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## GLOBAL MARKET COMMENT

### Asian Markets Primer Part II

### Finding Diversification in Asian Equities

February 2005

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## Finding Diversification in Asian Equities

This is the second in a series of primers designed to introduce investors to the characteristics of Asian capital markets. This month, we look at the diversification benefits offered by investing in individual countries and regions in Asia by examining correlations of the MSCI Asian family of indices.

### Summary Observations

- Diversification benefits of major Asian equity indices have accrued fairly evenly to Western investors. Correlations between the broadest Asian index—MSCI All Country Asia Pacific Index<sup>1</sup>—and major Western equity indices have been in the 0.47 to 0.54 range since 1988, when the broad Asian index data begin (Table A).
- Among developed markets, Japan has consistently offered the highest degree of diversification to Western investors -0.32 to 0.43 since 1971. Without Japan, correlations have been moderately higher, 0.52 to 0.57 for the MSCI Pacific ex Japan Index (Table B).
- In the aggregate, emerging Asian markets have offered comparable diversification benefits to Western investors. Since 1988, the MSCI Emerging Asia Index has had correlations of 0.51 to 0.55 with major Western developed markets (Table C).
- Correlations among developed Asian markets have generally been low since 1970 (0.33 to 0.53), indicating these markets behave fairly autonomously. Japanese equities have consistently offered the lowest correlations within developed Asia (Table D).
- Since 1988, correlations among individual emerging Asian markets have been extremely low, ranging from 0.08 to 0.57. Among developed Asian markets, Japan offers the lowest correlations with emerging Asian equities as a whole, and with individual emerging country equities (Table D).
- Over time, correlations have been unstable and appear to have mean-reverting characteristics (Tables F through Q). In general, correlations among Asian country equities and between Asia and developed Western equities have been relatively high in recent years, compared to their long-term averages; however, current levels are by no means unprecedented.
- Correlations between major Western indices and developed Asia ex Japan are generally at the peak of their 34-year history. Correlations generally reached cyclical lows in 1980, 1987, and 1993-94, and cyclical highs in 1975-76, the late 1980s/early 1990s, and 2000-present.

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<sup>1</sup> This index includes both developed and emerging Asian markets. It consists of Australia, China, Hong Kong, India, Indonesia, Japan, Korea, Malaysia, New Zealand, Pakistan, the Philippines, Singapore, Taiwan, and Thailand.

- Between 1988 and present, correlations between major Western developed markets and the MSCI Emerging Markets Asia Index reached their lowest level in 1993, and they have generally risen steadily since then. Current levels are high, comparable to those experienced in 1997-98.

Table A

**CORRELATION MATRIX:  
MSCI AC ASIA PACIFIC, PACIFIC EX JAPAN WITH MAJOR DEVELOPED WESTERN INDICES**

January 1, 1988 - January 31, 2005

Local Currency

|                      | <u>MSCI AC<br/>Asia Pacific</u> | <u>MSCI<br/>Pacific ex JP</u> | <u>MSCI<br/>Japan</u> | <u>S&amp;P 500</u> | <u>Nasdaq</u> | <u>MSCI U.K.</u> | <u>MSCI<br/>Europe ex U.K.</u> |
|----------------------|---------------------------------|-------------------------------|-----------------------|--------------------|---------------|------------------|--------------------------------|
| MSCI AC Asia Pacific | 1.00                            |                               |                       |                    |               |                  |                                |
| MSCI Pacific ex JP   | 0.56                            | 1.00                          |                       |                    |               |                  |                                |
| MSCI Japan           | 0.97                            | 0.37                          | 1.00                  |                    |               |                  |                                |
| S&P 500              | 0.49                            | 0.59                          | 0.39                  | 1.00               |               |                  |                                |
| Nasdaq               | 0.46                            | 0.53                          | 0.36                  | 0.80               | 1.00          |                  |                                |
| MSCI U.K.            | 0.47                            | 0.60                          | 0.38                  | 0.73               | 0.55          | 1.00             |                                |
| MSCI Europe ex U.K.  | 0.54                            | 0.58                          | 0.45                  | 0.72               | 0.64          | 0.76             | 1.00                           |

Sources: Morgan Stanley Capital International, Standard & Poor's, Thomson Datastream, and *The Wall Street Journal*. MSCI data provided "as is" without any express or implied warranties.

Note: Nasdaq data are price returns.

Table B

**CORRELATION MATRIX:  
DEVELOPED ASIA WITH MAJOR DEVELOPED WESTERN INDICES**

**March 1, 1971 - January 31, 2005**

|                     | Local Currency      |                           |                   |                       |                       |                       |                    |               |
|---------------------|---------------------|---------------------------|-------------------|-----------------------|-----------------------|-----------------------|--------------------|---------------|
|                     | <u>MSCI Pacific</u> | <u>MSCI Pacific ex JP</u> | <u>MSCI Japan</u> | <u>MSCI Hong Kong</u> | <u>MSCI Singapore</u> | <u>MSCI Australia</u> | <u>S&amp;P 500</u> | <u>Nasdaq</u> |
| MSCI Pacific        | 1.00                |                           |                   |                       |                       |                       |                    |               |
| MSCI Pacific ex JP  | 0.52                | 1.00                      |                   |                       |                       |                       |                    |               |
| MSCI Japan          | 0.97                | 0.35                      | 1.00              |                       |                       |                       |                    |               |
| MSCI Hong Kong      | 0.41                | 0.80                      | 0.27              | 1.00                  |                       |                       |                    |               |
| MSCI Singapore      | 0.46                | 0.71                      | 0.36              | 0.53                  | 1.00                  |                       |                    |               |
| MSCI Australia      | 0.41                | 0.79                      | 0.28              | 0.33                  | 0.43                  | 1.00                  |                    |               |
| S&P 500             | 0.44                | 0.57                      | 0.36              | 0.38                  | 0.49                  | 0.53                  | 1.00               |               |
| Nasdaq              | 0.42                | 0.54                      | 0.34              | 0.35                  | 0.45                  | 0.49                  | 0.84               | 1.00          |
| MSCI U.K.           | 0.40                | 0.54                      | 0.32              | 0.38                  | 0.50                  | 0.47                  | 0.60               | 1.00          |
| MSCI Europe ex U.K. | 0.50                | 0.52                      | 0.43              | 0.36                  | 0.40                  | 0.47                  | 0.64               | 1.00          |

Sources: Morgan Stanley Capital International, Standard & Poor's, Thomson Datastream, and *The Wall Street Journal*. MSCI data provided "as is" without any express or implied warranties.

Note: Nasdaq data are price returns.

Table C

**CORRELATION MATRIX:  
EMERGING ASIA WITH MAJOR DEVELOPED WESTERN INDICES**

**January 1, 1988 - January 31, 2005**

|                     | <b>Local Currency</b> |                   |                   |                       |                   |                      |                      |                         |                    |                      |                            |
|---------------------|-----------------------|-------------------|-------------------|-----------------------|-------------------|----------------------|----------------------|-------------------------|--------------------|----------------------|----------------------------|
|                     | <u>MSCI EM Asia</u>   | <u>MSCI China</u> | <u>MSCI India</u> | <u>MSCI Indonesia</u> | <u>MSCI Korea</u> | <u>MSCI Malaysia</u> | <u>MSCI Pakistan</u> | <u>MSCI Philippines</u> | <u>MSCI Taiwan</u> | <u>MSCI Thailand</u> | <u>MSCI Europe ex U.K.</u> |
| MSCI EM Asia        | 1.00                  |                   |                   |                       |                   |                      |                      |                         |                    |                      |                            |
| MSCI China          | 0.58                  | 1.00              |                   |                       |                   |                      |                      |                         |                    |                      |                            |
| MSCI India          | 0.51                  | 0.27              | 1.00              |                       |                   |                      |                      |                         |                    |                      |                            |
| MSCI Indonesia      | 0.36                  | 0.16              | 0.22              | 1.00                  |                   |                      |                      |                         |                    |                      |                            |
| MSCI Korea          | 0.53                  | 0.29              | 0.23              | 0.28                  | 1.00              |                      |                      |                         |                    |                      |                            |
| MSCI Malaysia       | 0.77                  | 0.43              | 0.25              | 0.32                  | 0.33              | 1.00                 |                      |                         |                    |                      |                            |
| MSCI Pakistan       | 0.32                  | 0.09              | 0.36              | 0.17                  | 0.11              | 0.22                 | 1.00                 |                         |                    |                      |                            |
| MSCI Philippines    | 0.63                  | 0.41              | 0.16              | 0.37                  | 0.23              | 0.54                 | 0.14                 | 1.00                    |                    |                      |                            |
| MSCI Taiwan         | 0.53                  | 0.44              | 0.32              | 0.08                  | 0.28              | 0.36                 | 0.18                 | 0.36                    | 1.00               |                      |                            |
| MSCI Thailand       | 0.72                  | 0.38              | 0.15              | 0.35                  | 0.46              | 0.54                 | 0.25                 | 0.57                    | 0.36               | 1.00                 |                            |
| S&P 500             | 0.54                  | 0.44              | 0.24              | 0.23                  | 0.34              | 0.38                 | 0.07                 | 0.38                    | 0.26               | 0.42                 | 1.00                       |
| Nasdaq              | 0.53                  | 0.35              | 0.42              | 0.21                  | 0.36              | 0.34                 | 0.19                 | 0.28                    | 0.26               | 0.36                 | 0.80                       |
| MSCI U.K.           | 0.51                  | 0.28              | 0.16              | 0.21                  | 0.37              | 0.38                 | 0.05                 | 0.35                    | 0.26               | 0.40                 | 0.73                       |
| MSCI Europe ex U.K. | 0.55                  | 0.22              | 0.28              | 0.31                  | 0.30              | 0.38                 | 0.11                 | 0.36                    | 0.37               | 0.64                 | 0.76                       |

Sources: Morgan Stanley Capital International, Standard & Poor's, Thomson Datastream, and *The Wall Street Journal*. MSCI data provided "as is" without any express or implied warranties.

