

Methodology

Vinter ByteTree BOLD Indexes

Index Methodology



Introduction

The Vinter ByteTree BOLD Indexes are a family of benchmarks, owned by ByteTree Asset Management Limited. The indexes are developed to provide a rule-based and transparent way to track the value of a portfolio consisting of Bitcoin and Gold. Each index measures the value of an investment strategy.

ByteTree Asset Management is a research-driven investment adviser, ready for the opportunities and challenges that a world of digital assets presents. ByteTree extracts and applies data directly from the bitcoin network to give optimal investment outcomes. Building on ground-breaking analysis since 2014, ByteTree provides investment solutions that combine robust operational infrastructure with rigorous analysis of the underlying ecosystem.

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.

For questions, comments and inquiries please email hello@vinter.co

Indexes

BOLD1

The Vinter ByteTree BOLD1 Inverse Volatility Index ("BOLD1") contains bitcoin and gold, weighted such that an equal amount of risk is invested into both assets. The more volatile bitcoin is (relative to gold) the lower the target weight in bitcoin.

Periodic rebalancing brings the current weight to the target weights. The weight in bitcoin is proportional to its inverse volatility, and calculated by

$$\frac{1/\sigma_B}{1/\sigma_B + 1/\sigma_G}$$

where σ_B, σ_G is the 360 days volatility of bitcoin and gold, respectively. The target weight of gold is one minus the target weight in bitcoin.

Construction

- **Asset universe:** Bitcoin and gold.
- **Asset selection:** Bitcoin and gold.
- **Target weights:** Proportional to the inverse volatility, so that an equal amount of risk is allocated to both assets.
- **Rebalanced:** Monthly on the last business day of the month.

Identifiers

- **Ticker:** BOLD1
- **Long name:** Vinter Bytetree BOLD1 Inverse Volatility Index
- **Bloomberg:** BOLD1
- **Refinitiv:** .BOLD1
- **ISIN:** SE0016831127
- **Vinter API:** vnby-bold1-2-d

Details

- **Currency:** USD
- **Type:** Price return
- **Dissemination:** Daily 17:00 Central European Time

Index Construction

Target Weights

In the calculation of target weights, data up to five business days prior to the rebalancing date is used.

The target weight per asset is unchanged between rebalances.

Rebalancing

All indexes are rebalanced periodically, by default monthly, with the rebalancing date set to the last business day of the month. Rebalancing involves a selection of constituents and calculation of their target 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 target weights per asset.

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 target 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.

Constituent Pricing

Bitcoin is priced using the [Vinter single asset](#) reference rate.

Gold is priced using the [LBMA Gold Price PM](#).

Both prices are denominated in USD and published at 3 pm London time.

Index Provider

Invierno AB, Reg. No. 559207-4172, Box 5193, 10244 Stockholm, Sweden ("Vinter")

Benchmark Administrator

Vinter is the benchmark administrator of the Vinter ByteTree BOLD Indexes and the central recipient of input data with the ability to evaluate the integrity and accuracy of input data on a consistent basis. Vinter is responsible for the development of the index and controls all aspects of the provision of the benchmark. Vinter 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 European Securities and Markets Authority has included Invierno AB in its register of Benchmark Administrators approved to carry on the regulated activity of administering a benchmark.

Calculation Agent

Vinter is the calculation agent of the Vinter ByteTree BOLD Indexes and is responsible for determining the value of the index described in the index methodology. Vinter 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.

Document Versions

Version 1.0

Initial version. December 30, 2020.

Version 1.1

March 1, 2021. Changed from fixed weights per asset to inverse volatility weighting.

Disclaimer

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