

C A M B R I D G E A S S O C I A T E S L L C

GLOBAL MARKET COMMENT

JAPANESE EQUITY INDICES: A LOOK UNDER THE HOOD

June 2004

Eric Winig
Marcelo Morales

Copyright © 2004 by Cambridge Associates LLC. All rights reserved.

This report may not be displayed, reproduced, distributed, transmitted or used to create derivative works in any form, in whole or in portion, by any means, without written permission from Cambridge Associates LLC ("CA"). Copying of this publication is a violation of federal copyright laws (17 U.S.C. 101 et seq.). Violators of this copyright may be subject to liability for substantial monetary damages. The information and material published in this report are confidential and non-transferable. This means that authorized members may not disclose any information or material derived from this report to third parties, or use information or material from this report, without prior written authorization. An authorized member may disclose information or material from this report to its staff, trustees, or Investment Committee with the understanding that these individuals will treat it confidentially. Additionally, information from this report may be disclosed if disclosure is required by law or court order, but members are required to provide notice to CA reasonably in advance of such disclosure. This report is provided for informational purposes only. It is not intended to constitute an offer of securities of any of the issuers that are described in the report. This report is provided only to persons that CA believes to be "Accredited Investors" as that term is defined in Regulation D under the Securities Act of 1933. Investors should completely review all Fund offering materials before considering an investment. No part of this report is intended as a recommendation of any firm or any security. Factual information contained herein about investment firms and their returns which has not been independently verified has generally been collected from the firms themselves through the mail. CA can neither assure nor accept responsibility for accuracy, but substantial legal liability may apply to misrepresentations of results delivered through the mail. CA manager universe statistics, including medians, are derived from CA's proprietary database covering investment managers. These universe statistics and rankings exclude managers that exclude cash from their reported total returns, and for calculations including any years from 1998 to the present, those managers with less than \$50 million in product assets. Returns for inactive (discontinued) managers are included if performance is available for the entire period measured. Performance results are generally gross of investment management fees. CA does not necessarily endorse or recommend the managers in this universe.

Japanese Equity Indices: A Look Under the Hood

As noted in our May 2004 Global Market Comment, *Bullish on Japan*, we are quite positive on the outlook for Japanese shares, and recommend investors look to increase their exposure to this area. Given that there are many Japanese equity indices, the following provides a comparison designed to assist investors in understanding the fundamental differences among the broadest and most commonly used indices.

Most Japanese indices are calculated by the Tokyo Stock Exchange, and only include equities traded on this exchange. (They thus exclude the Jasdaq, which contains more than 900 companies representing roughly ¥130 trillion in market cap.) The TOPIX Stock Price Index (generally referred to simply as TOPIX) includes all of the roughly 1,500 equities traded on the “First Section” of the exchange, reserved for larger companies with at least 20 million listed shares, while the Second Section consists of about 500 stocks too small for inclusion in the First Section. (See Table A.) There are also subindices of First section equities: the TOPIX Small Capitalization, for example, includes equities with fewer than 60 million listed shares, while the TOPIX Small consists of all First section stocks except the 500 largest, which are tracked in the TOPIX 500. In rough terms, the TOPIX Small Capitalization represents the smallest one-fifth of the First section, and the TOPIX Small, the smallest two-thirds. There are no subindices for Second Section equities.

The other major index providers, MSCI and FTSE, both use committees that rely on rules-based processes to construct their indices. In addition, both define the Japanese market as the *total* equity market; thus, these indices can contain equities from any Japanese exchange. MSCI divides the market into industry groups, then targets 85% of the free-float-adjusted market capitalization in each group for inclusion, specifically seeking a representative sampling of company sizes, subject to liquidity restraints. FTSE takes a similar approach, aiming to capture between 85% and 95% of the available equity in the market after screening out or restricting companies that are too small, have limited free float, or lack sufficient liquidity.

For those who wish to obtain the broadest market exposure, the TOPIX seems a fairly simple choice: the index has the largest number of stocks (more than 1,500), with a total market cap of roughly ¥350 trillion as of May 31. (See Table B.) For comparison, MSCI Japan holds only 345 stocks with a total market cap of just under ¥200 trillion. As would be expected, the MSCI Japan Index is more concentrated, with the top 50 stocks accounting for 54.7% of the index’s market cap, versus 43.0% for the TOPIX. Yet despite their differences, the two indices have performed quite similarly, and with comparable levels of risk, for virtually all periods studied. (See Table C.) The FTSE Japan Index, meanwhile, has a much shorter history, but is similarly concentrated to MSCI, and has posted comparable performance and volatility numbers to MSCI and TOPIX over the ten years for which we have data.¹ Still, due to the different manner in which the three indices are constructed, investors should not be surprised to see significant variance in returns and volatility data on occasion.

