

(Reference Translation)

TSE Index Guidebook (TOPIX New Index Series - Size-based TOPIX Sub-Indices)

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Tokyo Stock Exchange, Inc.

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Record of Changes

DATE	Changes
2018/7/23	* First Edition
2018/8/17	* Added "TOPIX Small 500" (Launch Date: October 9,2018)
2019/8/30	* Modified an error
2020/3/31	* Revised the date for adjusting base market value following the shortening of stock settlement cycle to T+2
2020/6/30	* Revision to bring forward the date for minor adjustments related to ex-dividend
2020/12/25	Clarification of the treatment of section transfers, etc.
2022/4/4	Revisions pertaining to cash equity market restructuring

Introduction

- Tokyo Stock Exchange, Inc. (TSE) calculates and publishes TOPIX New Index Series and Size-based TOPIX Sub-Indices in accordance with the methods described in this document. If an event not specified in this document occurs, or if TSE determines that it is difficult to use the methods described in this document, TSE may use an alternative method of index calculation as it deems appropriate.
- Copyright of this document is owned by TSE and any copies, reprints, and reproductions of this document in whole or in part are prohibited without the prior approval of TSE. This document is prepared solely for the understanding of indices calculated and published by TSE, and is not to be construed as a solicitation for trading any securities or related financial instruments. Information expressed in this document is subject to change without notice; and, in those cases, TSE undertakes no obligation to update any recipients of this document. TSE shall accept no liability or responsibility for any loss or damage arising from errors, delays, or termination of the calculation or publication of TOPIX New Index Series and Size-based TOPIX Sub-Indices, changes to its calculation or publication method, the use of TOPIX New Index Series and Size-based TOPIX Sub-Indices or all or any part of this document or other similar events.
- TSE calculates both price and total return versions of all indices described in this guidebook.

I. Outline of Indices

- TOPIX New Index Series classifies TOPIX constituents into TOPIX Core30, TOPIX Large70, TOPIX 100, TOPIX Mid400, TOPIX 500, TOPIX 1000, and TOPIX Small500 based on free-float adjusted market capitalization and liquidity.

Size-based TOPIX Sub-indices	TOPIX New Index Series			
	Core30 Large70	TOPIX 100	TOPIX 500	TOPIX 1000
Large-cap Stocks	Core30 Large70	TOPIX 100	TOPIX 500	TOPIX 1000
Medium-cap Stocks	Mid400			
Small-cap Stocks	Small		TOPIX Small500	

- In order to accurately reflect market movements, TSE conducts an annual review of

the constituents of the indices in TOPIX New Index Series in October.

- As a general rule, the number of constituents in TOPIX Core30, TOPIX Large70, TOPIX 100, TOPIX Mid400, TOPIX 500, TOPIX 1000, and TOPIX Small 500 are 30, 70, 100, 400, 500, 1000, and 500, respectively. After the October Review, the number of constituents may increase or decrease due to inclusions of constituents at the Monthly Review or delisting of constituent companies.
- For index calculation, the following is applied: a liquidity factor as set in the Free Float Weight Calculation Methodology, the TOPIX cap-adjustment ratio, and a transition factor.
- The base date and base value for each index is indicated below:

Index	Base Date	Base Point
TOPIX New Index Series TOPIX Core30 TOPIX Large70 TOPIX 100 TOPIX Mid400 TOPIX 500 TOPIX Small	1998/04/01	1,000
TOPIX 1000	2003/09/12	1,000
TOPIX Small500	2018/08/31	1,000
Size-based TOPIX Sub-Indices	1968/01/04	100

II. Index Calculation

1. Outline

- TOPIX New Index Series and Size-based TOPIX Sub-Indices are calculated using free-float adjusted market capitalization weighting. Each index is denominated in points and is calculated to the second decimal place. (Values beyond the second decimal place are rounded.)

2. Formula

$$\text{Index} = \frac{\text{CMV}}{\text{BMV}} \times \text{Base Point}$$

CMV = Current market value (free-float adjusted)

BMV = Base market value (free-float adjusted)

$$\text{Current Market Value} = \sum (\text{Number of Shares for Each Constituent} \times \text{Stock Price for Each Constituent})$$

3. Stock Price Used for Calculation

- The stock prices used for calculating and adjusting base market value for TOPIX New Index Series and Size-based TOPIX Sub-Indices are prices from auction trading on TSE and are determined by the following order of priority:

(1) Special Quote or Sequential Trade Quote, (2) Contract Price, (3) Base Price for Index Calculation when neither (1) or (2) are available (determined in the following order: a) Theoretical Ex-rights Price, b) Most Recent Special Quote or Sequential Trade Quote on or before the previous trading day, c) Most Recent Contract Price before the previous trading day)

