inclusion, coins must be priced by Lukka's Prime Pricing services. Assets that are priced by this service are traded on Lukka's pre-screened exchanges only.

In addition, the coins must meet minimum liquidity and market capitalization requirements and have a supporting white paper. Stablecoins and other pegged digital assets are excluded.

The S&P Digital Assets Index Committee reserves the right in its sole discretion to cease or suspend publication of an index and/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 calculate based on the last available price.

- 15. When are the S&P Cryptocurrency Indices calculated?** The indices are calculated 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 follow S&P DJI's standard file delivery format.

- 16. How often do the indices rebalance? Are the indices ever adjusted between rebalances?** The indices rebalance quarterly. Traditionally, equity indices are adjusted by corporate actions. Digital assets do not currently have corporate actions per se, but certain events, such as forks, do affect cryptocurrencies and the underlying index may be adjusted accordingly depending on the specifics of the event.

- 17. How are the indices weighted?** The S&P Cryptocurrency Top 5 and Top 10 Equal Weight Indices are equally weighted, and the rest, except for the single coin indices, are market capitalization weighted. As previously mentioned, in the cryptocurrency context, market capitalization refers to the product of coin supply at a given point in time multiplied by coin price.

- 18. What is coin supply? Where does S&P DJI source that data? How is it used for weighting?** Coin supply is the total number of coins mined (or issued) for a given cryptocurrency since inception. Lukka is our source for coin supply data. Coin supply varies in real time due to factors such as the mining process built into the respective blockchain. Coin supply may differ from the actual number of coins in circulation due to coin destruction (also

known as coin burning) or lost coins, which may occur from time to time but for which there is no accepted tracking method.

To calculate a market-capitalization-weighted index, S&P DJI has implemented the concept of “Effective Coin Supply.” Effective Coin Supply is determined every rebalancing reference date and set equal to coin supply at that point in time. In periods between rebalance reference dates, the Effective Coin Supply is the same as the Effective Coin Supply as of the last rebalance. See the [S&P Digital Assets Index Mathematics Policies and Practices Methodology](#) for details.

- 19. How does S&P DJI determine the constituents of the S&P Cryptocurrency Broad Digital Market Index?** For the S&P Cryptocurrency Broad Digital Market Index, the constituent coins must meet a minimum liquidity requirement (i.e., a three-month median daily value traded [MDVT] of USD 100,000) and market capitalization requirements (i.e., greater than or equal to USD 10 million). See question 14 for additional details on overall eligibility.
- 20. How does S&P DJI determine the constituents for the S&P Cryptocurrency LargeCap Index?** The constituents include the largest and most liquid cryptocurrencies that meet S&P DJI’s coin eligibility criteria. Because the cryptocurrency market is especially dynamic, the use of fixed ratios to determine market capitalization thresholds is quickly outdated. Instead, the indices use a clustering algorithm to select the constituents that belong to the large capitalization set. The algorithm is a version of a k-Means algorithm based on the logarithm of market capitalization. See the [methodology](#) for additional details.
- 21. How does S&P DJI determine the constituents for the S&P Cryptocurrency Top 5 and Top 10 Equal Weight Indices?** The constituents include either the 5 or 10 largest and most liquid cryptocurrencies that meet S&P DJI’s coin eligibility criteria. The constituent coins must meet a minimum liquidity requirement (i.e., a three-month MDVT of USD 1 million, or USD 500,000, respectively, for current constituents). In addition, each constituent must have at least two custodians, as reported quarterly by our cryptocurrency price provider, that meet the minimum technology and information security requirements. Current minimum requirements include (multi-party computing (MPC) or Multi-Signature (MultiSig) for technology security and ISO 27001 or SOCII for information security. Coins not meeting these criteria are excluded from these indices.
- 22. Why is it important that a constituent coin in the S&P Cryptocurrency Top 5 and Top 10 Equal Weight Indices have a custody requirement?** The technology behind cryptocurrency custody is evolving. There are unfamiliar risks with cryptocurrencies (including, but not limited to, potential for hacks and lost private keys) that may require specialized operational and technology security. Independent third-party custody may help reduce certain risks of holding cryptocurrencies. Since there is no official ranking system or association for cryptocurrency custodians at this point in time (January 2022), we have used the technology and information security attributes described above to identify robust custodians.

Appropriate custody may make it easier for certain institutions to hold index constituents and build investment products, thereby enhancing the investability of the indices.

**23. How does the custodian requirement work in the back-test?** For their history prior to launch, the indices did not include a custody requirement as an element of eligibility. History is based on the index constituents that met the custody element as of the launch date.

The indices employ a “backward data assumption” method for custodian data sourced by our cryptocurrency price provider used in the derivation of historical index membership prior to the index launch. This method involves applying the earliest available actual live data point for an index constituent to all prior historical instances of that constituent in the index universe. For more information on back-tested data, please see our Performance Disclosure at the end of this document.