Notes: Nasdaq data are price returns. Data for MSCI Pakistan Index start on January 1, 1993. Data for MSCI China and MSCI India indices start on January 1, 1994.

**Table D**  
**CORRELATION MATRIX:**  
**DEVELOPED ASIA**  
**January 1, 1970 - January 31, 2005**

|                    | <b>Local Currency</b> |                           |                   |                       |                       |
|--------------------|-----------------------|---------------------------|-------------------|-----------------------|-----------------------|
|                    | <u>MSCI Pacific</u>   | <u>MSCI Pacific ex JP</u> | <u>MSCI Japan</u> | <u>MSCI Hong Kong</u> | <u>MSCI Singapore</u> |
| MSCI Pacific       | 1.00                  |                           |                   |                       |                       |
| MSCI Pacific ex JP | 0.53                  | 1.00                      |                   |                       |                       |
| MSCI Japan         | 0.97                  | 0.35                      | 1.00              |                       |                       |
| MSCI Hong Kong     | 0.41                  | 0.79                      | 0.27              | 1.00                  |                       |
| MSCI Singapore     | 0.46                  | 0.70                      | 0.36              | 0.53                  | 1.00                  |
| MSCI Australia     | 0.42                  | 0.79                      | 0.29              | 0.33                  | 0.42                  |
|                    |                       |                           |                   |                       | 1.00                  |

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

Table E

**CORRELATION MATRIX:  
DEVELOPED AND EMERGING ASIA**

**January 1, 1988 – January 31, 2005**

**Local Currency**

|                    | MSCI Pacific | MSCI Pacific ex JP | MSCI Japan | MSCI Hong Kong | MSCI Singapore | MSCI Australia | MSCI EM Asia | MSCI China | MSCI India | MSCI Indonesia | MSCI Korea | MSCI Malaysia | MSCI Pakistan | MSCI Philippines | MSCI Taiwan | MSCI Thailand |
|--------------------|--------------|--------------------|------------|----------------|----------------|----------------|--------------|------------|------------|----------------|------------|---------------|---------------|------------------|-------------|---------------|
| MSCI Pacific       | 1.00         |                    |            |                |                |                |              |            |            |                |            |               |               |                  |             |               |
| MSCI Pacific ex JP | 0.52         | 1.00               |            |                |                |                |              |            |            |                |            |               |               |                  |             |               |
| MSCI Japan         | 0.98         | 0.37               | 1.00       |                |                |                |              |            |            |                |            |               |               |                  |             |               |
| MSCI Hong Kong     | 0.44         | 0.88               | 0.30       | 1.00           |                |                |              |            |            |                |            |               |               |                  |             |               |
| MSCI Singapore     | 0.52         | 0.82               | 0.40       | 0.70           | 1.00           |                |              |            |            |                |            |               |               |                  |             |               |
| MSCI Australia     | 0.46         | 0.74               | 0.37       | 0.43           | 0.50           | 1.00           |              |            |            |                |            |               |               |                  |             |               |
| MSCI EM Asia       | 0.53         | 0.77               | 0.42       | 0.68           | 0.76           | 0.48           | 1.00         |            |            |                |            |               |               |                  |             |               |
| MSCI China         | 0.27         | 0.61               | 0.14       | 0.62           | 0.56           | 0.35           | 0.63         | 1.00       |            |                |            |               |               |                  |             |               |
| MSCI India         | 0.35         | 0.30               | 0.31       | 0.24           | 0.29           | 0.28           | 0.51         | 0.22       | 1.00       |                |            |               |               |                  |             |               |
| MSCI Indonesia     | 0.21         | 0.32               | 0.17       | 0.22           | 0.32           | 0.27           | 0.36         | 0.19       | 0.22       | 1.00           |            |               |               |                  |             |               |
| MSCI Korea         | 0.42         | 0.38               | 0.38       | 0.32           | 0.37           | 0.31           | 0.53         | 0.26       | 0.23       | 0.28           | 1.00       |               |               |                  |             |               |
| MSCI Malaysia      | 0.35         | 0.67               | 0.24       | 0.58           | 0.67           | 0.35           | 0.77         | 0.50       | 0.25       | 0.32           | 0.33       | 1.00          |               |                  |             |               |
| MSCI Pakistan      | 0.13         | 0.22               | 0.09       | 0.15           | 0.25           | 0.14           | 0.32         | 0.10       | 0.36       | 0.17           | 0.11       | 0.22          | 1.00          |                  |             |               |
| MSCI Philippines   | 0.32         | 0.66               | 0.22       | 0.58           | 0.60           | 0.42           | 0.63         | 0.48       | 0.16       | 0.37           | 0.23       | 0.54          | 0.14          | 1.00             |             |               |
| MSCI Taiwan        | 0.34         | 0.38               | 0.28       | 0.33           | 0.41           | 0.24           | 0.53         | 0.47       | 0.32       | 0.08           | 0.28       | 0.36          | 0.18          | 0.36             | 1.00        |               |
| MSCI Thailand      | 0.38         | 0.56               | 0.30       | 0.48           | 0.55           | 0.35           | 0.72         | 0.43       | 0.15       | 0.35           | 0.46       | 0.54          | 0.25          | 0.57             | 0.36        | 1.00          |

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

Notes: Data for MSCI China and MSCI Pakistan indices start on January 1, 1993. Data for MSCI India Index start on January 1, 1994.

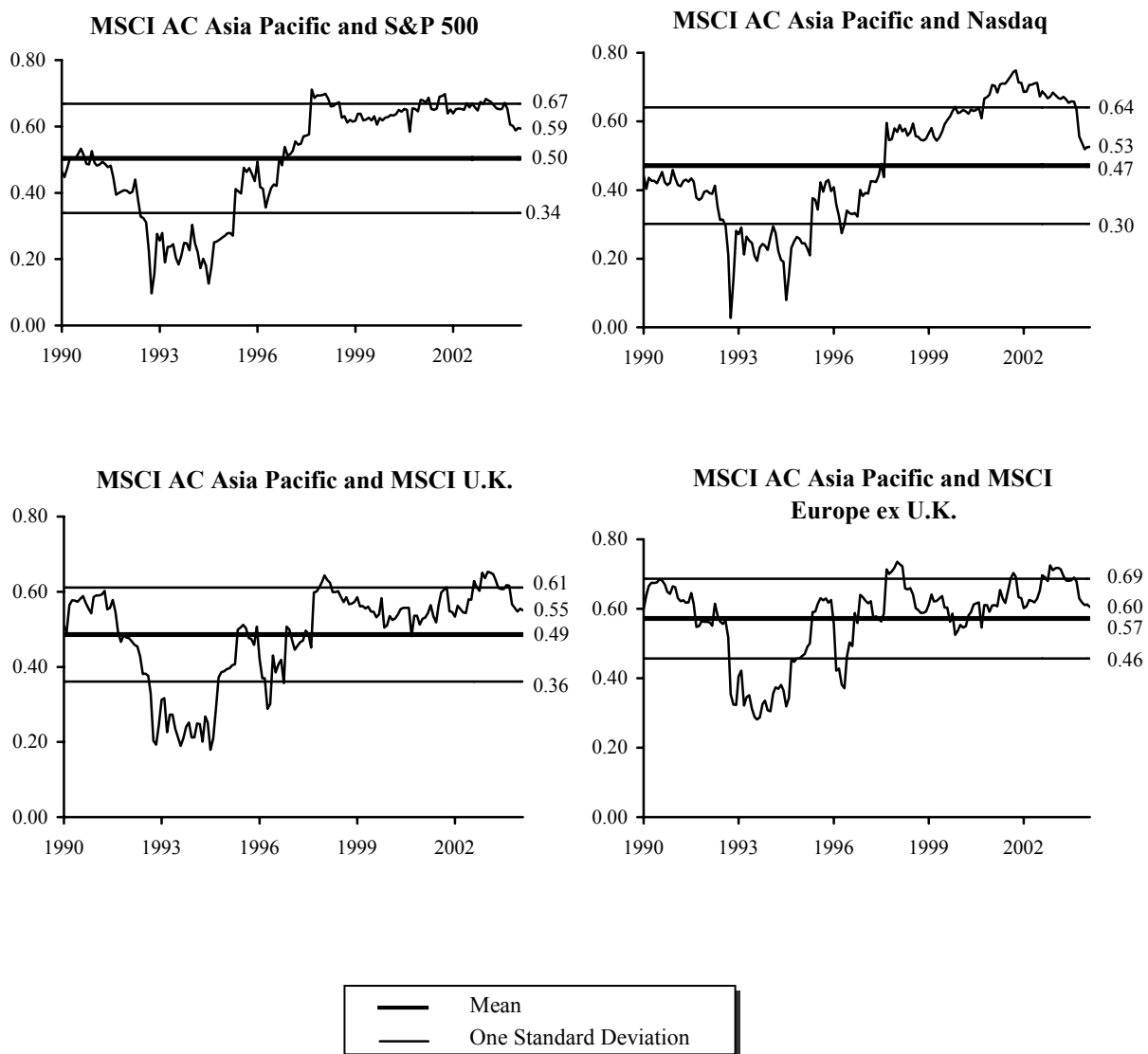


Table F

**36-MONTH ROLLING CORRELATIONS OF  
MSCI ALL COUNTRY ASIA PACIFIC WITH  
MAJOR WESTERN EQUITY INDICES**

**January 1, 1988 - January 31, 2005**

**Local Currency**



Sources: Morgan Stanley Capital International, Standard & Poor's, Thomson Datastream, and *The Wall Street Journal*. MSCI data provided "as is" without any express or implied warranties.