¹ Unfortunately, due to the different methodologies used by TOPIX, MSCI, and FTSE to classify companies by industry, we are unable to compare the industry weightings of Japanese indices.

The TOPIX and MSCI Japan appear to be the most popular choices among managers: Of the 42 Japan managers in our database that stated a preference for a particular benchmark, 22 use TOPIX, 18 use MSCI, and two use FTSE Japan.

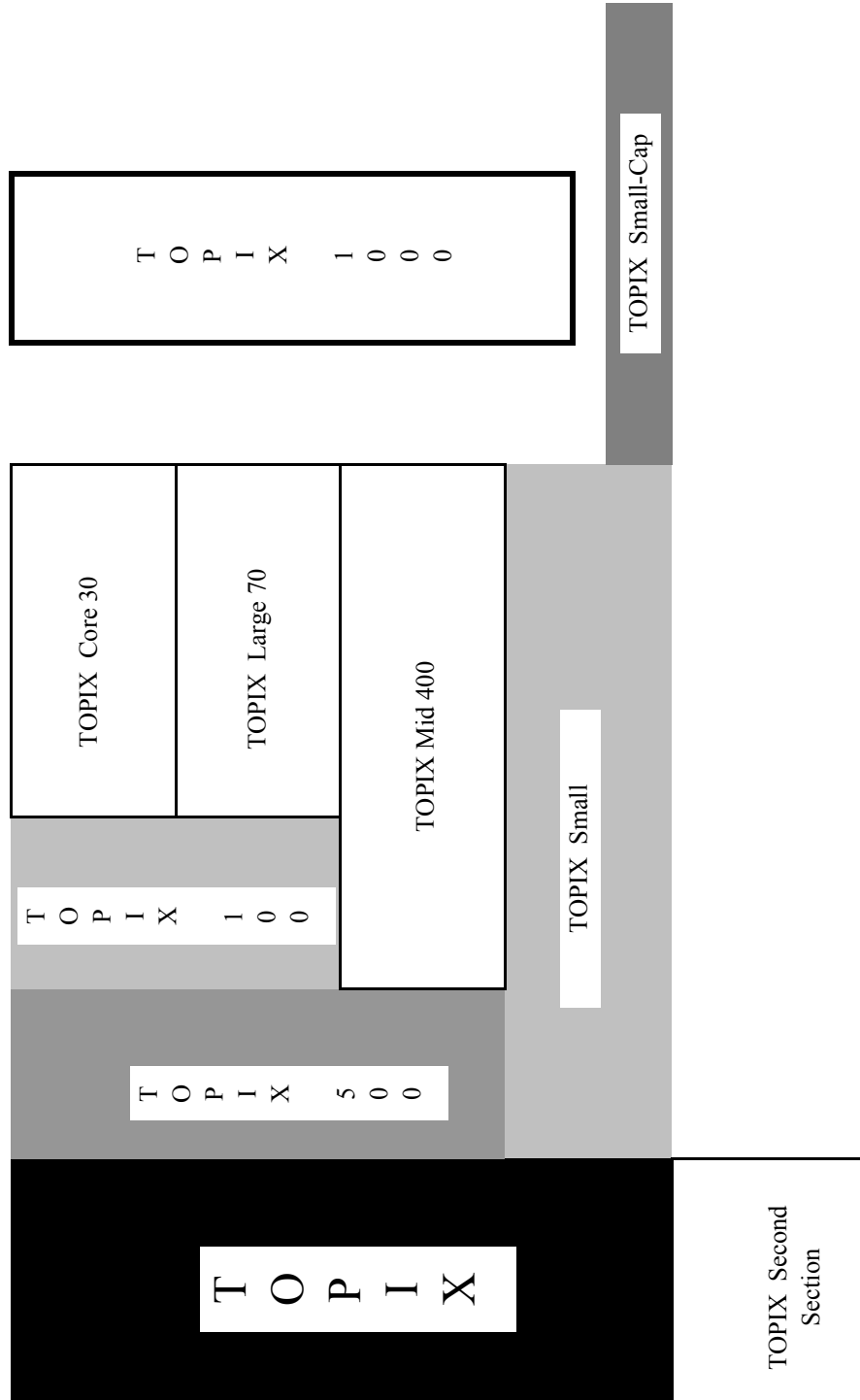
For investors interested in small caps, there are four commonly used indices, two “small” and two “micro.” The small-cap indices are MSCI Japan Small Cap and TOPIX Small, while the micro-cap indices are TOPIX Small Capitalization and TOPIX Second Section. Unfortunately, data for these indices is somewhat limited: TOPIX Small and MSCI Japan Small Capitalization, for example, have only ten years worth of data. Still, we can draw some conclusions from the makeup of the indices. The two small-cap indices, for example, are constructed quite differently: While the TOPIX Small has more than 1,000 companies and a total market cap above ¥40 trillion, MSCI Japan Small Capitalization contains a mere 366 companies, with a total market cap of less than ¥20 trillion. (See Table D.) MSCI is also far more concentrated, with its top 50 companies accounting for nearly 35% of its total market cap versus less than 18% for TOPIX Small. This may explain the higher volatility of the MSCI Japan Index, which has *slightly* outperformed over the ten years for which we have data, but with a significantly higher standard deviation. (See Table E.) In sum, the TOPIX Small appears to be more representative of Japanese small caps, but would likely result in higher transaction costs to investors choosing to index through full replication or hiring active managers that closely track their benchmarks.

