

Progress in the Free-Float Adjustment of the TOPIX

by Shingo Ide

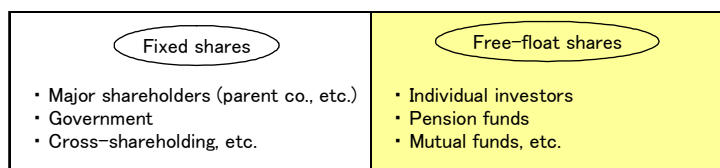
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1. What is Free-Float Adjustment?

In February 2004, the Tokyo Stock Exchange (TSE) announced an initiative to implement free-float adjustment of the TOPIX. The TSE plans to seek public comment to the end of April, release the results at the end of June, and implement free-float adjustment in 2005 or later. The TSE defines free-float adjusted shares as the portion of shares deemed to be available for purchase in the market; that is, listed shares excluding “fixed shares,” which are held long-term by major shareholders and unlikely to be traded. The free-float factor, then, is the ratio of free-float adjusted shares to listed shares.

Figure 1 Fixed Shares and Free-Float Shares



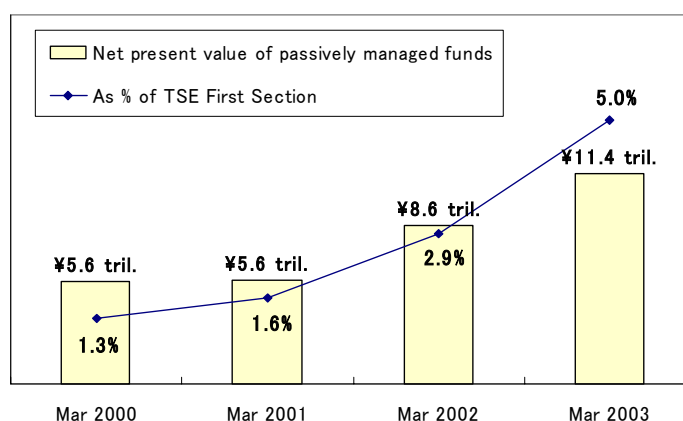
Source: NLI Research Institute.

Currently, TOPIX is a market capitalization-weighted composite index of the value of all shares (number of listed shares \times share price) listed in the TSE First Section. Thus if two components of the index have the same share price, the component with more listed shares is weighted more heavily. With free-float adjustment, the market value of components is calculated using the number of shares actually available for trading (number of listed shares \times free-float factor \times share price). As a result, large components may lose some weighting if their free-float factor is small, and vice versa.

2. The Need for Free-Float Adjustment

The move toward free-float adjustment of the TOPIX has been propelled by the sharp increase in passively managed funds, also known as index funds. According to the latest available data from a year ago, passive funds that fully replicate the composition of TOPIX roughly doubled in size in the past three years, and comprise 5% of the market capitalization of the TSE First Section.

Figure 2 Growth of Passively Managed Funds



Note: The net present value of passively managed funds is the total of the Government Pension Investment Fund, trust bank commingled fund accounts, and exchange traded funds (ETF).
 Source: Rating and Investment Information, Inc., *Newsletter on Pensions & Investment*; TSE, *Daily Report*.

The full replication approach adopted by some index funds is intended to mirror the TOPIX composition exactly. When these funds become very large, they cause the market supply and demand to tighten for index components with a low free-float factor (small number of shares circulating in the market compared to the TOPIX weighting), posing the risk of price distortions. Free-float adjustment would reduce the weight of such shares in the TOPIX composition, thereby alleviating the tightness. While the TSE initiated a free-float adjusted index in 1999—the S&P/TOPIX 150 index—other major foreign indices have already made the shift in recent years.

Figure 3 Major Foreign Indices with Free-Float Adjustment

Country/area	Date introduced	Index
Europe	September 2000	Dow Jones STOXX Index
U.K./World	June 2001	FTSE World Index
USA/World	May 2002	MSCI world Index
Germany	June 2002	DAX
France	December 2003	CAC 40

Source: TSE

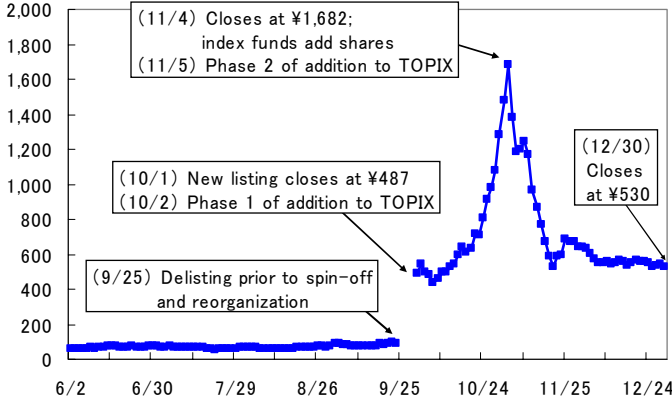
3. Why Implement Free-Float Adjustment Now?