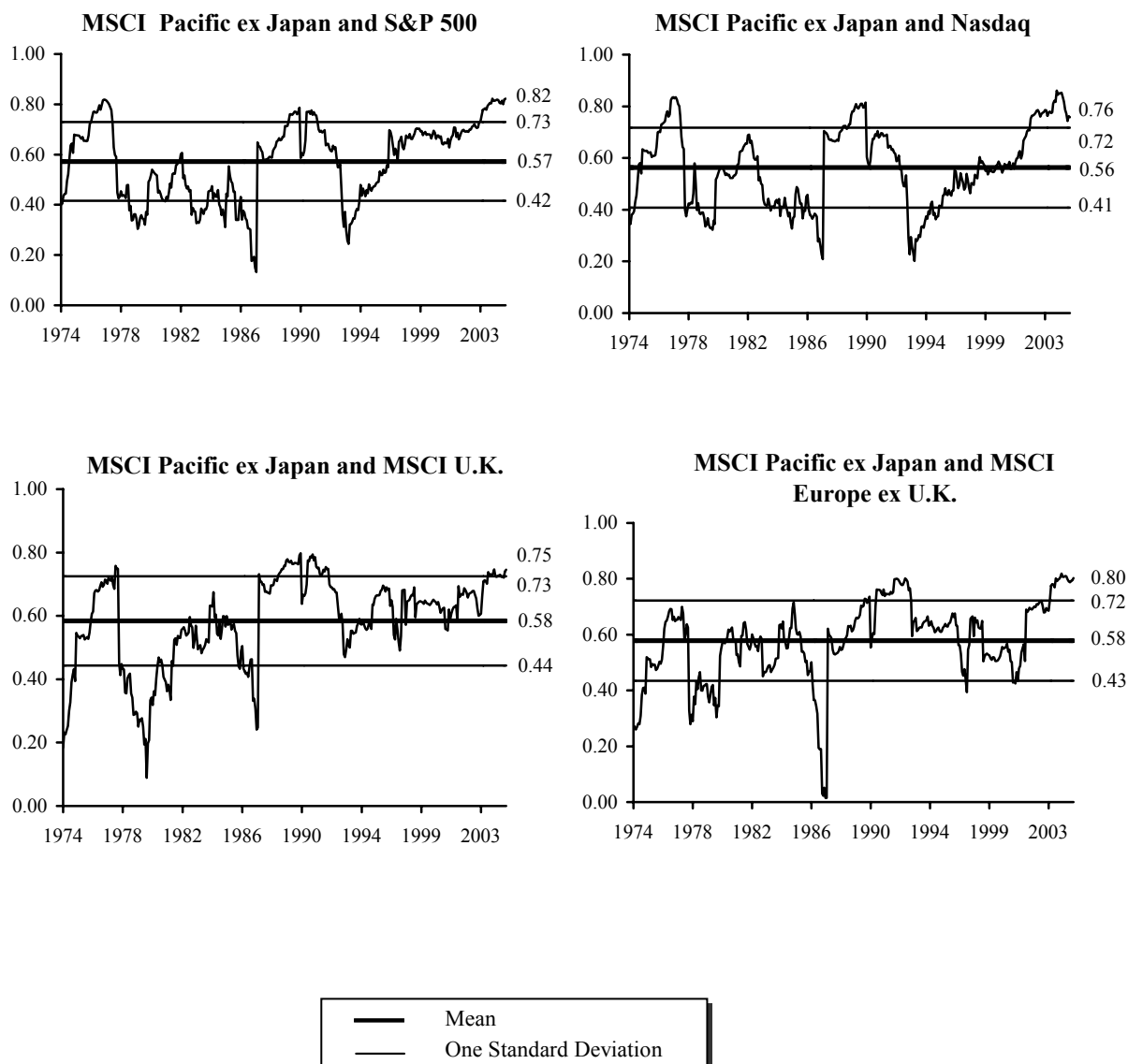
Note: Nasdaq data are price returns.

**Table G**

**36-MONTH ROLLING CORRELATIONS OF  
MSCI PACIFIC EX JAPAN WITH MAJOR WESTERN EQUITY INDICES**

**March 1, 1971 - January 31, 2005**

**Local Currency**



Sources: Morgan Stanley Capital International, Standard & Poor's, Thomson Datastream, and *The Wall Street Journal*. MSCI data provided "as is" without any express or implied warranties.

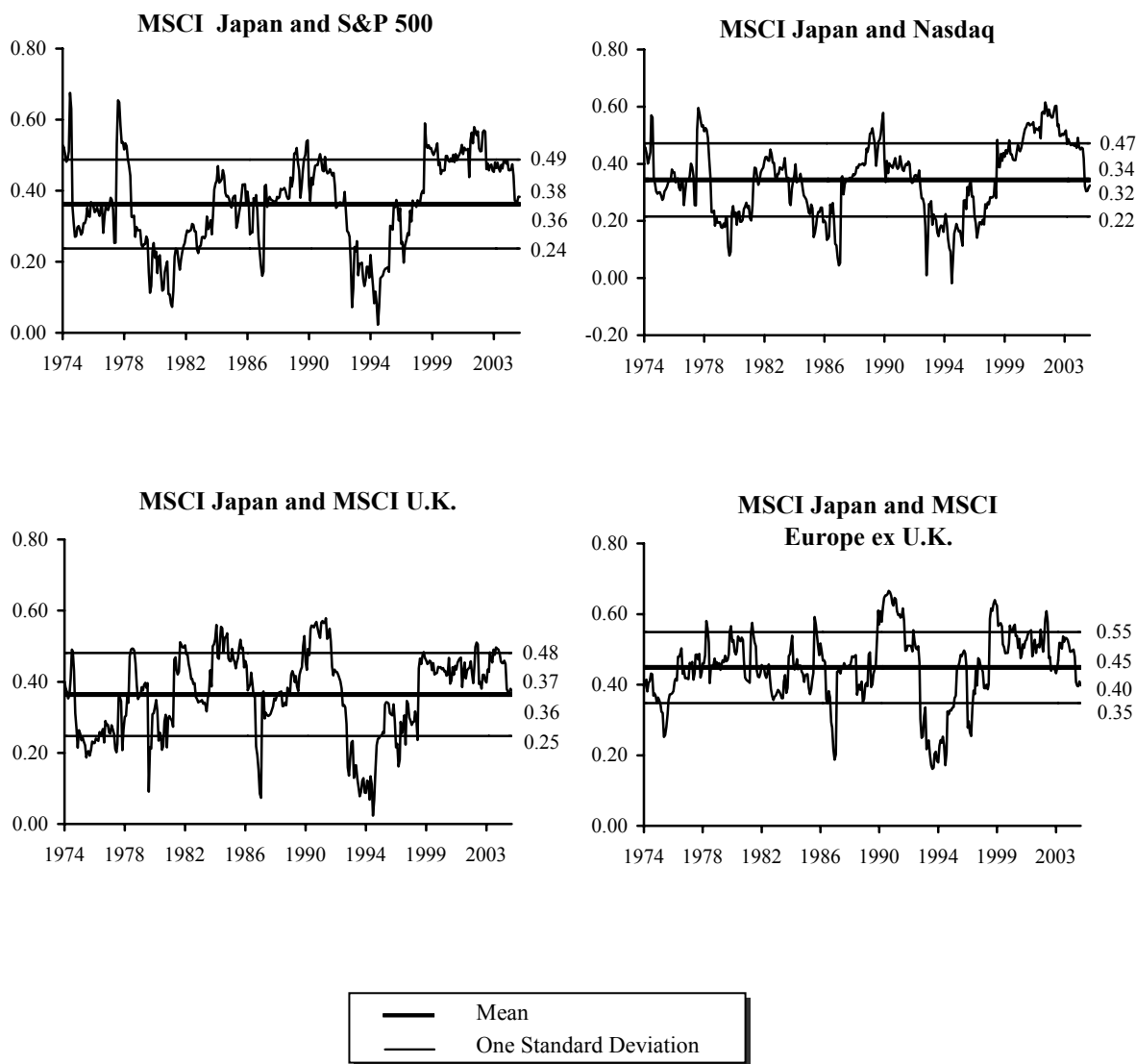
Note: Nasdaq data are price returns.

**Table H**

**36-MONTH ROLLING CORRELATIONS OF MSCI JAPAN  
WITH MAJOR DEVELOPED WESTERN EQUITY INDICES**

**March 1, 1971 - January 31, 2005**

**Local Currency**



Sources: Morgan Stanley Capital International, Standard & Poor's, Thomson Datastream, and *The Wall Street Journal*. MSCI data provided "as is" without any express or implied warranties.

