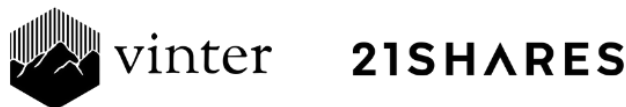


# Methodology

## Vinter 21Shares Crypto Indexes

Index Methodology



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## Introduction

The Vinter 21Shares Crypto Indexes are a family of benchmarks, owned by 21Shares. The indexes are developed to provide a rule-based and transparent way to track the value of a portfolio. Each index measures the value of an investment strategy.

This methodology clearly determines what constitutes an active market for the purposes of each index, and establishes the priority given to different types of input data. The methodology takes into account factors like the size and liquidity of the market, the transparency of trading, the positions of market participants, market concentration, and the adequacy of any sample to represent the market or economic reality that the benchmark is intended to measure.

21Shares AG ("21Shares") makes investing in crypto assets as easy as buying shares using your conventional broker or bank. Founded in 2018, 21Shares is led by a team of talented serial entrepreneurs and experienced banking professionals from the technology and financial world. Incorporated in Zug, with offices in Zurich and New York, the company has launched several world firsts, including the first listed crypto basket index ETP in November 2018. Learn more at [21shares.com](https://21shares.com).

Invierno AB ("Vinter") is a pioneering index provider specialized in crypto assets, playing a key role in the emerging crypto ETF industry. The firm collects digital asset data from hundreds of sources, transforming proprietary strategies into investable products. Learn more at [vinter.co](https://vinter.co).

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## Indexes

### HODLV

The Vinter 21Shares Crypto Basket Equal Weight Index ("HODLV") contains the five largest crypto assets, all weighted equally. HODLV is a mean-reversion strategy since assets are weighted equally and rebalanced quarterly.

## Construction

- **Asset universe:** Eligible constituents that are in the top 15 ranked coins by market capitalization at the time of inclusion.
- **Asset selection:** Top 5 by 90 days average market capitalization.
- **Rebalance weights:** Equal weighted.
- **Rebalanced:** Quarterly, starting end of January.
- **Rationale:** Invests in the largest assets with a mean reversion strategy; gains are realized at every rebalancing, and underperforming assets are bought.

## Details

- **Currency:** USD
- **Type:** Price return
- **Base date:** 2021-01-01
- **Base value:** 1000.00
- **Dissemination:** Daily 17:00 Central European Time

## Identifiers

- **Long name:** Vinter 21Shares Crypto Basket Equal Weight Index
- **Short name:** HODLV
- **ISIN:** SE0016830608
- **FIGI:** BBG012MV86K7
- **Bloomberg:** HODLV
- **Refinitiv:** .HODLV
- **Vinter API:** vntw-hodlv-5-d

## HODLX

The Vinter 21Shares Crypto Basket 10 Index ("HODLX") is a passive index capturing the crypto asset market. It offers a diversified exposure to the ten largest crypto assets. HODLX is a buy-and-hold strategy for passive investors. The index is rebalanced quarterly.

## Construction

- **Asset universe:** Eligible constituents that are in the top 15 ranked coins by market capitalization at the time of inclusion.
- **Asset selection:** Top 10 by 90 days average market capitalization.
- **Rebalance weights:** Current market capitalization.
- **Rebalanced:** Quarterly, starting end of January.
- **Rationale:** A passive index capturing the crypto market.

### Details

- **Currency:** USD
- **Type:** Price return
- **Base date:** 2021-01-01
- **Base value:** 1000.00
- **Dissemination:** Daily 17:00 Central European Time.

### Identifiers

- **Long name:** Vinter 21Shares Crypto Basket 10 Index
- **Short name:** HODLX
- **ISIN:** SE0016830590
- **FIGI:** BBG012MV85F5
- **Bloomberg:** HODLX
- **Refinitiv:** .HODLX
- **Vinter API:** vntw-hodlx-10-d

### HODLXUS

The difference between HODLX and HODLXUS is the addition of one [eligibility criteria](#) that currently excludes XRP.

