

TIP TAIEX⁺ Customized High Dividend Minimum Variance Index

I. Introduction

Retirement preparation is an urgent issue for an aging society. The securities investment concept of consolidating principal and depositing interest can be adopted when planning for retirement cash flow. In order to compile the "TIP TAIEX⁺ Customized High Dividend Minimum Variance Index" (abbr., "TIP HDMV Index"), TIP applies multiple financial indicators and market exposure factors for integrating multi-factor investment methods, selects high cash dividend constituents, and then optimizes weight distribution through the minimum variance model to reduce index volatility.

II. Calculation and Management

1. The index types of the TIP HDMV 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. Please 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: Stocks from primary listed foreign companies or the Taiwan Innovative Board (TIB) are excluded from the index universe.
2. Criteria of Constituent Selection:
 - A. Liquidity Test¹: Stocks selected from the sampling universe with the ranking

¹ Existing constituents pass the liquidity test if ranked in the top 250 of the sampling universe.

among the top 250 in market capitalization and satisfy either of the following conditions pass the liquidity test.

- i. The 6 months median trading value is greater than NT\$20 million
- ii. The 6 months median trading value is classified in the highest 25% within the sampling universe.

B. Index Screening:

First, stocks within the liquidity test, perform the screening based on the cash dividend yield, and then apply the fundamental and technical indicators such as operational stability, return on equity, price momentum and dividend quality, and use the five indicators: profitability, return on equity, cash dividend yield, operating cash flow and volatility to calculate the comprehensive score by arithmetic average; then select the top 50 listed stocks and use the minimum variable method to weight these stocks to reduce the volatility of the index. The definition and application of the indicators are as follows:

- **Cash dividend yield:** The ratio of cash dividend in the most recent year to the closing price on the data cut-off date; the screening method is to rank the stocks in descending order and select the top 60% stocks with a cash dividend yield below 30%.
- **Operational stability:** The ratio of the standard deviation of net income in the last eight quarters to the equity in the most recent quarter; the screening method is to rank the stocks in ascending order and select the top 80% stocks.
- **Return on equity:** The ratio of net income to equity in the most recent quarter; the screening method is to rank the stocks in descending order and select the top 80% stocks.
- **Price momentum:** The stock price change in the most recent year; the screening method is to rank the stocks in descending order and select the top 90% stocks or the stocks with rate of return higher than -30%.
- **Dividend payout quality:** The ratio of cash dividend to earnings in the last three years; the screening criterion is that the average ratio in the last three years is between 0% and 120%.
- **Profitability:** The ratio of earnings per share in the most recent quarter to the stock price on the data cut-off date.
- **Operating cash flow:** The ratio of operating cash flow in the most recent quarter to the market capitalization on the data cut-off date.
- **Volatility:** The annualized sample standard deviation of the daily adjusted return for the last 252 days (the number of daily adjusted return data must be at least 126).

3. Weighting Method:

The weight of the individual constituent is determined by the minimum variance model, the upper limit of the individual constituent's weight is 10% or five times of trading value weight², and the lower limit is 1%. If the individual constituent's five times of trading value weight is lower than 2%, the upper limit of the weight is 2%.

Based on the above adjustment, the hypothetical asset under management amount(AUM)³ is applied to calculate the investment amount of each constituent. The hypothetical AUM amount invested in proportion to the market capitalization and free float adjusted market capitalization shall not exceed 5% and 10%, respectively. Additionally, for constituents that are not among the top 100 by market capitalization within the sampling universe and have a day-to-trade exceeding 15 days, the investment amount shall not exceed 3% of their market capitalization and 6% of their free float adjusted market capitalization.

IV. Index Calculation

1. Index Calculation Frequency:

- A. Starting July 10, 2017, the real-time TIP HDMV Index is calculated and disseminated every five seconds during the trading hours of the TWSE, 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 TIP HDMV Total Return Index, which adjusts the TIP HDMV 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. TIP HDMV Index is a "Price Index":

² The existing constituents have their own upper limits, i.e., the upper limit of the individual constituent's weight is 1.5 times their original weight.

³ The hypothetical AUM amount is calculated by the actual asset under management that track TIP HDMV Index, rounded to the nearest higher multiple of 25 billion (TWD).

Reference only, the Chinese version shall prevail.

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

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

$\text{cp}_{i,t} \times s_{i,t} \times p_{i,t}$ = “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 “SmartBeta 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 “SmartBeta 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

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

Note1 : The base date is June 30, 2017, 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.

$$\sum_{i=1}^n \text{cp}_{i,\text{launch}} \times s_{i,\text{launch}} \times p_{i,\text{launch}}, \text{ launch} = \text{base date}$$

B. TIP HDMV Total Return Index is a “Total Return Index”:

Reference only, the Chinese version shall prevail.

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

$$\text{Index}_t = \frac{\sum_{i=1}^n \text{cp}_{i,t} \times \text{s}_{i,t} \times \text{p}_{i,t}}{\text{DivisorTR}_t} \times 5000$$

DivisorTR = index divisor of the Total Return Index ; after the market closes, the index divisor is adjusted in accordance with the “SmartBeta 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 twice a year, with the 7th trading day of June and December as the review date; the data cut-off date are the last trading day of May and November. After each periodic review, the number of constituents is 50⁴.
- B. Buffer zone: Non-constituents that rank 35th place or above are added to the index. Existing constituents that rank below 65th are deleted from the index. Subsequently, existing constituents ranked between 35st and 65th are prioritized to be included based on the ranking order. However, it is necessary to meet the criteria of maximum 15 replacements and at least 25 constituents are among the top 100 in market capitalization within the sampling universe at the same time⁵.

⁴ Based on the number of constituents determined in the previous review as the set number, however, if the proportion of stocks reaching the upper weight limit exceeds 50%, constituents are added in increments of five each time, and the maximum number is set at 65.

⁵ When the number of replacements still exceeds 15 after buffer adjustment, those who pass the criteria of constituent selection will be sorted in descending order by the comprehensive score, with the priority to select up to 35 existing constituents, and then the non-existing constituents to fill up the rest. This condition is also adjusted proportionally based on the latest number of constituents. Only if there are fewer than 25 constituents among the top 100 in market capitalization within the

- C. The results of the constituent periodic review will become effective following a five-trading-day interval after the review date(not included). The index is rebalanced over 8 consecutive trading days starting from the review effective date (the rebalancing period). A transitional weight is allocated to each security in the index during the rebalancing period.
 - D. 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.
 - E. 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. The TIP HDMV Index belongs to the SmartBeta 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.

sampling universe (hereafter "top-100"), constituents will be replaced with stocks that pass the index screening and belong to the top-100 while adhering to the replacement limit from prior steps. This process will repeat until either there are 25 constituents among the top-100 or no further replacements are possible.