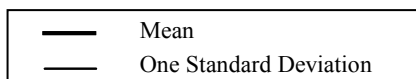
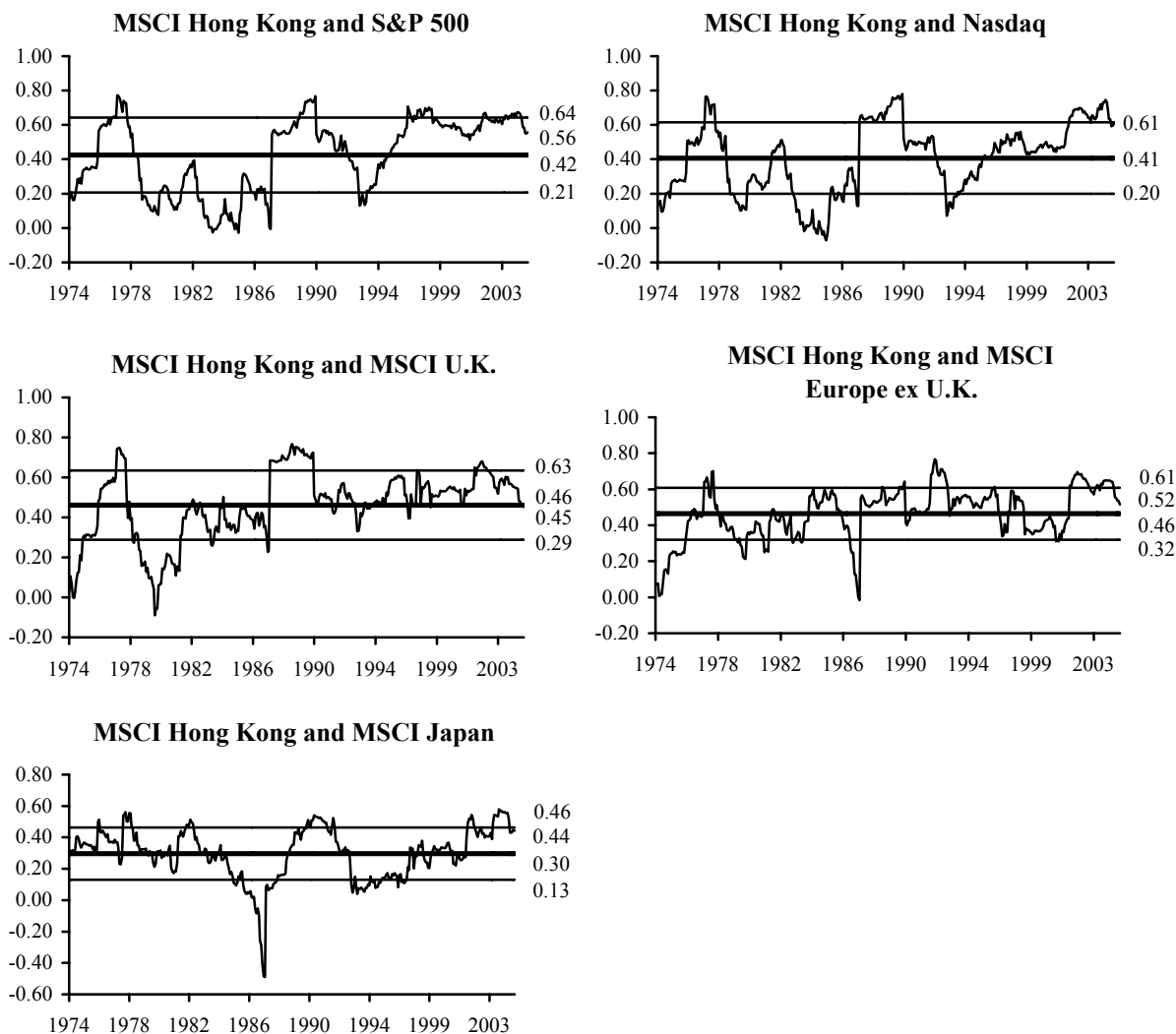
Note: Nasdaq data are price returns.

Table I

### 36-MONTH ROLLING CORRELATIONS OF MSCI HONG KONG WITH MAJOR DEVELOPED EQUITY INDICES

March 1, 1971 - January 31, 2005

Local Currency



Sources: Morgan Stanley Capital International, Standard & Poor's, Thomson Datastream, and *The Wall Street Journal*. MSCI data provided "as is" without any express or implied warranties.

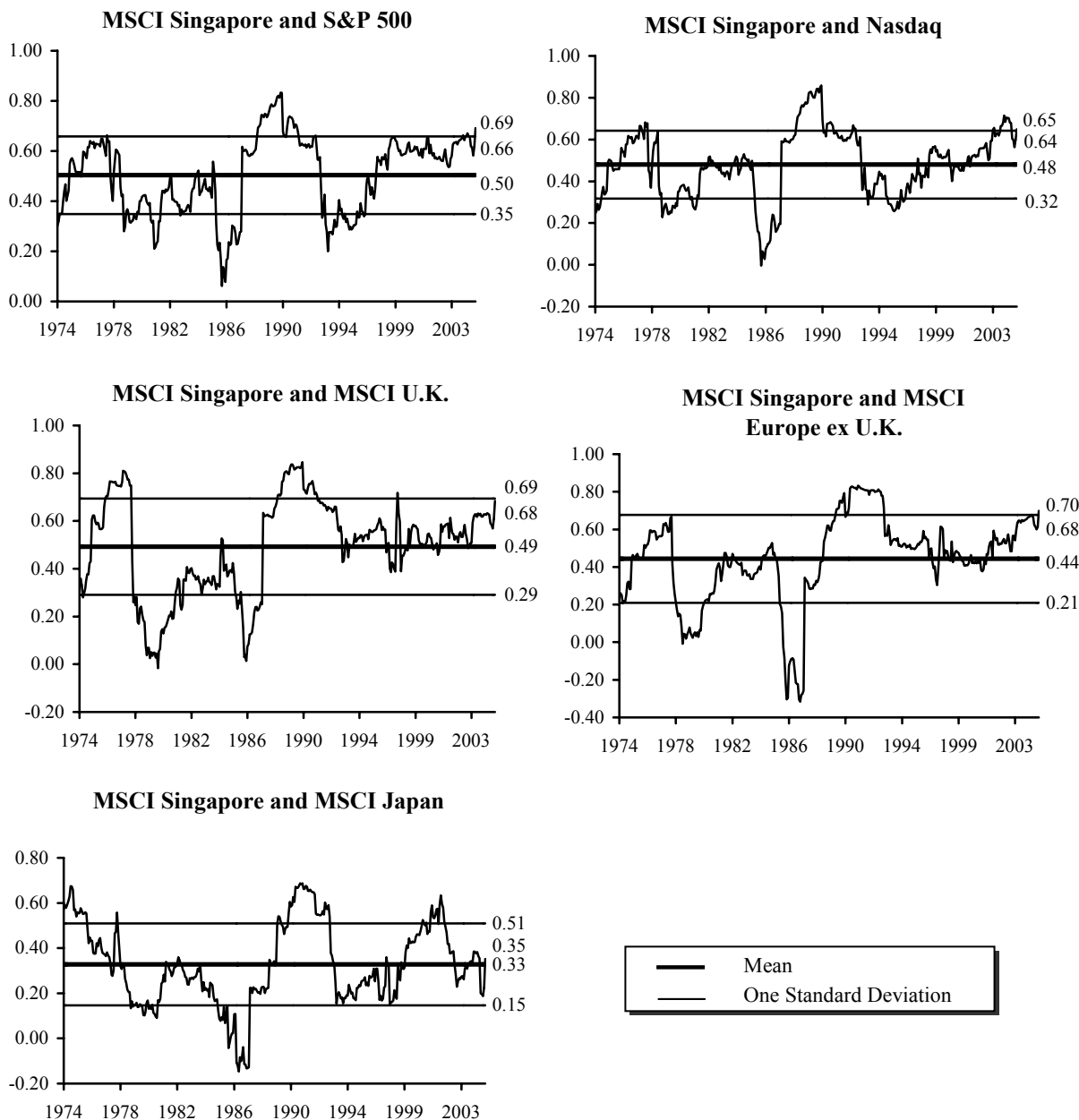
Note: Nasdaq data are price returns.

Table J

### 36-MONTH ROLLING CORRELATIONS OF MSCI SINGAPORE WITH MAJOR DEVELOPED EQUITY INDICES

March 1, 1971 - January 31, 2005

Local Currency



Sources: Morgan Stanley Capital International, Standard & Poor's, Thomson Datastream, and *The Wall Street Journal*. MSCI data provided "as is" without any express or implied warranties.