Originally developed as an economic indicator of the stock market, TOPIX has grown in importance particularly as a benchmark for stock investment. As such, the need for free-float adjustment has also grown, as we pointed out several years ago.¹ However, what apparently prodded the TSE into action was the price volatility surrounding the delisting and relisting of Tokyu Construction Co. last fall when the company spun off its real estate business and reorganized. Usually, new listings are incorporated into TOPIX after one month. But to reduce

¹ See Shingo Ide, "Considering the Free-Float Adjustment of the TOPIX—The Need for a New Index and Possible Effects of Implementation," *NLI Research*, March 2001 (<http://www.nli-research.co.jp/eng/resea/econo/eco0103b.html>).

the trading burden on passively managed funds, the new listing was incorporated into TOPIX in two phases. In phase 1, the free-float shares at the time of the new listing—shares which had been converted from the former company’s shares—were added to TOPIX. This occurred uneventfully, and the stock closed at ¥487. A month later, however, when the bulk of the company’s capitalization—consisting of fixed shares held by the parent company—was added to TOPIX, the stock price spiked to ¥1,682. The stock subsequently plunged to ¥530 at the end of 2003, returning to roughly the same level as at the time of the new listing.

Figure 4 Stock Price of Tokyu Construction Co.



Source: NLI Research Institute

This volatility is attributed to the massive growth of passively managed index funds, combined with the opportunistic trading by hedge funds and other investors. To fully replicate the TOPIX composition over the two phases, passively managed funds needed to purchase shares in both phases at the previous day’s closing price, regardless of the price level. Knowing this in advance, hedge funds and others bid up the price and reaped substantial gains. Had TOPIX been free-float adjusted, however, the price spike would in all likelihood not have occurred.

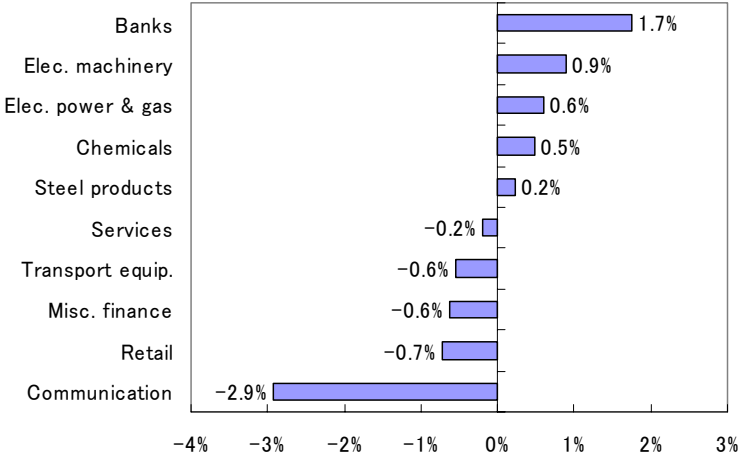
4. Refining the TSE Proposal

When industry weightings are recalculated based on the TSE’s free-float adjustment proposal, the greatest decreases occur in communication and retail industries, and the greatest increases in banks and electrical machinery (at the end of April 2004).

The smaller weighting for communication is attributed to the effect of large shareholdings of parent companies such as NTT DoCoMo and Yahoo. On the other hand, the larger weighting for banks is surprising, even considering the fact that cross-shareholdings continue to unwind. The problem is that the TSE proposal defines fixed shares to include only the shareholdings of directors, treasury stock, and shareholdings of the ten largest shareholders. A strong case can be

made that for bank stocks, a substantial portion of shares held by other major shareholders should also be counted as fixed shares. While the TSE proposal apparently seeks objectivity and transparency, further refinements are needed to satisfy investors. As such, attention is keenly focused on the public comment results to be released soon.

Figure 5 Top 5 Gainers and Losers in Industry Weighting After Free-Float Adjustment



Notes: Using *Major Shareholders Data* (Toyo Keizai Inc.) we calculated fixed shares as the sum of shareholdings of the ten largest shareholders, shareholdings of directors, and treasury stock.
 Source: Compiled by NLI Research Institute