The Vinter 21Shares Crypto Basket 10 US Index ("HODLXUS") is a passive index capturing the crypto asset market. It offers a diversified exposure to the ten largest crypto assets. HODLXUS is a buy-and-hold strategy for passive investors. The index is rebalanced quarterly.

### Construction

- **Asset universe:** Eligible constituents that are in the top 15 ranked coins by market capitalization at the time of inclusion.
- **Asset selection:** Top 10 by 90 days average market capitalization.
- **Rebalance weights:** Current market capitalization.
- **Rebalanced:** Quarterly, starting end of January.
- **Rationale:** A passive index capturing the crypto market.

### Details

- **Currency:** USD
- **Type:** Price return
- **Base date:** 2021-01-01
- **Base value:** 1000.00
-

**Dissemination:** Daily 17:00 Central European Time

#### *Identifiers*

- **Long name:** Vinter 21Shares Crypto Basket 10 US Index
- **Short name:** HODLXUS
- **ISIN:** SE0017483589
- **FIGI:** BBG014MSPM17
- **Bloomberg:** HODLXUS
- **Refinitiv:** .HODLXUS
- **Vinter API:** vntw-hodlxus-10-d

#### **ALTS**

The Vinter 21Shares Crypto Mid-Cap Index ("ALTS") is a passive index capturing the mid-cap portion of the crypto asset market. The index offers diversified exposure to the largest crypto assets but excludes the number one and two ranked crypto assets by market capitalization, resulting in a substantially larger weight in the remaining eight constituents.

#### *Construction*

- **Asset universe:** Eligible constituents that are in the top 15 ranked coins by market capitalization at the time of inclusion.
- **Asset selection:** Eight assets ranked 3-10 by 90 days average market capitalization (i.e., select the top 10 and then exclude the two largest assets).
- **Rebalance weights:** Current market capitalization.
- **Rebalanced:** Quarterly, starting end of January.
- **Rationale:** Capture the mid-cap crypto assets by starting with a top 10 index and then excluding the two largest assets.

#### *Details*

- **Currency:** USD
- **Type:** Price return
- **Base date:** 2021-01-01
- **Base value:** 1000.00
- **Dissemination:** Daily 17:00 CET

#### *Identifiers*

- **Long name:** Vinter 21Shares Crypto Mid-Cap Index
- **Short name:** ALTS
- **ISIN:** SE0017132293

- **FIGI:** BBG013PZ2Z34
- **Bloomberg:** ALTS
- **Refinitiv:** .ALTS
- **Vinter API:** vntw-alts-8-d

## ALTSUS

The difference between ALTS and ALTSUS is the addition of one [eligibility criteria](#) that currently excludes XRP.

The Vinter 21Shares Crypto Mid-Cap US Index ("ALTSUS") is a passive index capturing the mid-cap portion of the crypto asset market. The index offers diversified exposure to the largest crypto assets but excludes the number one and two ranked crypto assets by market capitalization, resulting in a substantially larger weight in the remaining eight constituents.

### *Construction*

- **Asset universe:** Eligible constituents that are in the top 15 ranked coins by market capitalization at the time of inclusion.
- **Asset selection:** Eight assets ranked 3-10 by 90 days average market capitalization (i.e., select the top 10 and then exclude the two largest assets).
- **Rebalance weights:** Current market capitalization.
- **Rebalanced:** Quarterly, starting end of January.
- **Rationale:** Capture the mid-cap crypto assets by starting with a top 10 index and then excluding the two largest assets.

### *Details*

- **Currency:** USD
- **Type:** Price return
- **Base date:** 2021-01-01
- **Base value:** 1000.00
- **Dissemination:** Daily 17:00 Central European Time

### *Identifiers*

- **Long name:** Vinter 21Shares Crypto Mid-Cap US Index
- **Short name:** ALTSUS
- **ISIN:** SE0017483571
- **FIGI:** BBG014MSTT36
- **Bloomberg:** ALTSUS
- **Refinitiv:** .ALTSUS
- **Vinter API:** vntw-altsus-8-d

## LAYER1

The Vinter 21Shares Crypto Layer 1 Index (“LAYER1”) invests in the largest layer 1 blockchain assets. The weights are proportional to market capitalization, capped at 30% per asset to promote diversification.