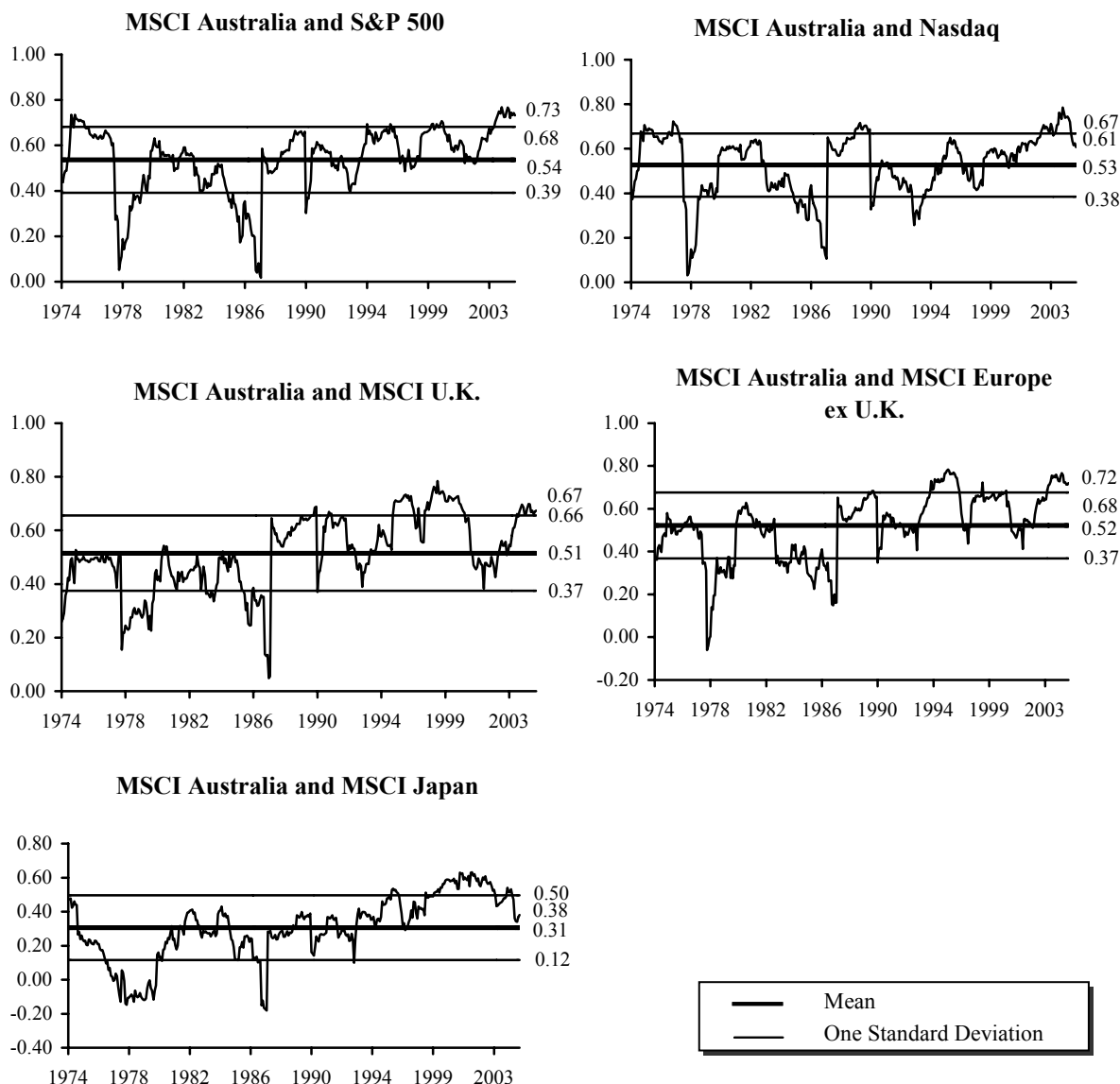
Note: Nasdaq data are price returns.

**Table K**

**36-MONTH ROLLING CORRELATIONS OF  
MSCI AUSTRALIA WITH MAJOR DEVELOPED INDICES**

**March 1, 1971 - January 31, 2005**

**Local Currency**



Sources: Morgan Stanley Capital International, Standard & Poor's, Thomson Datastream, and *The Wall Street Journal*. MSCI data provided "as is" without any express or implied warranties.

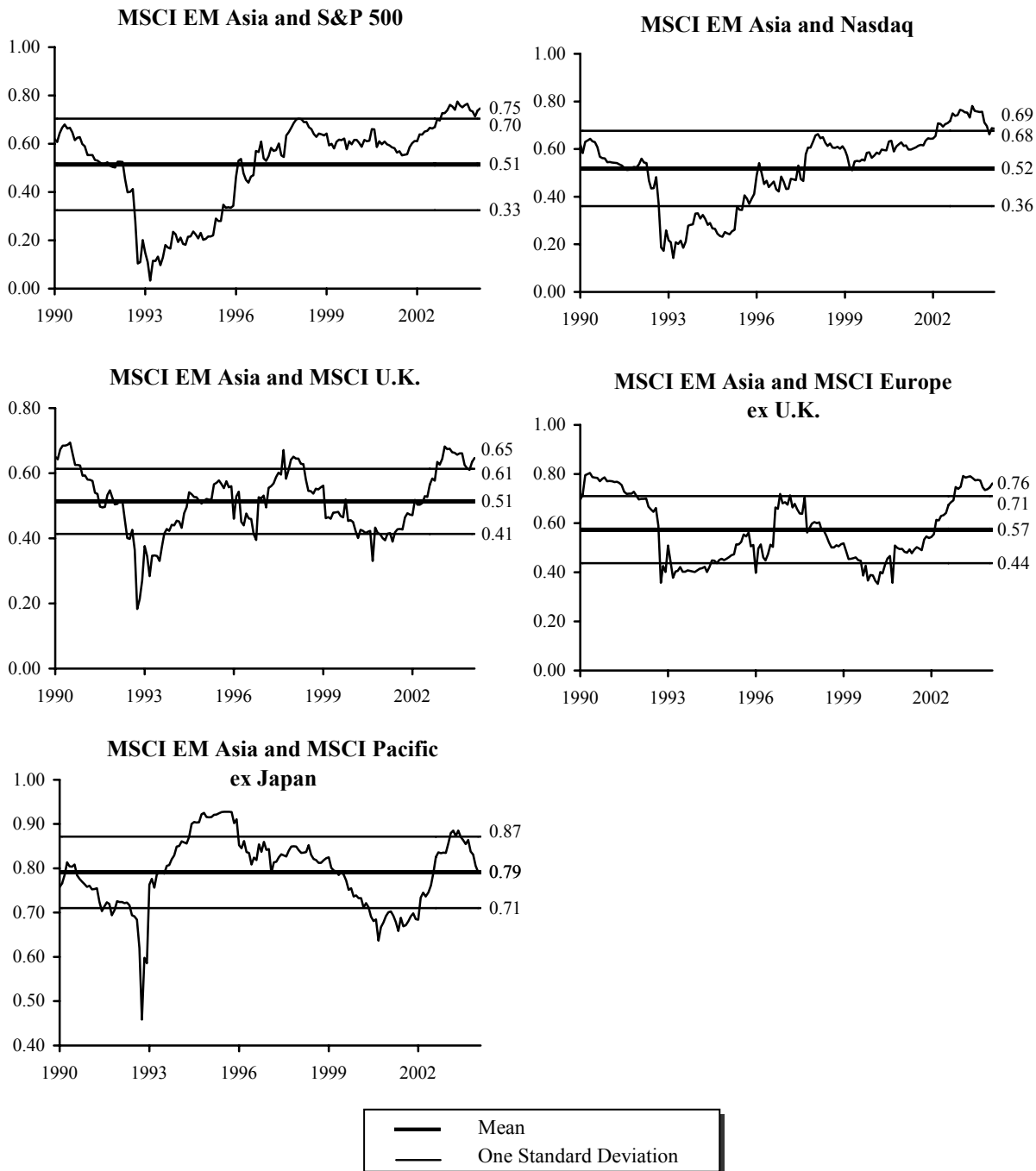
Note: Nasdaq data are price returns.