The two micro-cap indices actually appear quite similar, which is surprising considering their differences in methodology. The TOPIX Small Capitalization, for example, contains companies with between 20 million and 60 million shares, while the Second Section includes those with fewer than 20 million shares. Still, the indices have similar concentration numbers, and returns and volatility data have historically been quite comparable.²

The wide range of available indices provide investors with an array of reasonable options to gain exposure to Japanese equities: From nearly complete market coverage at the total market and capitalization sector levels, to more concentrated indices provided by MSCI and FTSE.

² While the Second Section appears to have outperformed over long time frames, this analysis is end-point sensitive and skewed by the index’s 70.9% return over the past year; when this is taken out, the two indices’ long-term returns are separated by only 60 basis points.

Table A
TOKYO STOCK EXCHANGE INDICES



Source: Tokyo Stock Exchange website.

Table B

MAKEUP OF BROAD JAPANESE EQUITY INDICES

As of May 31, 2004

	<u>TOPIX</u>	<u>MSCI Japan</u>	<u>FTSE Japan</u>	<u>Nikkei 225</u>
Concentration				
Top 10 Stocks (%)	19.5	23.5	22.9	31.7
Top 20 Stocks (%)	28.6	35.4	33.4	45.6
Top 50 Stocks (%)	43.0	54.7	50.3	67.7
Total Market Capitalization (¥ Billion)	350,487.1	196,550.7	300,173.7	214,825.9
Market Capitalization Range (¥ Billion)	14,440.0 - 2.6	11,552.0 - 43.2	14,440.0 - 45.1	14,440.0 - 28.7
Number of Stocks	1,556	345	435	225

Sources: FTSE International Limited, Morgan Stanley Capital International, and Thomson Datastream. MSCI data provided "as is" without any express or implied warranties.

Note: Nikkei 225 constituents are as of June 17, 2004, while market capitalization figures are as of May 31, 2004.

Table C

RETURNS AND VOLATILITY FOR BROAD JAPANESE EQUITY INDICES

As of May 31, 2004

Average Annual Compound Returns (%)

	<u>30 Yrs</u>	<u>20 Yrs</u>	<u>15 Yrs</u>	<u>10 Yrs</u>	<u>5 Yrs</u>	<u>3 Yrs</u>	<u>1 Yr</u>
TOPIX	5.37	2.79	-4.40	-2.97	-1.67	-3.57	37.42
MSCI Japan	5.50	2.89	-4.42	-2.95	-2.89	-4.81	37.67
FTSE Japan	---	---	---	-2.53	-1.43	-4.16	38.34
Nikkei 225	2.90	0.61	-7.16	-6.05	-6.95	-5.38	33.38

Annualized Standard Deviations (%)

	<u>30 Yrs</u>	<u>20 Yrs</u>	<u>15 Yrs</u>	<u>10 Yrs</u>	<u>5 Yrs</u>	<u>3 Yrs</u>	<u>1 Yr</u>
TOPIX	17.68	19.88	20.51	17.22	16.62	16.71	14.58
MSCI Japan	18.38	20.18	20.31	16.98	16.07	16.72	13.45
FTSE Japan	---	---	---	17.07	16.33	16.83	13.68
Nikkei 225	18.92	21.41	22.81	19.77	19.49	19.25	15.06

Sources: FTSE International Limited, Morgan Stanley Capital International, and Thomson Datastream. MSCI data provided "as is" without any express or implied warranties.