4. Number of Shares Used for Index Calculation

- The number of shares used for index calculation is determined by multiplying the total number of listed shares by the free-float weight (FFW) ratio.

$$\begin{aligned} &\text{Number of Shares Used for Index Calculation for Each Stock} \\ &= \text{Total Number of Listed Shares} \times \text{FFW Ratio} \end{aligned}$$

- In general, the "total number of listed shares" in the above formula is equal to the number of listed shares; but, in some cases, these numbers are different due to corporate actions such as stock splits. For example, in a stock split, the number of listed shares changes on the listing change date, which comes after the effective date. On the other hand, the total number of listed shares used in index calculation (before FFW adjustment) changes on the ex-rights date, leading to a brief period in which the two numbers are different.
- Also, the total number of listed shares used in index calculation (before FFW adjustment) is generally equal to the number of issued shares; but, in the case of Nippon Telegraph and Telephone Corporation, Japan Tobacco, Inc., and Japan Post Holdings Co., Ltd., the government of Japan holds some issued shares that have not been listed, leading these two numbers to be different.

- Please refer to the appendix for information on calculating FFW ratio.

5. Constituent selection

(1). October Review (inclusion and removal)

a. Summary

- At the October Review, TOPIX constituents are included in and removed from the TOPIX New Index Series based on liquidity and free-float adjusted market capitalization (after applying a liquidity factor as set in the Free Float Weight Calculation Methodology, the TOPIX cap-adjustment ratio, and a transition factor. The same shall apply hereinafter) as of the base date, which is the last business day of August.
- The list of constituent changes is published on the fifth business day of October, and index calculation applying such constituent changes will begin on the last business day of October.
- Constituents of the TOPIX New Index Series are selected on the base date in accordance with the following procedures.

b. TOPIX Core30 selection criteria

(a) First, the 15 largest stocks by free-float adjusted market capitalization are selected from the top 90 stocks out of TOPIX constituents based on total trading value during the last three-year period (trading value is from auction trading on TSE. The same shall apply hereinafter).

(b) Remaining 15 constituents

i Selection from current TOPIX Core30 constituents

Out of the current constituents, the 15 largest stocks by free-float adjusted market capitalization as of the base date are selected. These 15 stocks must be from the top 90 stocks out of TOPIX constituents based on total trading value during the last three-year period and must also be ranked within the top 40 stocks by free-float adjusted market capitalization as of the base date.

ii If it is not possible to select 15 stocks in accordance with the procedures above, the remaining stocks will be selected from the top 90 stocks out of TOPIX constituents based on total trading value during the last three-year period.

c. TOPIX 100 selection criteria

- (a) First, the TOPIX Core30 constituents are selected.
- (b) Remaining 70 constituents
 - i Selection from current TOPIX 100 constituents

Out of the current TOPIX 100 constituents, the 70 largest stocks by free-float adjusted market capitalization as of the base date are selected. These 70 stocks must be from the top 200 stocks based on total trading value for the last three-year period and must also be ranked within the top 130 stocks by free-float adjusted market capitalization as of the base date.

- ii If it is not possible to select 70 stocks in accordance with the procedures above, the remaining stocks will be selected from the top 200 stocks out of TOPIX constituents based on total trading value during the last three-year period.

d. TOPIX 500 selection criteria

- (a) First, the TOPIX 100 constituents are selected
- (b) Remaining 400 constituents
 - i Selection from the current TOPIX 500 constituents

Out of the current TOPIX 500 constituents, the 400 largest stocks by free-float adjusted market capitalization as of the base date are selected. These 400 stocks must be from the top 1,000 stocks based on total trading value during the last three-year period and must also be ranked within the top 600 stocks by free-float adjusted market capitalization as of the base date.

- ii If it is not possible to select 400 stocks in accordance with the procedures above, the remaining constituents will be selected from the top 1,000 stocks out of TOPIX constituents based on trading value during the last three-year period.

e. TOPIX 1000 selection criteria

- (a) First, the TOPIX 500 constituents are selected.
- (b) Remaining 500 stocks
 - i Selection from current TOPIX 500 constituents

Out of the current TOPIX 500 constituents, the 500 largest stocks by free-float adjusted

market capitalization as of the base date are selected. These 500 stocks must be from the top 1,200 stocks out of TOPIX constituents based on total trading value during the last three-year period and must also be ranked within the top 1,200 stocks by free-float adjusted market capitalization as of the base date.