Table L

**36-MONTH ROLLING CORRELATIONS OF  
MSCI EMERGING MARKETS ASIA  
WITH MAJOR DEVELOPED EQUITY INDICES**

**January 1, 1988 - January 31, 2005**

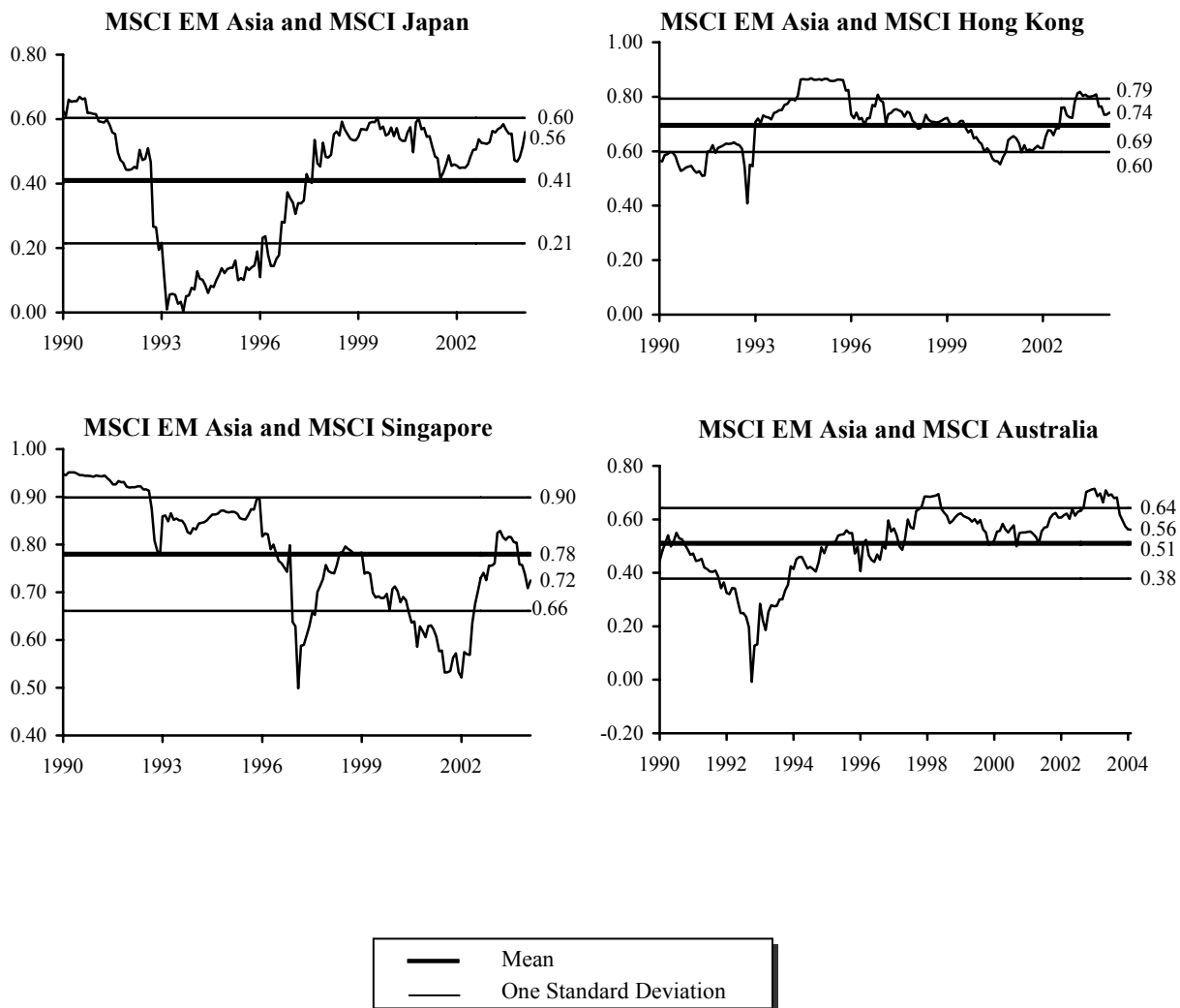
**Local Currency**



**Table L (continued)**  
**36-MONTH ROLLING CORRELATIONS OF**  
**MSCI EMERGING MARKETS ASIA**  
**WITH MAJOR DEVELOPED EQUITY INDICES**

**January 1, 1988 - January 31, 2005**

**Local Currency**



Sources: Morgan Stanley Capital International, Standard & Poor's, Thomson Datastream, and *The Wall Street Journal*. MSCI data provided "as is" without any express or implied warranties.

Note: Nasdaq data are price returns.

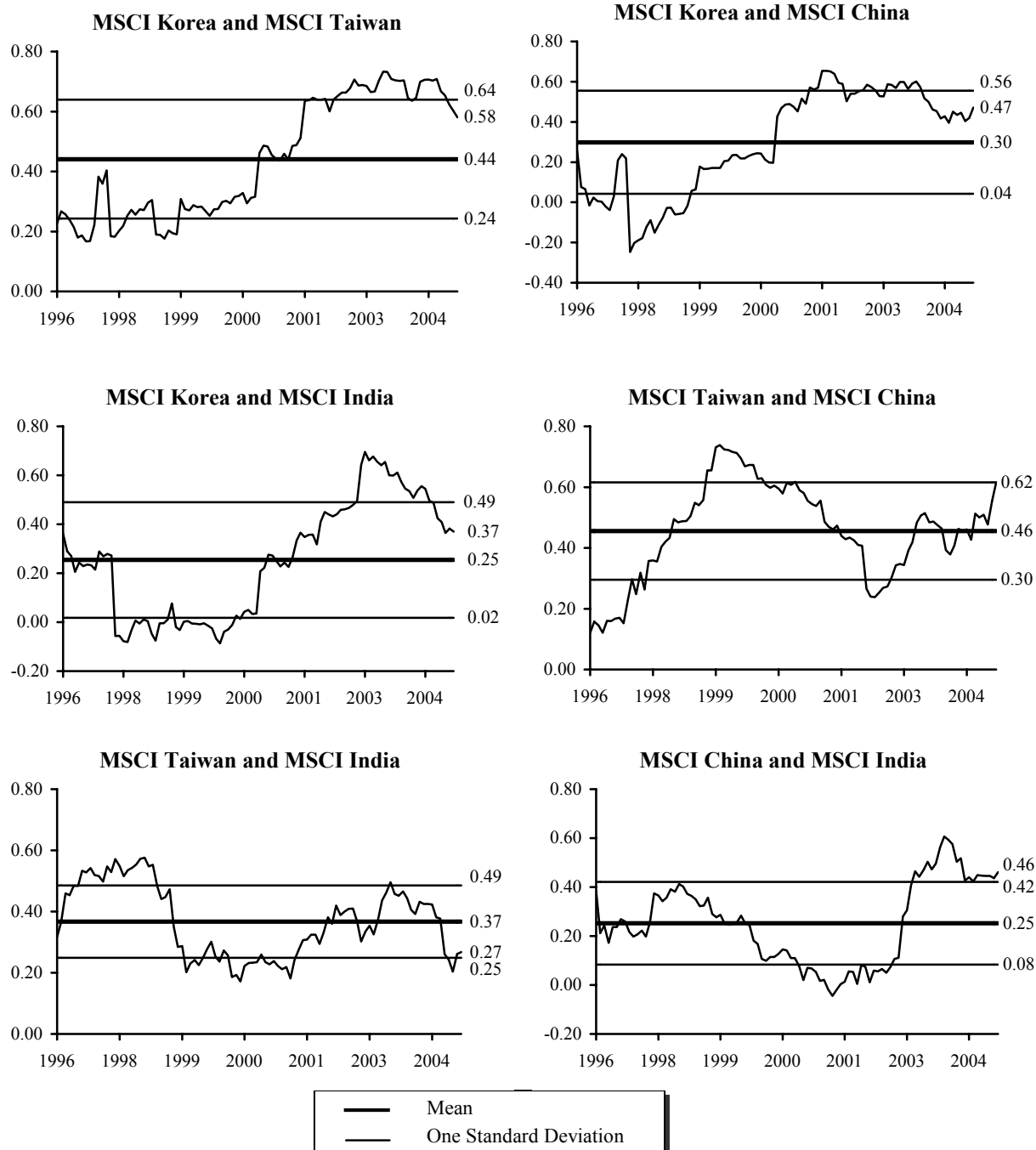


Table M

### 36-MONTH ROLLING CORRELATIONS AMONG SELECTED EMERGING ASIA COUNTRY INDICES

January 1, 1994 - January 31, 2005

#### Local Currency



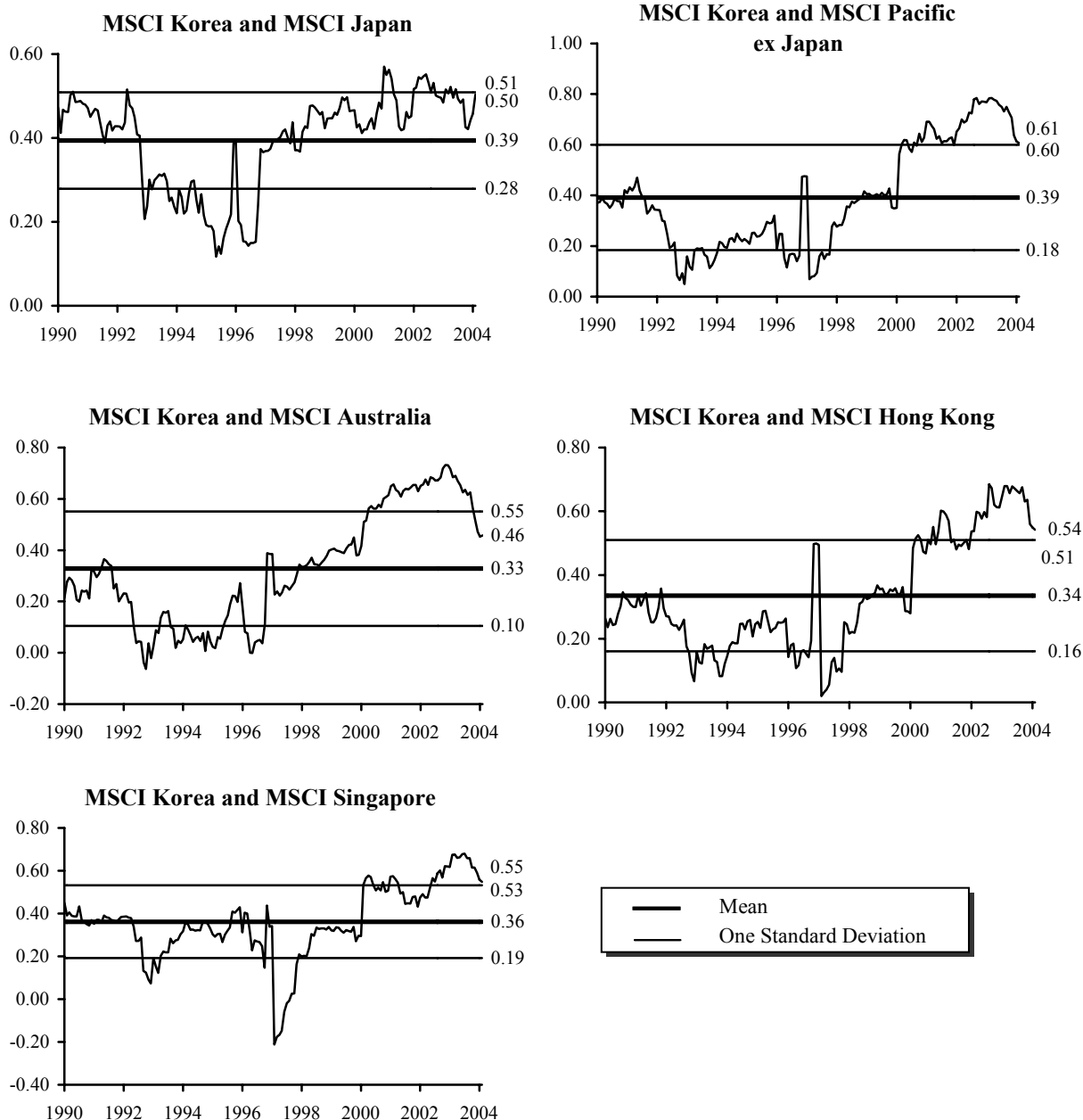
Sources: Morgan Stanley Capital International and Thomson Datastream. MSCI data provided "as is" without any express or implied warranties.