### *Construction*

- **Asset universe:** Eligible constituents that are in the top 15 ranked coins by market capitalization at the time of inclusion.
- **Asset selection:** Up to top ten layer-1 crypto assets by 90-day average market capitalization. Rebalancing weights: Current market capitalization, capped at 30%. If a cap is enforced, the weight is spread proportionally across the non-capped assets.
- **Rebalanced:** Quarterly, starting end of January.
- **Rationale:** Invest in the largest layer 1 crypto assets, as these blockchains provide the technical foundations for the entire crypto market.

### *Identifiers*

- **Long name:** Vinter 21Shares Crypto Layer 1 Index
- **Short name:** LAYER1
- **ISIN:** SE0017937055
- **FIGI:**
- **Bloomberg:**
- **Refinitiv:** .LAYER1
- **Vinter API:** vntw-lay1-10-d

### *Details*

- **Currency:** USD
- **Type:** Price return
- **Base date:** 2021-01-01
- **Base value:** 1000.00
- **Dissemination:** Daily 17:00 Central European Time

## DEFII

The Vinter 21Shares DeFi 10 Infrastructure Index (“DEFII”) includes both the decentralized applications and their underlying blockchains in the decentralized finance (“DeFi”) category. DeFi is a general term for permissionless financial services. Users of decentralized apps (“dApps”) can borrow, lend, trade derivatives, swap assets and perform other financial services - without permission, paperwork or a trusted third party.

### *Construction*

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**Asset universe:** Eligible constituents in the DeFi category.

- **Asset selection:** First, select up to five assets in the DeFi dApps category. Second, select up to five assets in the DeFi blockchain category. In both steps, select the top assets by 90-day average market capitalization.
- **Rebalancing weights:** 50% DeFi dApps and 50% DeFi blockchains, then market cap weighted within each set.
- **Rebalanced:** Quarterly, starting end of January.
- **Rationale:** A thematic index riding on the decentralized finance wave, that invests in the largest decentralized applications and blockchains.

#### *Details*

- **Currency:** USD
- **Type:** Price return
- **Base date:** 2021-01-01
- **Base value:** 1000.00
- **Dissemination:** Daily 17:00 Central European Time

#### *Identifiers*

- **Long name:** Vinter 21Shares DeFi 10 Infrastructure Index
- **Short name:** DEFII
- **ISIN:**
- **FIGI:**
- **Bloomberg:** DEFII
- **Refinitiv:** .DEFII
- **Vinter API:** vntw-defii-10-d

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## Index Construction

### **Asset Universe**

The default asset universe consists of all eligible constituents. It is possible to restrict the universe to certain categories of assets.

### **Asset Selection**

The index constituents are selected from the asset universe. The selection process can be based on a number of factors such as returns, volatility, market capitalization, trading volume, or a combination thereof.

Assets are selected on the review date, which is five business days prior to the rebalancing date.

The default asset selection criteria is to include the largest assets as determined by market capitalization.

If it is not possible to reach the intended number of constituents, the Index Committee can decide to either include non-eligible constituents or allow the index to have fewer constituents than intended. The decision shall be made publicly available.

## **Rebalance Weights**

The rebalance weights (sometimes called target weights) can be determined based on a number of factors such as returns, volatility, market capitalization, trading volume, or a combination thereof - with or without smoothing over time. Caps and floors can be included.

Rebalancing weights are calculated on the review date.

The default is a market capitalization weighted index, in which each asset is weighted by its portion of the total market capitalization of all index constituents.

The rebalance weight per asset is unchanged between rebalances.