Note: Nikkei 225 data are calculated based on price returns.

Table D

MAKEUP OF SMALL- AND MICRO-CAP JAPANESE EQUITY INDICES

As of May 31, 2004

	<u>TOPIX Small</u>	<u>MSCI Japan Small-Cap</u>	<u>TOPIX Small-Cap</u>	<u>TOPIX 2nd Section</u>
Concentration				
Top 10 Stocks (%)	5.4	9.3	13.7	13.6
Top 20 Stocks (%)	8.8	16.6	23.4	20.8
Top 50 Stocks (%)	17.5	34.4	42.5	36.8
Total Market Capitalization (¥ Billion)	40,263.3	19,529.7	6,041.9	8,472.1
Market Capitalization Range (¥ Billion)	559.6 - 2.6	217.1 - 8.8	135.7 - 2.6	196.1 - 1.2
Number of Stocks	1,044	366	309	576

Sources: Morgan Stanley Capital International and Thomson Datastream. MSCI data provided "as is" without any express or implied warranties.

Table E**RETURNS AND VOLATILITY FOR SMALL AND MICRO-CAP
JAPANESE EQUITY INDICES****As of May 31, 2004****Average Annual Compound Returns (%)**

	<u>20 Yrs</u>	<u>15 Yrs</u>	<u>10 Yrs</u>	<u>5 Yrs</u>	<u>3 Yrs</u>	<u>1 Yr</u>
TOPIX Small	---	---	-6.20	1.32	4.69	38.49
MSCI Japan Small-Cap	---	---	-5.71	2.84	3.40	50.04
TOPIX Small-Cap	1.21	-4.35	-4.51	3.99	6.04	31.19
TOPIX 2nd Section	3.15	-0.16	2.17	10.80	10.31	70.88

Annualized Standard Deviations (%)

	<u>20 Yrs</u>	<u>15 Yrs</u>	<u>10 Yrs</u>	<u>5 Yrs</u>	<u>3 Yrs</u>	<u>1 Yr</u>
TOPIX Small	---	---	21.36	18.75	18.29	19.50
MSCI Japan Small-Cap	---	---	24.43	20.97	19.95	20.05
TOPIX Small-Cap	22.11	23.57	20.34	16.69	16.61	16.74
TOPIX 2nd Section	23.08	24.73	23.28	23.67	20.93	25.57

Sources: Morgan Stanley Capital International and Thomson Datastream. MSCI data provided "as is" without any express or implied warranties.

Note: All data are calculated based on price returns.

Table F

CORRELATIONS FOR VARIOUS JAPANESE INDICES

	Major Indices						
	January 1, 1994 - June 30, 2004			April 1, 1973 - June 30, 2004			
	<u>TOPIX</u>	<u>Nikkei 225</u>	<u>MSCI Japan</u>	<u>FTSE Japan</u>	<u>TOPIX</u>	<u>Nikkei 225</u>	<u>MSCI Japan</u>
TOPIX	1.00				1.00		
Nikkei 225	0.96	1.00			0.96	1.00	
MSCI Japan	0.99	0.96	1.00		0.98	0.94	1.00
FTSE Japan	0.99	0.96	0.99	1.00			

Alternative Indices

	January 1, 1994 - June 30, 2004			
	<u>TOPIX</u>	<u>TOPIX</u>	<u>TOPIX Small</u>	<u>MSCI Japan</u>
	<u>2nd Section</u>	<u>Small-Cap</u>	<u>Small-Cap</u>	<u>Small-Cap</u>
TOPIX 2nd Section	1.00			
TOPIX Small-Cap	0.89	1.00		
TOPIX Small	0.86	0.99	1.00	
MSCI Japan Small-Cap	0.87	0.97	0.99	1.00

Sources: FTSE International Limited, Morgan Stanley Capital International, and Thomson Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Nikkei 225 calculation is based on price returns. Correlations are based on quarterly data.