Table N

### 36-MONTH ROLLING CORRELATIONS OF MSCI KOREA WITH DEVELOPED ASIAN COUNTRIES

January 1, 1988 - January 31, 2005

Local Currency

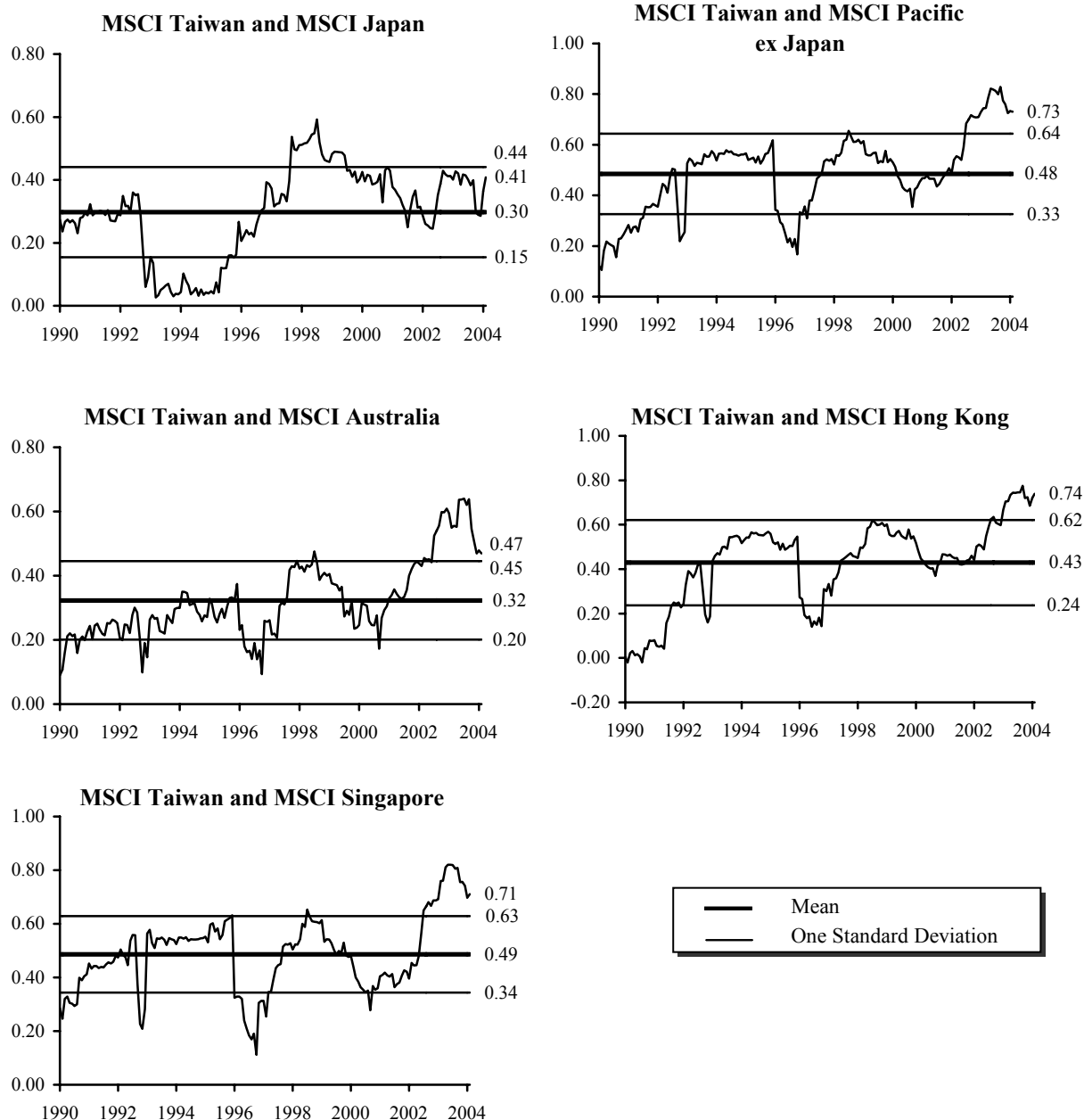


Sources: Morgan Stanley Capital International and Thomson Datastream. MSCI data provided "as is" without any express or implied warranties.

**Table O**  
**36-MONTH ROLLING CORRELATIONS OF**  
**MSCI TAIWAN WITH DEVELOPED ASIAN COUNTRIES**

**January 1, 1988 - January 31, 2005**

**Local Currency**



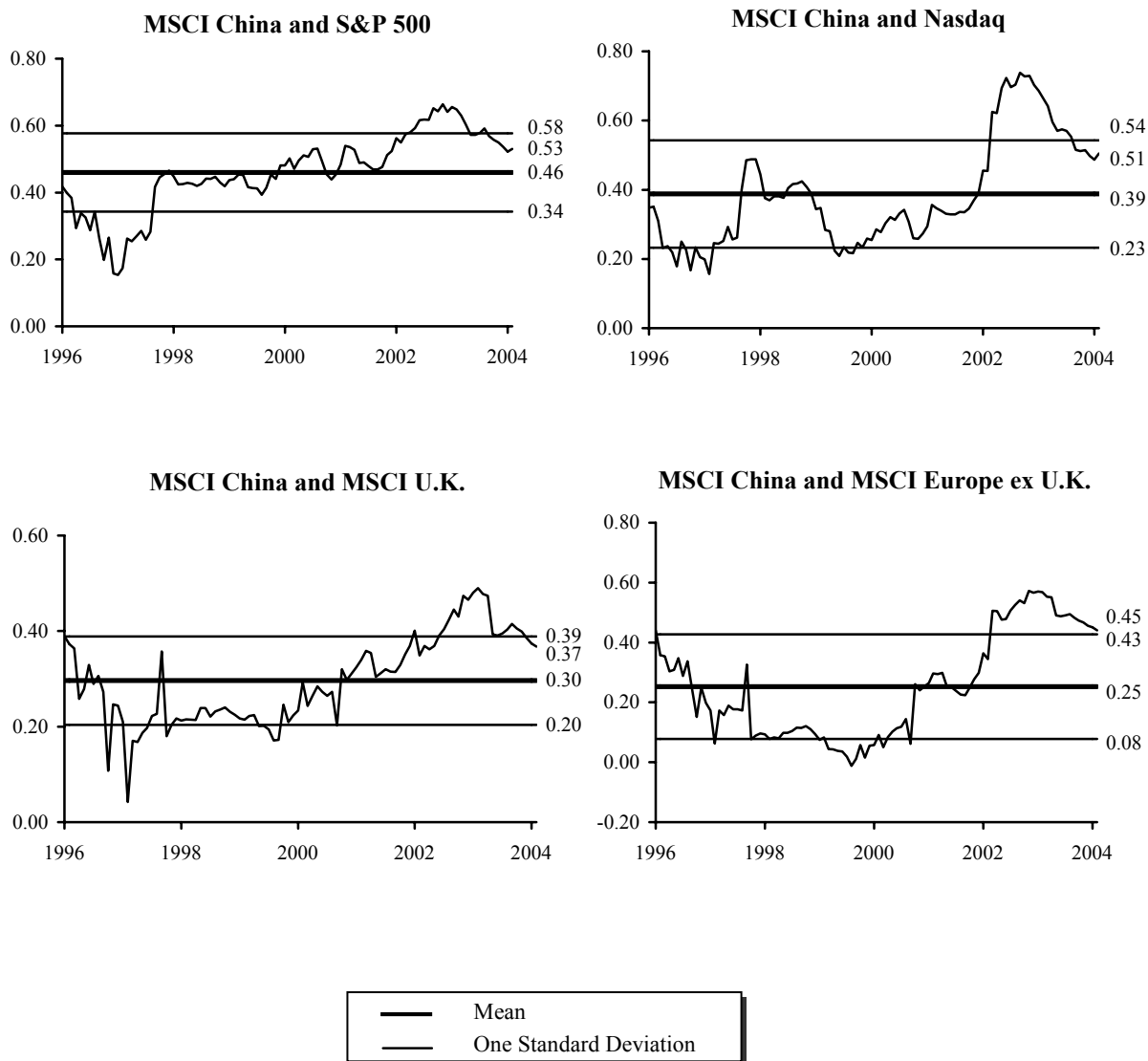
Sources: Morgan Stanley Capital International and Thomson Datastream. MSCI data provided "as is" without any express or implied warranties.

