

TIP TAIEX⁺ Low Volatility Dividend Plus Select 30 Index

I. Introduction

Volatility Anomaly is the phenomenon that market standard deviation is negatively related to future return, that is, low-volatility portfolios tend to defeat the high ones in the long term, which provides a stable investment strategy. Taiwan Index Plus Corporation(TIP) uses this feature to form a portfolio with selected short, medium and long-term weighted average low-volatility stocks with consideration of the market value and dividend, and compiles the "TIP TAIEX⁺ Low Volatility Dividend Plus Select 30 Index" (hereinafter referred to as "LV30 Index").

II. Calculation and Management

1. The index types of LV30 Index include the “Price Index” and the “Total Return Index”, which are maintained and managed by TIP. Taiwan Stock Exchange (TWSE) is designated to carry out the real-time calculation and dissemination.
2. TIP conducts periodic reviews of constituents according to the index rules.
3. TIP retains the closing market capitalization records of all constituents.
4. Refer to the “[General Principles for TIP Securities Indices](#)” for the principles of index development, maintenance, and management.

III. Eligibility of Constituents

1. Sampling Universe:
 - A. Index Universe: Common stocks listed on the TWSE, excluding stocks with altered trading method or suspended from trading; however, those suspended from trading due to corporate actions, including but not limited to, capital reduction, conversion to holding companies, exchange of shares into the shares of newly established companies or change of par value may still be included in the Index Universe.
 - B. Sampling Range: The stocks from the Taiwan Innovative Board (TIB) in the index universe are excluded.
2. Criteria of Constituent Selection:
 - A. Liquidity Test:

The number of shares traded in the last three months accounts for more than 20% of the total issued shares, or the monthly average number of shares

Reference only, the Chinese version shall prevail.

traded in the last three months is more than 100 million shares.

B. Index Screening:

Stocks that pass the Index Screening must meet all of the following criteria.

- a. Listed for at least one year.
- b. Average market capitalization in the past 3 months exceeds or equals to NTD 10 billion.
- c. Positive net profit after tax in the latest quarter, or positive cumulative net profit after tax for the current year.
- d. Cash dividends are distributed or declared in the most recent year, and cash dividends are distributed for at least 2 out of the most recent 3 years.

C. Sorting method:

- a. Calculate and weight the standard deviation of the specific period for those who pass the indicator screening, and define it as "Volatility"¹
- b. Arrange the "Volatility" in ascending order and select the top 30 stocks as constituents.

3. Weighting Method:

- A. Free float adjusted market capitalization.
- B. According to the free float adjusted market capitalization, the weight of individual constituent shall not exceed 20%, and the total weight of the top five constituents shall not exceed 60%.

IV. Index Calculation

1. Index Calculation Frequency:

- A. Starting December 19, 2016, the real-time LV30 Index is calculated and

¹ The "Volatility" of individual stocks is calculated by first computing separately the standard deviation of the total return quarterly, semi-annually, and annually and then weighting them by the ratios of 1/60, 1/125, and 1/250.

disseminated every five seconds during the trading hours of the TWSE and the TPEx, based on the latest trading prices of the constituent stocks. The end-of-day (EOD) index is calculated once a day after the market closes.

- B. TIP also compiles LV30 Total Return Index, which adjusts the LV30 Index after considering the cash dividend factor, in order to reflect the cash dividend-included return. The index is calculated and disseminated once every day after the market closes.

2. Calculation Formula:

- A. LV30 Index is a “Price Index”:

$$\text{Index} = \frac{\text{Total Index Market Values}}{\text{Index Divisor}} \times \text{base value}$$

$$\text{Index}_t = \frac{\sum_{i=1}^n \text{cp}_{i,t} \times s_{i,t} \times p_{i,t}}{\text{Divisor}_t} \times 5000$$

$\text{cp}_{i,t} \times s_{i,t} \times p_{i,t}$ = “index market value” of constituent i on day t

n = number of index constituents

$p_{i,t}$ = trading price of constituent i on day t

$s_{i,t}$ = number of issued shares of constituent i on day t

$\text{cp}_{i,t}$ = the adjustment coefficient of constituent i on day t is decided in accordance with the “Market-Value Investment Index Category” described in the “TIP Corporate Actions and Events Methodology”.

Divisor = index divisor of the Price Index; after the market closes, the index divisor is adjusted in accordance with the “Market-Value Investment Index Category” described in the “TIP Corporate Actions and Events Methodology”, to maintain the index continuity. The adjustment method is as follows:

Index divisor = index divisor on the previous day

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$$\times \left(\frac{\text{total index market values at the previous day's close} \pm \text{total index market values changes}}{\text{total index market values at the previous day's close}} \right)$$

Note1 : The base date is December 16, 2016, and the base value is set at 5000 points.

Note 2 : The index divisor on the base date is the total index market values at that time.

$$\sum_{i=1}^n cp_{i,launch} \times s_{i,launch} \times p_{i,launch} , \text{ launch} = \text{base value}$$

B. LV30 Total Return Index is a “Total Return Index”:

$$\text{Index} = \frac{\text{Total Index Market Values}}{\text{Index Divisor}} \times \text{base value}$$

$$\text{Index}_t = \frac{\sum_{i=1}^n cp_{i,t} \times s_{i,t} \times p_{i,t}}{\text{DivisorTR}_t} \times 5000$$

DivisorTR = index divisor of the Total Return Index ; after the market closes, the index divisor is adjusted in accordance with the “Market-Value Investment Index Category” described in the “[TIP Corporate Actions and Events Methodology](#)” to maintain the index continuity. The adjustment method is as follows:

Index divisor = index divisor on the previous day

$$\times \left(\frac{\text{total index market values at the previous day's close} \pm \text{total index market values changes}}{\text{total index market values at the previous day's close}} \right)$$

V. Constituent Adjustment and Index Maintenance

1. Periodic Review and Adjustment of Constituents:

A. The constituents are reviewed once a year, with the 7th trading day of October as the review date; the data cut-off date is the last trading day of September. After each periodic review, the number of constituents is fixed at 30.

B. The results of the constituent periodic review will become effective following

a five-trading-day interval after the review date(not included).

- C. For the index divisor maintenance, the closing data of each previous trading day during the rebalancing period is adopted to calculate the difference, which is used as the total index market value changes between the total index market value of the new portfolio and the original one.
 - D. If the review data of holding companies or newly established companies is insufficient, and the representative companies of the converted stocks meet the Sampling Universe qualification, the data of the representative companies or their stocks may be used in the review.
2. LV30 Index belongs to the Market-Value Investment Index Category. The related maintenance such as the non-periodic adjustment of constituents, the adjustment coefficient, the number of issued shares, and the index divisor is handled in accordance with the [“TIP Corporate Actions and Events Methodology”](#). If a constituent is removed as a result of the above reasons, the vacancy created will not be filled.
3. Principles for implementation of the Free Float Coefficient:
- A. If the free float coefficient is lower than 10%, it will not be included in the Sampling Universe.
 - B. The update for the free float coefficient shall be in conjunction with the effective date of constituents periodic review.
 - C. The free float coefficient is updated based on the latest data generated from TIP’s [“TIP Free Float Coefficient Calculation Guide”](#).