## RISK CONTROL

**24. Why was the Cryptocurrency Risk Control Index Series created?** The S&P Cryptocurrency Risk Control Index Series seeks to limit the volatility of the most liquid S&P Cryptocurrency Indices. For more background, visit <https://www.spglobal.com/spdji/en/landing/investment-themes/sp-cryptocurrency-indices/>.

**25. What does the 40% refer to in the index name? Why is this percentage higher when compared with equity indices?** The S&P Bitcoin Dynamic Rebalancing Risk Control 40% Index and the S&P Ethereum Dynamic Rebalancing Risk Control 40% Index seek to limit the volatility of the underlying index to a target level of 40%. The indices do so by adjusting the exposure to the underlying index and allocating to U.S. dollars. Please refer to the Risk Control Indices section of [S&P Index Mathematics Methodology](#) for additional details.

Cryptocurrencies such as Bitcoin and Ethereum have been relatively volatile historically, and the 40% reflects this high volatility compared with that of equities or other asset classes. The use of a lower target volatility level may result in a dominant position in the lower risk asset, in this case U.S. dollars.

**26. Why is the lower risk asset not a stablecoin?** While stablecoins are an important part of the cryptocurrency ecosystem, stablecoins are not considered to have sufficient history at this point for a back-test. In addition, stablecoin interest rates may vary widely depending on the trading platform used, and there is no set defined rate. Because risk control indices use an interest rate to calculate the return of the cash allocation, in the cryptocurrency risk control indices, we use the U.S. dollar with the Secured Overnight Financing Rate (SOFR) for this purpose.

**27. How does dynamic rebalancing work?** The risk control indices are rebalanced on a dynamic basis. There is no fixed rebalance schedule. Instead, the indices are rebalanced when a threshold based on exposure is crossed.

**28. How are the indices calculated? What parameters are included?** The calculation uses several parameters including target volatility, threshold, and interest rate. Please refer to the [S&P Risk Control Indices Methodology & Parameters](#) for current parameters and to the S&P Risk Control Indices section of [S&P Index Mathematics Methodology](#) for calculation details.

## OTHER

**29. Why is it important that a constituent coin has a “white paper”?** A “white paper” in this context refers to a detailed technical document created by a cryptocurrency’s project founders that discusses the concepts, goals, and future roadmap of the cryptocurrency. A cryptocurrency project with a white paper suggests that the project founders have done the research and supplied the data to demonstrate why cryptocurrency will likely become adopted.

**30. Does S&P DJI examine the Know your Customer (KYC) and Anti-Money Laundering (AML) features of index constituents?** Coins themselves do not generally have KYC or AML features. Depending on specific jurisdictional legal requirements, KYC and AML generally occur at the exchange level for the coin trader. As part of its process, Lukka screens out exchanges that Lukka considers not to provide proper oversight with respect to KYC/AML. The Lukka Prime steering committee holistically reviews the exchange composition on a quarterly basis, at a minimum. The S&P Digital Assets Index Committee also reserves the right to remove a digital asset that becomes subject to a regulatory or legal concern, such as the inclusion of privacy features that may pose anti-money laundering concerns.

**31. What are the major risks associated with cryptocurrencies?** The risks associated with trading cryptocurrencies are generally considered to include, but are not limited to, the following.

- **Price Volatility:** Digital assets have historically experienced significant intraday and long-term price swings.
- **Spot Markets:** The spot markets through which cryptocurrencies trade are new and largely unregulated. Furthermore, many spot markets and over-the-counter market venues do not provide the public with significant information regarding their ownership structure, management teams, corporate practices, or oversight of customer trading. As a result, the marketplace may lose confidence in, or may experience problems relating to, these venues. Spot markets may impose daily, weekly, monthly, or customer-specific transaction or withdrawal limits, or suspend withdrawals entirely, rendering the exchange of bitcoin for fiat currency difficult or impossible. Participation in spot markets requires users to take on credit risk by transferring bitcoin from a personal account to a third party’s account.
- **Market Adoption:** It is possible that digital assets generally, or any digital asset in particular, will never be broadly adopted by either the retail or commercial marketplace, in which case, one or more digital assets may lose most, if not all, of its value.
- **Government Regulation:** The regulatory framework of digital assets remains unclear and application of existing regulations and/or future restrictions by international, federal, and state authorities may have a significant impact on the value of digital assets.
- **Security:** There have been significant incidents of digital asset theft and digital assets remain a potential target for hackers. Digital assets that are lost or stolen cannot be replaced, as transactions are irrevocable.
- **Other:** Digital assets are susceptible to error and can be affected by forks, discontinuation, and/or suspension in trading

**32. Where can I obtain more information about the S&P Cryptocurrency Indices?** Learn more about the S&P Cryptocurrency Indices [here](#). For further information, please see the [S&P Digital Market Indices Methodology](#). For more information on index calculation, please refer to [S&P Digital Assets Index Mathematics Policies and Practices Methodology](#).