**Table P**

**36-MONTH ROLLING CORRELATIONS OF  
MSCI CHINA WITH MAJOR WESTERN EQUITY INDICES**

**January 1, 1994 - January 31, 2005**

**Local Currency**



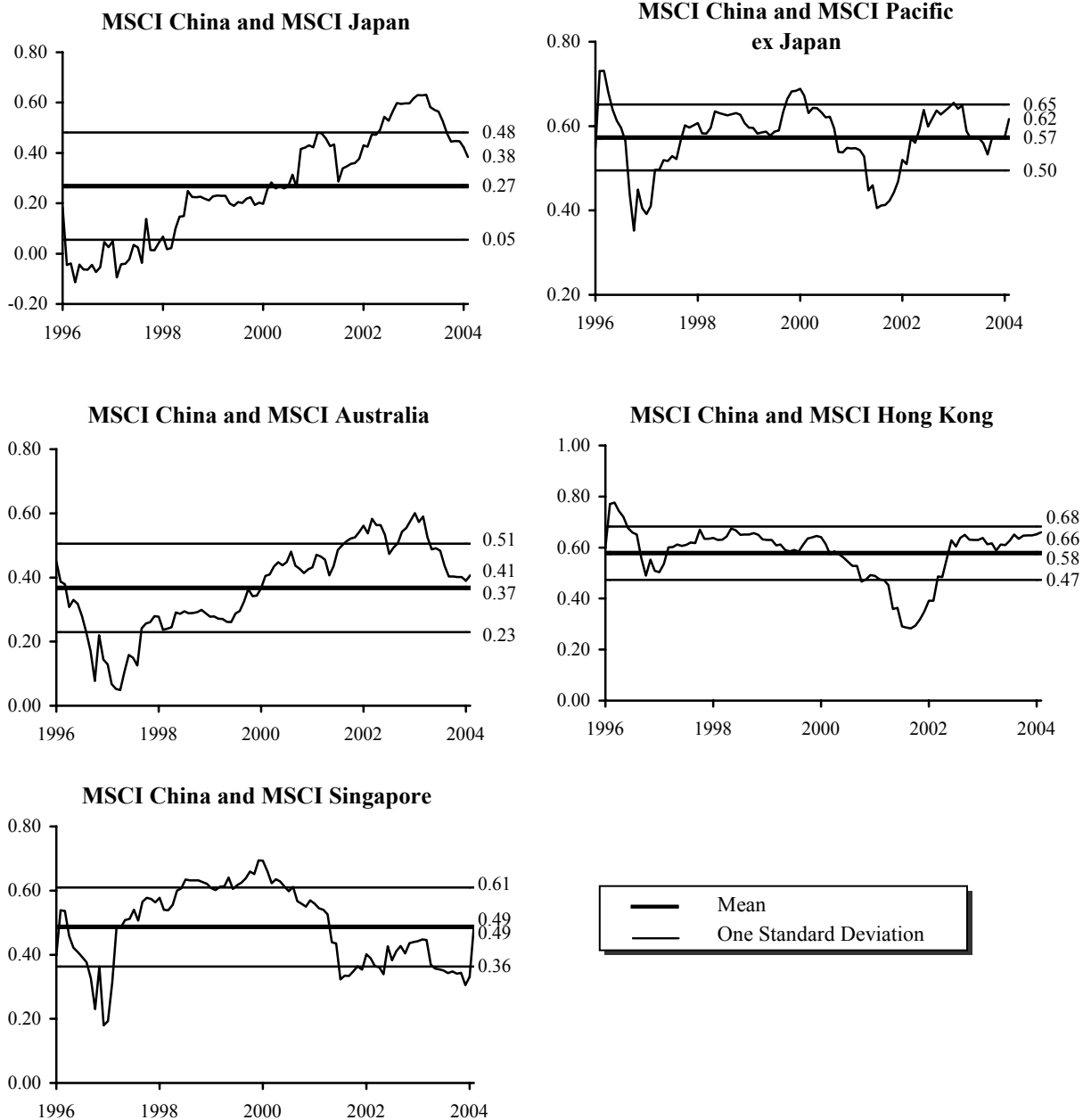
Sources: Morgan Stanley Capital International, Standard & Poor's, Thomson Datastream, and *The Wall Street Journal*. MSCI data provided "as is" without any express or implied warranties.

Note: Nasdaq data are price returns.

**Table P (continued)**  
**36-MONTH ROLLING CORRELATIONS OF**  
**MSCI CHINA WITH DEVELOPED ASIAN COUNTRIES**

**January 1, 1994 - January 31, 2005**

**Local Currency**

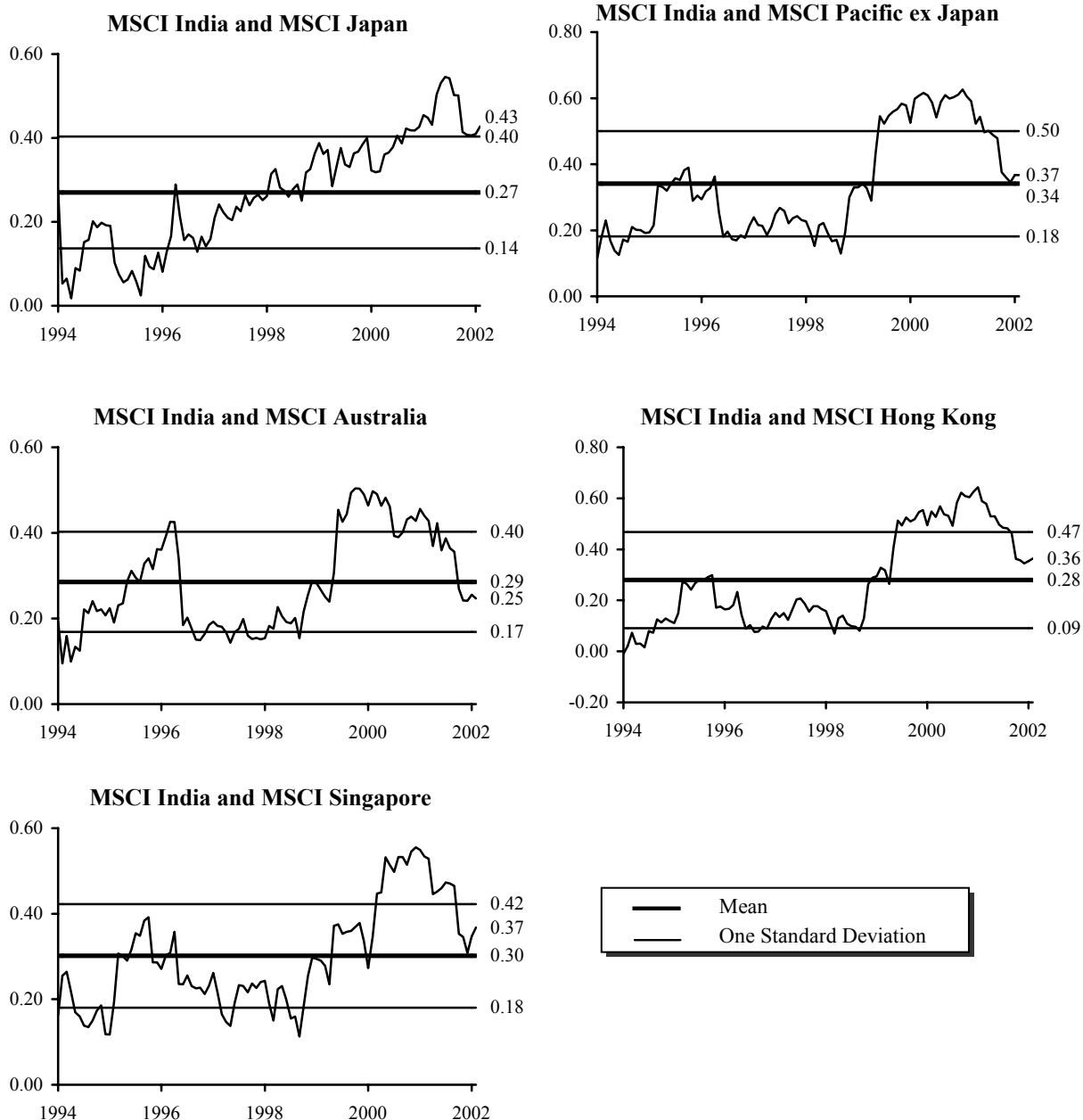


Sources: Morgan Stanley Capital International, Standard & Poor's, Thomson Datastream, and *The Wall Street Journal*. MSCI data provided "as is" without any express or implied warranties.

**Table Q**  
**36-MONTH ROLLING CORRELATIONS OF**  
**MSCI INDIA WITH DEVELOPED ASIAN COUNTRIES**

**January 1, 1994 - January 31, 2005**

**Local Currency**



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