

(Reference Translation)

# TSE Index Guidebook

(Tokyo Stock Exchange REIT Index,  
Tokyo Stock Exchange REIT Property Sector Index Series)



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## Introduction

- Tokyo Stock Exchange, Inc. (TSE) calculates and publishes the Tokyo Stock Exchange REIT Index and Tokyo Stock Exchange REIT Property Sector Index Series (hereinafter, collectively referred to as "TSE REIT-related 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 the use of all or any part of this document.
- Tokyo Stock Exchange REIT Index calculates price return, total return and net total return versions. Tokyo Stock Exchange REIT Property Sector Index Series calculates both price and total return versions.

## I . Outline of Indices

- TSE REIT-related Indices calculated indices are calculated using free-float adjusted market capitalization weighting. The constituents base date and base value for each index is as below:

Index name	Constituents	Base Date	Base Value
Tokyo Stock Exchange REIT Index	All REIT listed on the TSE	March 31,2003	1,000
Tokyo Stock Exchange REIT Property Sector Index Series	The Tokyo Stock Exchange REIT Property Sector Index Series created by dividing the constituents of Tokyo Stock Exchange REIT index into the categories according to the property holder. (more detail II 6.)	February 26,2010	1,000

## II. Index Calculation

### 1. Outline

TSE REIT-related 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 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)

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

### 3. Stock Price Used for Calculation

- The stock prices used for calculating TSE REIT-related Indices 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: (1) Theoretical Ex-rights Price, (2) Most Recent Special Quote or Sequential Trade Quote on or before the previous trading day, (3) 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 is 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.

## 5. Free Float Weight Calculation

### (1) Outline

- Free-Float Weight (FFW) is the percentage of listed shares deemed to be available for trading in the market. TSE calculates the FFW for shares of each REIT and uses this value in index calculation. The FFW for shares of REIT X may be different from that for REIT Y.
- FFW is calculated by first estimating the amount of non-free-float shares (portion of listed shares deemed not to be available for trading in the market) using securities reports and such statutory documents required by the Financial Instruments and Exchange Act and publicly available documents released by listed companies, second, calculating non-FFW (Non-free-float shares / listed shares), and finally obtaining the FFW by removing the non-free-float factor from 1 ( $1 - \text{Non-FFW}$ ). FFW is expressed by a figure in the range of 0.00000 to 1.00000 in increments of 0.00001.

### (2) Estimation of non-free-float shares

a) Securities reports and other statutory documents required by the Act, as well as from publicly available documents released by each REIT.

b) Estimation of non-free-float shares

TSE considers the following to be non-free-float shares

Shares held by the top 10 major shareholders, by board members, and other representatives (REIT Asset management company), as well as treasury

- TSE may treat shares held by the top 10 major shareholders as free-float shares for the following entities:

As a general rule, shares considered as free-float :

- » Securities finance companies,
- » Securities depositories,
- » Trust banks specializing in asset management
- » Other trust banks (cases deemed as free-float such as securities investment trust accounts)
- » Global custodians, and

» Other entities who hold shares TSE deems as available for trading in the market

- Furthermore, TSE will conduct periodic reviews of FFW every year on the last business day of July.
- TSE will use documents, such as securities reports, from the previous accounting periods through December of the preceding fiscal year.
- TSE reserves the right to review FFW in some cases (such as third party allocation of shares, etc.) where it deems that the existing FFW is expected to be significantly affected.

#### c) Calculation of FFW

##### - Periodic review

At the periodic review, FFW is rounded up to the nearest 0.05 as indicated below after subtracting the non-FFW ratio from 1.

FFW for periodic review

1 – Non FFW ratio	≤0.05	≤0.10	≤0.15	≤0.20	≤0.25	≤0.30	≤0.35	≤0.40	≤0.45
FFW	0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40	0.45

≤0.50	≤0.55	≤0.60	≤0.65	≤0.70	≤0.75	≤0.80	≤0.85	≤0.90	≤0.95	≤1.00
0.50	0.55	0.60	0.65	0.70	0.75	0.80	0.85	0.90	0.95	1.00

##### - Extraordinary Review

TSE reserves the right to review FFW in the following cases, where it deems that the existing FFW is expected to be significantly affected.

Allocation of new shares to a third party, mergers, take-over bids (TOB), and other events deemed applicable by TSE.

##### - FFW for new listings

With respect to a new listing of a REIT (excluding technical listing due to mergers, etc.), FFW of those shares will be set to “0.6”, because shareholding cannot be determined at that time. FFW of the shares will be updated at the time of periodic review.

## **6. Constituent selection for Tokyo Stock Exchange REIT Property Sector Index Series**

### **(1) Summary of the Tokyo Stock Exchange REIT Property Sector Index Series**

- The Tokyo Stock Exchange REIT Property Sector Index Series created by dividing the constituents of TSE REIT index into the following 3 categories according to the property sectors namely “Office”, “Residential”, and “Retail & Logistics, Others”. (A single REIT issue may only be classified into one property sector, and will not be included in multiple property sector indices.)
- The TSE conducts an annual review of the constituents of the indices in the Tokyo Stock Exchange REIT Property Sector Index Series in July.