Also, for more information on the S&P Cryptocurrency Index Series constituents, please contact your S&P DJI account representative, or visit <https://www.spglobal.com/spdji/en/contact-us/>.

## 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).

## INTELLECTUAL PROPERTY NOTICES/DISCLAIMER

© 2022 S&P Dow Jones Indices. All rights reserved. S&P, S&P 500, S&P 500 LOW VOLATILITY INDEX, S&P 100, S&P COMPOSITE 1500, S&P 400, S&P MIDCAP 400, S&P 600, S&P SMALLCAP 600, S&P GIVI, GLOBAL TITANS, DIVIDEND ARISTOCRATS, S&P TARGET DATE INDICES, S&P PRISM, S&P STRIDE, GICS, SPIVA, SPDR and INDEXOLOGY are registered trademarks of S&P Global, Inc. ("S&P Global") or its affiliates. DOW JONES, DJ, DJIA, THE DOW and DOW JONES INDUSTRIAL AVERAGE are registered trademarks of Dow Jones Trademark Holdings LLC ("Dow Jones"). These trademarks together with others have been licensed to S&P Dow Jones Indices LLC. Redistribution or reproduction in whole or in part are prohibited without written permission of S&P Dow Jones Indices LLC. This document does not constitute an offer of services in jurisdictions where S&P Dow Jones Indices LLC, S&P Global, Dow Jones or their respective affiliates (collectively "S&P Dow Jones Indices") do not have the necessary licenses. Except for certain custom index calculation services, all information provided by S&P Dow Jones Indices is impersonal and not tailored to the needs of any person, entity or group of persons. S&P Dow Jones Indices receives compensation in connection with licensing its indices to third parties and providing custom calculation services. Past performance of an index is not an indication or guarantee of future results.

It is not possible to invest directly in an index. Exposure to an asset class represented by an index may be available through investable instruments based on that index. S&P Dow Jones Indices does not sponsor, endorse, sell, promote or manage any investment fund or other investment vehicle that is offered by third parties and that seeks to provide an investment return based on the performance of any index. S&P Dow Jones Indices makes no assurance that investment funds or vehicles based on the index will accurately track index performance or provide positive investment returns. S&P Dow Jones Indices LLC is not an investment advisor, commodity trading advisor or commodity pool operator and S&P Dow Jones Indices makes no representation regarding the advisability of investing in any such investment fund or other investment vehicle. A decision to invest in any such investment fund or other investment vehicle should not be made in reliance on any of the statements set forth in this document. Prospective investors are advised to make an investment in any such fund or other vehicle only after carefully considering the risks associated with investing in such funds, as detailed in an offering memorandum or similar document that is prepared by or on behalf of the issuer of the investment fund or other investment product or vehicle. S&P Dow Jones Indices LLC is not a tax advisor. A tax advisor should be consulted to evaluate the impact of any tax-exempt securities on portfolios and the tax consequences of making any particular investment decision. Inclusion of a security or other asset within an index is not a recommendation by S&P Dow Jones Indices to buy, sell, or hold such security or other asset, nor is it considered to be investment advice or commodity trading advice.

These materials have been prepared solely for informational purposes based upon information generally available to the public and from sources believed to be reliable. No content contained in these materials (including index data, ratings, credit-related analyses and data, research, valuations, model, software or other application or output therefrom) or any part thereof ("Content") may be modified, reverse-engineered, reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of S&P Dow Jones Indices. The Content shall not be used for any unlawful or unauthorized purposes. S&P Dow Jones Indices and its third-party data providers and licensors (collectively "S&P Dow Jones Indices Parties") do not guarantee the accuracy, completeness, timeliness or availability of the Content. S&P Dow Jones Indices Parties are not responsible for any errors or omissions, regardless of the cause, for the results obtained from the use of the Content. THE CONTENT IS PROVIDED ON AN "AS IS" BASIS. S&P DOW JONES INDICES PARTIES DISCLAIM ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT'S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall S&P Dow Jones Indices Parties be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs) in connection with any use of the Content even if advised of the possibility of such damages.

S&P Global keeps certain activities of its various divisions and business units separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain divisions and business units of S&P Global may have information that is not available to other business units. S&P Global has established policies and procedures to maintain the confidentiality of certain non-public information received in connection with each analytical process.

In addition, S&P Dow Jones Indices provides a wide range of services to, or relating to, many organizations, including issuers of securities, investment advisers, broker-dealers, investment banks, other financial institutions and financial intermediaries, and accordingly may receive fees or other economic benefits from those organizations, including organizations whose securities or services they may recommend, rate, include in model portfolios, evaluate or otherwise address.