

BVC16 Index Calculation Methodology Introduction

In this section, we will outline the compilation rule of the BVC 16 index. Through a prudent token sample selection and exclusive optimization process, BVC16 index will assign more weight to tokens with higher expected returns and reduce the allocation of tokens with higher risk factors and transaction costs.

1.Token Selection Method

The BVC16 index includes 16 tokens overall for three types of indicators, representing the overall market trend, industry base and value potential: value token for 50%, public chain for 30% and growth token for 20%.

In the selection process, the BVC16 index portfolio is filtered from 1264 tokens currently on the market. Through the backtesting and research on indicators such as liquidity test* and correlation test**, the current 16 tokens are dynamically selected as index components.

2.Index Calculation

2.1 Base Period

The BVC16 index starts at UTC 0 o'clock on July 17th, 2018. The base index is 10000 points.

2.2 Index Calculation Method

The BVC16 index is composed of market cap and volatility, respectively accounting for 50% each.

From the perspective of market cap, the BVC16 index will assimilate the first day average market cap monthly in the first half of 2018 as the weight of the corresponding token. The calculation formula for this part is:

$$q_i = \frac{\sum_{j=1}^6 p_{ij}}{\sum_{j=1}^6 p_{1j} + \sum_{j=1}^6 p_{2j} + \dots + \sum_{j=1}^6 p_{16j}}$$

* The liquidity test runs by simulating the liquidity of a token based on that can be carried by a single token through backtesting to determine whether the liquidity of the BVC16 index can be satisfied.

**The correlation test runs by calculating the correlation coefficient for all the alternative currencies in the past 6 months in order to increase the validity.

q_i stands for the ratio of its representing token in the token allocation; t_{ij} stands for the closing price (UTC time) of the representing token on the first day of the corresponding month.

From the perspective of volatility, the BVC16 index adopts the standard deviation ratio of the monthly natural logarithm revenue rate as the weight of a token. The calculation formula for this part is:

$$s_{ij} = \frac{\frac{1}{\max \sigma(\ln \frac{t_{ij}}{t_{ij-1}})}}{\frac{1}{\max \sigma(\ln \frac{t_{1j}}{t_{1j-1}})} + \frac{1}{\max \sigma(\ln \frac{t_{2j}}{t_{2j-1}})} + \dots + \frac{1}{\max \sigma(\ln \frac{t_{16j}}{t_{16j-1}})}}$$

By accumulating the market cap index and volatility index evenly, the final ratio of 16 tokens can be calculated :

$$w_i = 50\% p_{ij} + 50\% s_{ij}$$

w_i is the ratio of the corresponding token.

In order to facilitate quantitative analysis and calculation, we adjusted the circulation ratio, and the rules are as follows:

Circulation Ratio(%)	≤ 10	(10, 20]	(20, 30]	(30, 40]	(40, 50]	(50, 60]	(60, 70]	(70, 80]	(80, 100)
Adjusted ratio(%)	Circulation Ratio	20	30	40	50	60	70	80	100

According to the rules above, we can determine the adjusted ratio. By summing the weighted product of adjusted liquidity and price product, the BVC16 index is calculated.

The calculation formula for this part is:

$$N_i = \sum_{i=1}^n W_i \times P_i \times AR \times TS$$

$$Index = \frac{N_2}{N_1} \times 1000$$

$Index$ represents the final BVC16 index, N_i is the index at the corresponding time, N_1 is the benchmark index, N_2 is the real-time index; P_i the price of the corresponding token, AR is the liquidity adjusted ratio, TS and is the total supply of a token.

2.3 Index Modification

The real-time price of the BVC16 index portfolio originates from Coinmarketcap.com, which is recalculated every 30 seconds according to the index calculation method above.

2.4 Index Unit

The BVC 16 index is compiled by points and accurate to two decimal places.

3. Index correction

Due to the rapid changes and uncertainties in the the digital currency market, the BVC16 index adopts the dynamic adjustment method to periodically correct the index to ensure the accuracy of the index sample selection and matching. When there is a deviation in the index sample or configuration ratio, which decreases the sample reasonableness or increases the liquidity risk, the index sample may be replaced as an emergency mechanism to protect the investor's rights and interests.

4 Portfolio Adjustment

The BVC16 index portfolio is adjusted once a month in principle. The adjustment of token proportion theoretically does not exceed 10%. The token adjustment mechanism has a buffer area, emerging tokens with top 10 market cap are given priority to be listed and present tokens rank within top 30 are given priority to be reserved. Temporary adjustments will be made under special circumstances, usually due to the following reasons:

- (1) At the beginning of the month, according to the index calculation method, the proportion of the sample currency components will be recalculated.
- (2) When the projects that a token represented changes its roadmap and classification, the outdated data will be replaced on the next periodic adjustment date.

(3) When the digital currency market fluctuates drastically, the index liquidity or other quantitative indicators fail or deviate significantly, the management team will make appropriate adjustments to reduce the risk.