

TIP Taiwan Technology Dividend Highlight Index

I. Introduction

TIP Taiwan Technology Dividend Highlight Index (abbr. TIP Taiwan TDH Index) aims to represent the portfolio performance of stable dividend pay-out companies which belongs to the Taiwan's most competitive industry, i.e. technology. The index universe is composed of top-cap technology stocks that are listed in TWSE or TPEX. After liquidity screening, criteria based on volatility, cash dividend, PE ratio, and financial data are further filtered. Top 50 companies are finalized and weighted primarily according to the dividend yield.

II. Calculation and Management

1. The index types of the TIP Taiwan TDH Index include the "Price Index" and the "Total Return Index", which are maintained and managed by Taiwan Index Plus (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 and the TPEX, excluding managed stocks, emerging stocks, and stocks with altered trading methods or suspended from trading; however, those suspended from trading due to corporate actions, including but not limited to capital reduction, conversion to holding company, 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 in the Index Universe classified under the biotechnology and medical care, semiconductor, computer and peripheral equipment, optoelectronic, communications and Internet, electronic parts & components, electronic products distribution, information service, other electronic, green energy and environmental protection and digital cloud industries as defined by the TWSE and the TPEX, excluding those listed on

the Taiwan Innovation Board (TIB).

2. Criteria of Constituent Selection:

- A. Liquidity Test: The following three conditions must be met in order to pass the liquidity test.
- a. Condition 1 is passed if one of the two is met:
 - i. Stocks in the top 20% of total trading amount in the last 12 months.
 - ii. The free float turnover ratio reaches 3% for at least 8 months in the last 12 months.
 - b. Condition 2: Stocks that fall within the bottom 20% in the Sampling Universe of the total trading amount in the last month are excluded.
 - c. Condition 3: Stocks ranked among the top 200 in the Sampling Universe, with a market capitalization of at least NT\$5 billion.
- B. Index Screening: Stocks that pass the liquidity test must meet each of the following indicators.
- a. The EWMA volatility¹ for the 252-day adjusted daily return falls within the lowest 90%.
 - b. The average dividend yield for the past three years falls within the highest 90%.
 - c. The coefficient of variation for cash dividends in the past five years falls within the lowest 90%.
 - d. The difference between the average P/E ratio in the past five years and the average P/E ratio in the past three months falls within the highest 90%.
 - e. Return on Equity (ROE) has remained positive over the three consecutive years.
 - f. The annual dividend-paying stocks that have gone ex-dividend before the effective date are excluded for the periodic review conducted in June.
- C. Sorting method:
- Rank the dividend yield² in descending order, select the top 50 stocks as

¹ EWMA volatility is calculated through recursion, assigning a higher weight to the more recent adjusted daily return; the parameter used in the calculation is set to 0.94.

² Dividend yield = cash dividend for the most recent year / closing price on the data cut-off date; if the cash dividend for the most recent year has not yet been announced on the data cut-off date, replaced with the earnings per share for the most recent year × average cash dividend payout rate for the past

constituents.³

3. Weighting Method:

- A. Weighted by dividend yield.
- B. The upper limit for the weight of individual constituent is 10%, and shall not exceed any of the following indicator:
 - a. Five times of the following indicator:

$$\frac{\text{Proportion of } fmv + \text{Proportion of td 3m avg}}{2}$$

ffmv = Free float market capitalization

td 3m avg = average trading amount in the past three month

- b. The hypothetical asset under management amount (AUM) is applied for the index weight limit which is calculated by the actual asset under management⁴ that track TIP Taiwan TDH Index multiplied by 1.2, rounded to the nearest higher multiple of 25 billion (NTD). The hypothetical AUM amount invested in proportion to the market capitalization and free-float adjusted market capitalization of a single stock shall not exceed 6% and 15%, respectively.⁵

IV. Index Calculation

1. Index Calculation Frequency:

- A. Starting March 27, 2023, the real-time TIP Taiwan TDH Index is calculated and disseminated every five seconds during the trading hours of the TWSE and 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 TIP Taiwan TDH Total Return Index, which adjusts the

three years.

³ Companies that have paid cash dividends more than twice in the most recent four quarters are preferentially included during the periodic review in December.

⁴ Using closing data on the data cut-off date.

⁵ In the case of no feasible solution, the proportion parameters used in terms of the market capitalization and free float market capitalization are gradually relaxed with each step of 0.5% and 1.25%, respectively. However, the former can only be relaxed until it reaches 10%. If the constraints are still not met, the multiplier is to be gradually decreased in the unit of 0.05, until it lowers to 1.

TIP Taiwan TDH Index after considering the cash dividend factor, in order to reflect the cash dividend-included return. Starting April 22, 2024, the real-time TIP Taiwan TDH Total Return Index is calculated and disseminated every five seconds during the trading hours of the TWSE and 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.

2. Calculation Formula:

A. TIP Taiwan TDH 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

$p_{i,t}$ = 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

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

Reference only, the Chinese version shall prevail.

Note1 : The base date is December 9, 2022, 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.

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

B. TIP Taiwan TDH 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 “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. 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 data cut-off date⁶, and the following 7th trading day as the data review date. After each periodic review, the number of constituents is fixed at 50.

⁶ Where otherwise prescribed, such other rules shall apply.

Reference only, the Chinese version shall prevail.

- B. Constituent adjustment buffer zone: Stocks 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 35th and 65th are prioritized to be included based on the ranking order. However, it is necessary to meet the criteria of maximum 24 replacements in June review and 16 in December.
 - C. The weight of constituents is reviewed twice a year, with the last trading day of February and August as the data cut-off date; if any constituent's weight doesn't meet the upper limit criteria in III. 3. B. on the cut-off date, the excess portion will be reallocated based on the constituent weight proportion until it meets the criteria in III. 3. B., and the review dates is the 7th trading day of March and September. If there are no instances of exceeding the aforementioned weight limits, no action will be taken.
 - D. The result of the 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.
 - E. 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.
 - F. 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 also be used in the review.
2. The TIP Taiwan TDH 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.

Reference only, the Chinese version shall prevail.

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 of 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](#)".