ii If it is not possible to select 500 stocks in accordance with the procedures above, the remaining constituents will be selected from the top 1,200 stocks out of TOPIX constituents based on total trading value during the last three-year period.

f. TOPIX Small selection criteria

All stocks in TOPIX constituent universe excluding those in TOPIX 500

g. TOPIX Large70 selection criteria

Constituents of TOPIX 100 excluding those in TOPIX Core30

h. TOPIX Mid400 selection criteria

Constituents of TOPIX 500 excluding those in TOPIX 100

i. TOPIX Small500 selection criteria

Constituents of TOPIX 1000 excluding those in TOPIX 500

(2). Monthly review (inclusion only)

a. Summary

- Issues newly included in TOPIX are included into the TOPIX New Index Series indices during the “Monthly Review”. These issues are selected based on liquidity and free-float adjusted market capitalization as of the base date.
- The base date of the monthly review is the last business day of every month (last business day of the month of an initial listing). The list of constituent inclusions is published on the fifth business day of every month (fifth business day of the month after that of an initial listing) and index calculation applying such constituent inclusions will begin on the last business day of every month (last business day of the month after an initial listing).

b. Criteria for inclusion

- As a general rule, newly listed companies will be added to TOPIX Small. However,

stocks with a large free-float adjusted market capitalization and trading value (stocks that satisfy at least the following criteria as of the last business day of the month preceding that of inclusion) will be added to TOPIX Core30, TOPIX Large70, TOPIX Mid400 respectively. However, as long as a newly listed company does not satisfy at least the criteria for TOPIX Mid400, it will not be included in the TOPIX 1000.

Index	Free-Float adjusted Market Capitalization Ranking	Trading Value Ranking
TOPIX Core30	20	90
TOPIX Large70	70	200
TOPIX Mid400	400	1,000

(3). Removal of constituents in addition to the periodic review

- If an issue is removed from TOPIX, it will be removed from the TOPIX New Index Series.

(4). Inclusion of constituents in addition to the periodic review

- In cases where a company in the TOPIX New Index Series is delisted due to a stock transfer, stock swap, merger for creating a new company or demerger, and the surviving or succeeding company is promptly listed and included in TOPIX, the stocks of such new company will be included in whichever index of the TOPIX New Index Series in which the delisted company was included that includes the issues with the highest liquidity and largest free-float adjusted market capitalization.

Example: If both Company A in TOPIX Core30 and Company B in TOPIX Large70 are delisted due to a stock-swap and Company C, the newly established holding company, is promptly listed and included in TOPIX, then Company C will be added to TOPIX Core30.

- Even though the number of constituents may decrease due to delisting between the periodic reviews, no supplementary inclusions are made to meet the intended number of constituents for each index (inclusions to meet the intended number of constituents for each index are only made during the October Review).

III. Adjustments to Base Market Value

- Whenever the market value of the index changes due to an increase or decrease in constituent issues, capital raising, or similar events other than market fluctuations, the base market values for the TOPIX New Index Series and Size-based TOPIX Sub-Indices are adjusted as follows to maintain continuity.

1. Events that Require Adjustment

1) Inclusion or Removal of Constituents

	Event Requiring Adjustment		Adjustment Date	Stock Price Used for Adjustment
Inclusion	New listing of a newly formed company resulting from a corporate consolidation, etc. (*1) that results in a TOPIX constituent being delisted and the new company being included in TOPIX. (*2)		New listing date (*3)	Base price
	Inclusion into TOPIX		Date of inclusion into TOPIX	Stock price at end of trading on business day before adjustment date
	Periodic review in October		Last business day of October	Stock price at end of trading on business day before adjustment date
Removal	Delistings	New listing of a newly formed company resulting from a corporate consolidation, etc. (*1) that results in a TOPIX	Listing date of the newly formed company (normally two business days following delisting date)	Stock price at end of trading on business day before delisting date (*4)

	Event Requiring Adjustment		Adjustment Date	Stock Price Used for Adjustment
		constituent being delisted and the new company being included in TOPIX.		
		Delistings other than those stated above (e.g. mergers/acquisitions between two TOPIX constituents with surviving company remaining as a TOPIX constituent, etc.)	Delisting date	Stock price at end of trading on business day before adjustment date
	Removal from TOPIX		Date of removal from TOPIX	Stock price at end of trading on business day before adjustment date
	Periodic review in October		Last business day of October	Stock price at end of trading on business day before adjustment date

*: Adjustments to the base market value are made after the end of trading on the business day before the adjustment date (i.e., before the market opens on the adjustment date). The same shall apply hereinafter.

*1: Stock transfer, stock swap, merger for creating a new company, or demerger.