## **Rebalancing**

All indexes are rebalanced periodically, by default quarterly, with the rebalancing date set to the last business day of the month. Rebalancing involves a selection of constituents and a calculation of their rebalance weights. Calculations are done using the closing prices on the rebalancing date. The new quantities per asset are used on the opening of the day after rebalancing. After the rebalance, the portfolio's weights per asset are updated so that they equal the rebalance weights per asset.

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## **Eligible Constituents**

Crypto-assets trading on eligible exchanges are eligible as index constituents if they:

1. are a cryptographically secured digital bearer instrument;
2. are not index tokens, stablecoins or pegged to another asset such as currencies or commodities;
3. are not an ongoing Initial Coin Offering;
4. are not deemed a security or fraudulent by a public financial regulatory authority with jurisdiction over the constituent or its wrapper;
5. are supported by the industry including market makers, custodians and regulated exchanges;
6. can be deposited to and withdrawn from least two eligible exchanges;
7. are freely traded and can be freely held for the foreseeable future;
8. have a trading volume that exceeds USD 20 million;
9. allow for cold storage;
10. trade against a G10 currency (AUD, CAD, EUR, JPY, NZD, NOK, GBP, SEK, CHF, USD); and
11. are not designed to be private.



For [HODLXUS](#) and [ALTSUS](#), an additional criteria is required: the asset must not be under investigation, in pending or current litigation by a public financial regulatory authority with jurisdiction over the constituent or its wrapper

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## Calculation

The index value is given by the weighted sum over all constituents of quantity times price divided by a divisor.

The quantity per asset is unchanged between rebalances and is set such that the rebalance weight per asset is reached after rebalancing. The divisor enforces index continuity on rebalancing. It includes a daily accrued fee, by default set to zero. The divisor is defined so that the index starts at a certain start value, which ensures each index tracks the value of a certain amount of capital invested on the start date.

A business day is a day when the SIX stock exchange is open for trading.

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## Constituent Pricing

Assets are priced using [Vinter's single asset indexes](#), which are price return indexes. The Benchmark Statement of this methodology defines the eligibility criteria for input data used to determine the benchmark.

The Vinter daily fixing ("VFIX") is used, by default 4 pm London time (17:00 CET). HODLXUS and ALTSUS use 4 pm Eastern Time.

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## Market Capitalization

The market capitalization is given by price times circulating supply. For Proof-of-Work crypto assets, a block explorer is used to get the circulating supply. For crypto assets issued on smart contract platforms, such as ERC20 issued on Ethereum, the circulating supply is calculated by starting with the total supply and removing the locked tokens e.g. those held by the founding organization.

If the above is insufficient or inapplicable to determine the circulating supply, other readily available data sources determined by the Company's Product Maintenance Department might be considered.

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## Administration

The Benchmark Administrator is the central recipient of input data with the ability to evaluate the integrity and accuracy of input data on a consistent basis. The Benchmark Administrator is responsible for the development of the indexes and controls all aspects of the provision of benchmarks. The Benchmark Administrator has established a permanent and effective oversight function, governance processes subject to periodic reviews and audits, policies regarding complaints, ethics, conflicts of interest and contingency,

and has established a clear internal organizational structure with consistent roles and responsibilities to identify, prevent, disclose, mitigate, and manage conflicts of interest.

The Calculation Agent is an individual or entity that is responsible for determining the value of an index and/or a financial instrument. The Calculation Agent calculates the index values in accordance with the index methodology. Upon the request of the Benchmark Administrator, the Calculation Agent shall provide all information available on the composition and details of the calculation of the requested index.

The Publication Agent is an entity responsible for the publication of index values to dissemination platforms.

Vinter is the benchmark administrator, calculation agent and publication agent of this index family.

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## Roles

- **Index owner:** 21Shares
  - **Calculation agent:** Vinter
  - **Benchmark administrator:** Vinter
  - **Publication agent:** Vinter
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## Document Versions

Version 1.0 Initial version. September 10, 2021.

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## Disclaimer

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