### **(2) July Review**

- Based on the most recent securities report submitted for each REIT as of the base date ( Last business day of May)for the periodic review, classify each REIT into one of three property sectors, namely “Office”, “Residential”, and “Retail & Logistics, Others”.
- Specifically, issues are classified according to the description under the “investment policy” item of the securities report containing description on the use of properties subject to investment by the REIT.
- In the case of multiple uses of properties subject to investment described under the “investment policy” item, confirm the basic policy on the investment ratio for each use and classify the issue based on the use with the highest investment ratio.
- In the case where there is no description on the investment ratio for each use, or where there are multiple property sectors with high investment ratios, refer to the list of investment properties in the securities report and classify the issue based on the property sector with the highest appraised value.
- The list of constituent changes is published on the fifth business day of July and index calculation applying such constituent changes will begin on the last business day of July.

## **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 TSE REIT-related 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 listings on TSE REIT Market(Direct listing)		Last business day of the month following listing	Stock price at the end of trading on the business day before adjustment date
	New listing of a newly formed company resulting from Merger that results in a Tokyo Stock Exchange REIT Index constituent being delisted and the new company being included in Tokyo Stock Exchange REIT Index.		New listing date *1	Base price
	Review for the Property Sector (Tokyo Stock Exchange REIT Property Sector Index Series only)		Last business day of July	Stock price at the end of trading on the business day before adjustment date
Removal	Delisting	New listing of a newly formed company resulting from Merger that results in a Tokyo Stock Exchange REIT Index constituent being delisted and the new company being included in Tokyo Stock Exchange REIT Index	Listing date of the newly formed company (normally three business days following delisting date)	Stock price at the end of trading on the business day before delisting date*2
		Delisting other than those stated above	Delisting date	Stock price at the end of trading on the business day



				before adjustment date
		Designation as Securities to be Delisted	Four business days after designation*3	Stock price at the end of trading on the business day before adjustment date
		Review for the Property Sector (Tokyo Stock Exchange REIT Property Sector Index Series only)	Last business day of July	Stock price at the end of trading on the business day before adjustment date

\*1: Next business day when the new listing date falls on a holiday.

\*2: 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.

\*3: Next business day when the designation date falls on a holiday.

## (2) Changes in Number of Shares Used for Index Calculation

Event Requiring Adjustment		Adjustment Date*6	Stock Price Used in Adjustment
Changes in free-float weight (FFW)		Date of Change	Stock price at the end of trading on the business day before adjustment date
Public offering		Additional listing date (day after payment date)*1	Stock price at the end of trading on the business day before adjustment date
Third-party allotment		Five business days after additional listing date (two business days after payment date)	Stock price at the end of trading on the business day before adjustment date
Merger	Situations in which a constituent of TSE REIT is	Delisting date	Stock price at the end of trading on the

Event Requiring Adjustment		Adjustment Date*6	Stock Price Used in Adjustment
	the non-surviving entity (mergers between two issues that are both constituents of Tokyo Stock Exchange REIT index)		business day before adjustment date
	Situations other than those described above	Listing change date (effective date)	Stock price at the end of trading on the business day before adjustment date
Other adjustments*2		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 the end of trading on the business day before adjustment date

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

\*2: 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 splits, paid-in allotment to shareholders,

\*3: Since market value does not change when there is a stock price revision made due to a stock split, reverse split, etc., no adjustment is made to the base value.

### (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 REIT. (Please refer to the appendix for information on calculating FFW.)
- If a REIT 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)

### ① 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,

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

### ② 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:

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

- 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:

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

- 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.

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

## (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 dividends and the dividend amount announced in the earnings report.

### 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 and Actual Dividends

- 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 are different. Specifically, the total dividend adjustment amount is calculated on the 7th day of the 3rd month after the ex-dividend date (or the previous business day if the 7th day falls on a holiday), and the base market value is adjusted by that amount. (For example, for companies that announce earnings in March, the adjustment is made on June 7th.)

- Data used to calculate the adjustment amount is the information available as of three business days before the adjustment date. However, if a dividend adjustment is announced outside of this timeframe and the TSE deems that the adjustment will have a significant impact on the index value, an additional minor adjustment will be made.

$\text{New Base Market Value} = \frac{\text{Old Base Market Value} \times (\text{Previous Business Day Market Value} - \text{Total Dividend Adjustment} \pm \text{Adjustment Amount})}{\text{Previous Business Day Market Value}}$
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- \* Adjusted Dividend Per Constituent = Number of Shares Used for Index Calculation on Business Day Before Ex-Dividend Date × (Dividend Announced in Earnings Digest Summary - 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
- In addition to the Total Return Index explained above, the TSE also calculates the TOPIX Net Total Return Index which reflects the tax rate applied to constituent stock dividends.
- The base market value adjustment to reflect the dividend amount is made at the same time as (2). But when calculating the base market value, the "total dividend amount" and the "total dividend minor adjustment amount" shall each be multiplied by (1 minus the dividend tax rate).
- The tax rate used in calculating the TOPIX Net Total Return Index is withholding tax rate for listing shares (except for the local tax) at the adjustment date.

## **IV. Other**

### **1. Publication/Dissemination of Index Data**

#### **(1) Index Values**

- The Price return 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 price index is disseminated every second, and other indices are disseminated every 15 seconds.
- The Total Return Index and Net total return index (Tokyo Stock Exchange REIT index only) is calculated daily at market close.

#### **(2) Basic information**

- Basic information relating to TSE REIT-related 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 TSE REIT-related 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. Exemption of liability**

In the case of a computer malfunction, natural disaster or other unavoidable circumstances, the TSE may postpone or cancel calculation of the indices. The TSE shall not, under any circumstances, guarantee the accuracy of the indices. Should any error occur in index calculation, the TSE shall not be liable for any damages incurred by any person or organization.

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