*2: The new company will be included in whichever index of the TOPIX New Series in which the delisted company was included that includes the issues with the highest liquidity and largest free-float adjusted market capitalization.

*3: Next business day when the new listing date falls on a holiday.

*4: The stock price at the end of trading on the business day before the delisting date is used to calculate the index for the period from the delisting date to the removal date.

2) Changes in Number of Shares Used for Index Calculation

Event Requiring Adjustment	Adjustment Date	Stock Price Used in Adjustment
Changes in free-float weight (FFW)	Date of change	Stock price at end of trading on business day before adjustment date
Public offering	Additional listing date (day after payment date) (*1)	Stock price at end of trading on business day before adjustment date
Third-party allotment	Five business days after additional listing date (two business days after payment date)	Stock price at end of trading on business day before adjustment date
Issues to shareholders with payment	Ex-rights date	Payment price per share
Exercise of subscription warrants	Last business day of the month following exercise	Stock price at end of trading on business day before adjustment date
Conversion of preferred stock, etc.	Last business day of the month following conversion	Stock price at end of trading on business day before adjustment date
Cancellation of treasury stock	Last business day of the month following cancellation	Stock price at end of trading on business day before adjustment date
Merger/ Stock	Situations in which a constituent of an index calculated by TSE (*2) is	Delisting date of the non-surviving entity Stock price at end of trading on business day before adjustment

Event Requiring Adjustment		Adjustment Date	Stock Price Used in Adjustment
	the non-surviving entity (mergers/stock swaps between two issues that are both constituents of an index calculated by TSE)		date
	Situations other than those described above	Listing change date (effective date)	Stock price at end of trading on business day before adjustment date
Rights offering (limited to case where the allotted subscription warrant securities are listed) (*3)		Ex-rights date	Payment price per share
Sale of shares held by the Japanese government (Nippon Telegraph, Telephone and Japan Tobacco and Japan Post Holdings only)		Date determined by TSE (*4)	Stock price at end of trading on business day before adjustment date
Demerger (absorption-type)		Listing change date (effective date)	Stock price at end of trading on business day before adjustment date
Other adjustments (*5)		Last business day of the month in which the information appears in “Sho-ho” (TSE Notice) or the last business day of the following month	Stock price at end of trading on business day before adjustment date

Note: Since market value does not change when there is a stock price revision made due to an increase (or decrease) in the number of shares used for index calculation such as a stock split, reverse stock split, or gratis allotment of shares (limited to cases where treasury stock is allotted), etc., no adjustment is made to the base value.

*1: Next business day when the change (addition) date falls on a holiday (same applies below)

*2: Constituents of an index calculated by TSE include domestic common shares.

*3: The number of shares for Rights offering used for calculating indices will correspond to the number of shares to be allocated to shareholders. The case where the allotted subscription warrant

securities are not listed is treated as “Exercise of subscription warrants”.

*4: Generally the delivery date

*5: For example, situations in which an issuer of convertible bonds or other securities conducts a stock split; the number of shares calculated based on ratios for stock splits, reverse stock splits, or share allotments to shareholders, etc. is different than the final number of shares determined after the effective date; or revisions have been made by listed companies after data has been reflected in index calculation.

3) Data Source

- Information on the reason for base market value adjustments, details on the adjustment, the adjustment date and other data is available through the “Sho-ho” (TSE Notice) published daily by TSE based on reports, etc. made by listed companies. (Please refer to the appendix for information on calculating FFW.)
- If a listed company revises the contents of a previously published report that resulted in an index adjustment, retroactive index adjustments will NOT be made based on the revised contents.

2. Adjustment Method

1) Indices that do not reflect dividends (i.e. price indices)

A) Adjustment Method

- Base market value will be adjusted according to the formula below in order to maintain the continuity of the index:

$$\frac{\text{Previous Business Day Market Value}}{\text{Pre – Adjustment Base Market Value}} = \frac{(\text{Previous Business Day Market Value} \pm \text{Adjustment Amount})}{\text{New Base Market Value (After Adjustment)}}$$

*Adjustment Amount = Increase (Decrease) in Number of Shares Used for Index Calculation X Stock Price Used for Adjustment

Therefore,

$$\text{New Base Market Value} = \frac{\text{Old Base Market Value} \times (\text{Previous Business Day Market Value} \pm \text{Adjustment Amount})}{\text{Previous Business Day Market Value}}$$

B) Adjustment Example

- If, for example, the old base market value is 20 trillion yen and the previous day's market value is 400 trillion yen, TOPIX on the previous day will be:

$$\text{Previous Day TOPIX} = \frac{\text{¥400 tn}}{\text{¥20 tn}} \times 100 = 2,000.00$$

- Now, suppose that Stock A increases the number of listed shares used for index calculation by 100 million shares due to a public offering. If the closing price of the stock on the previous day was ¥2,000, the adjustment amount is 100 million shares x ¥2,000 = ¥200 billion. The new base market value, therefore, is:

$$\text{New Base Market Value} = \frac{\text{¥20 tn} (\text{¥400 tn} + \text{¥200 bn})}{\text{¥400 tn}} = \text{¥20.01 tn}$$

- As illustrated below, if there is no price change in any constituent, the value for TOPIX today is the same as the previous day: 2000 points. Thus, continuity in the index is maintained though adjustments to base market value even if the market value of constituents changes due to public offerings, etc.

$$(\text{¥400 tn} + \text{¥200 bn}) \div \text{¥20.01 tn} = 2,000 \text{ points}$$

2) Total Return Index

- Dividends used in calculating the Total Return Index are gross (i.e. before tax)
- Since the dividend amount for the current period is not fixed as of the ex-dividend date, adjustments made to reflect dividends in the base market value are made in two stages: 1) adjustment using estimated dividends and 2) minor adjustments made to reflect differences in estimated dividend and dividend amount announced in the earnings report, etc.

A) Adjustments Using Estimated Dividends

- The total dividend amount for all constituents is calculated on ex-dividend dates using estimated dividends, and base market value is adjusted as above. In principle, the estimated dividend amount used is as follows:
1. Dividend amount for the current period as announced in timely disclosure documents,

if available

2. Dividend amount for the previous period if the dividend for the current period is not fixed (e.g. the dividend is not announced in disclosure documents as (1) above, or the amount is not determined, etc.)
- The base market value adjustment method is basically as described in the previous section, except an adjustment is made to reflect dividends as follows:

$$\text{New Base Market Value} = \frac{\text{Old Base Market Value} \times (\text{Previous Business Day Market Value} - \text{Total Dividends} \pm \text{Adjustment Amount})}{\text{Previous Business Day Market Value}}$$

- * Dividends Per Constituent = Number of Shares Used for Index Calculation on Business Day Before Ex-Dividend Date × Estimated Dividend Per Share
- * Total Dividends = Sum of Dividends for All Constituents
- * Adjustment Amount = Increase (Decrease) in Number of Shares Used for Index Calculation × Stock Price Used for Adjustment

B) Minor Adjustment Made to Reflect Difference Between Estimated Dividend and Dividend Announced in the Earnings Report, etc.

- Minor adjustments are made with respect to those constituents for which the estimated dividend used on the ex-dividend date and the dividend announced in the earnings report or the notice of dividends of surplus (hereinafter the “earnings report, etc.”) are different. Specifically, the total dividend adjustment amount is calculated and the base market value adjustments are made on the last business day of the month in which the dividend is announced in the earnings report, etc. (hereinafter the “publication date”; if the publication date is one business day before the last business day of the month or the last business day of the month, adjustments will be, as a general rule, made on the last business day of the next month).

$$\text{New Base Market Value} = \frac{\text{Old Base Market Value} \times (\text{Previous Business Day Market Value} - \text{Total Dividend Adjustment} \pm \text{Adjustment Amount})}{\text{Previous Business Day Market Value}}$$

- * Adjusted Dividend Per Constituent = Number of Shares Used for Index Calculation on Business Day Before Ex-Dividend Date × (Dividend Announced in Earnings Report, etc.)

- Estimated Dividend Per Share)
- * Total Adjusted Dividends = Sum of Adjusted Dividends for All Constituents
- * Adjustment Amount = Increase (Decrease) in Number of Shares Used for Index Calculation X Stock Price Used for Adjustment

IV. Other

1. Publication/Dissemination of Index Data

1) Index Values

- Price index values are disseminated in real-time through the Market Information System to securities companies, news media, and other institutions all over the country. The TOPIX Core30, TOPIX500 and TOPIX1000 price index are disseminated every second, and other indices are disseminated every 15 seconds.
- The Total Return Index is calculated daily at market close.

2) Index Data

- Index data relating to TOPIX New Index Series and Size-based TOPIX Sub-Indices (base market value, number of shares for each constituent, etc.) is provided for a fee through the Tokyo Market Information service.

2. Licensing

- TSE reserves all calculation, publication and other rights pertaining to TOPIX New Index Series and Size-based TOPIX Sub-Indices. As such, commercial use of such indices in the composition and/or sale of financial products such as funds or linked bonds (including using the index as the basis for options, swaps, warrants, or other OTC derivatives) or provision of index data requires a license from TSE.

3. Contact

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