



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

Investing in Global ex U.S. Small-Caps: Can a Case be Made?

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Investing in Global ex U.S. Small-Caps

Can a Case be Made?

The last decade has been disastrous for non-U.S. small-cap equities. Since 1993, the MSCI EAFE Small-Cap Index and Citigroup's¹ non-U.S. small-cap index have posted average annual compound returns (AACR) of -0.4% and 3.3%, respectively. In contrast, global ex U.S. large-cap equities, as represented by MSCI EAFE and Citigroup's non-U.S. large-cap index, have averaged annual returns of 4.0% and 5.1% (see Table A). In terms of their cumulative performance, EAFE Small-Cap has underperformed EAFE by about 30% since 1993, while Citigroup's non-U.S. small-cap index has underperformed its non-U.S. large-cap index by 20% since 1990 (see Table B).

Other than a brief six months in 1992-93, Citigroup's non-U.S. small-cap index has relentlessly sunk lower and lower relative to MSCI EAFE—at least until 2000. Although EAFE Small-Cap is still underperforming, over the last three years Citigroup's non-U.S. small-cap index has posted a cumulative return of -22.1%, compared with EAFE's -39.4% and Citigroup's non-U.S. large-cap index, -38.3%. While this may mark the beginning of a secular turnaround for global ex U.S. small-caps, the sector comes with a cautionary flag: *caveat emptor*. If recent history is any guide, diversification benefits will probably be miniscule, and performance can vary significantly between the two primary indices.

What's a Small-Cap? Some Background and Observations

MSCI introduced its EAFE Small-Cap Index in January 1997, and re-created its underlying data back to 1992. The index utilizes a bottom-up approach by drawing from securities whose market cap falls in the range of \$200 million to \$1.5 billion across 21 developed countries (see Table C). The index attempts to capture 40% of the small-cap universe within each country and assigns each company to one sector that is defined by the Global Industry Classification Standard. Companies in the EAFE Small-Cap Index may also be included in the EAFE Index.

Citigroup's developed markets indices were introduced in June 1989 and they cover 26 countries. The global indices follow a top-down approach whereby its Broad Market Index (BMI) is divided into two, mutually exclusive indices. The Primary Market Index (PMI) represents the large-cap universe and comprises the top 80% of the available capital of the BMI in each country, while the Extended Market Index (EMI) comprises the bottom 20% of the available market capitalization in each country.² In this sense EMI is a relative index in that its constituents are chosen by the size of their market-cap compared to that other stocks in the country's market, while EAFE Small-Cap can be considered an absolute index because it *a priori* defines the small-cap market capitalization range.

The differences in these methodologies can produce some head-scratching results. First, EMI Europe Pacific Asia Composite's (EPAC) current total available market cap is \$1.38 trillion, median market cap \$240 million, and market cap range from \$25 million to \$8.8 billion. In contrast, the total market cap of MSCI EAFE Small-Cap Index is only \$410.1

¹ Formerly Salomon Smith Barney.

² "Available market cap" adjusts total market cap for four types of unavailable capital: corporate cross-holdings, private control blocks, government holdings, and legally restricted shares.

billion. This substantial discrepancy is a direct result of Citigroup's 80%/20% methodology. To illustrate, historically Nokia alone comprised about 80% of Finland's total market cap; PMI EPAC therefore included Nokia, which resulted in all the remaining Finnish securities being relegated to EMI EPAC regardless of their market cap. This raises a question: Because EMI EPAC contains both illiquid and large-cap securities, is it investable and should it be regarded as a legitimate small-cap index?

Additionally, the country weights in the two indices can be strikingly different. For EAFE Small-Cap and EMI EPAC, respectively, the most notable examples include the United Kingdom, 16.4% and 25.9%; Japan, 30.3% and 21.6%; Switzerland, 3.8% and 6.3%; and Australia, 8.4% and 5.4%.

The different constructs also give each index distinct sector weightings. While the market weights of most sectors vary only a percentage point or two, there are a few notable differences. For example, industrials account for 20.2% of EAFE Small-Cap, while industrial goods and services comprise 13.0% of EMI EPAC, and EMI EPAC includes two additional sectors, transportation and conglomerates.

Which benchmark is better? MSCI EAFE Small-Cap represents a purer small-cap index, with the capitalization of an individual security never exceeding \$1.5 billion. However, because it converts market caps into US\$ by using a 12-month average foreign exchange rate, the index may be biased towards smaller countries and countries with weak currencies. EMI EPAC is a much broader index, consisting of a larger number of securities, though not all of them are investable or small-cap. Currency fluctuations do not affect the composition of EMI EPAC or the relative performance among countries because stocks are selected by comparing companies within their respective countries.

The Value Bias of Non-U.S. Small-Caps

The money management firm Grantham, Mayo, Van Otterloo & Co (GMO) conducted an exercise, which deepens our understanding of the behavior of non-U.S. small-caps, as well as underscores the pitfalls of relying on analyses with only 13 years of history. It used its own extensive stock database to create a synthetic global non-U.S. small-cap index with history dating back to 1970.³ According to GMO, global ex U.S. small-cap equities contain a "systemic value bias" because the universe consists of stocks with low valuations, which tend to have low prices and low P/E and P/B ratios. During the 1970s and 1980s, non-U.S. non-emerging markets small-cap stocks *outperformed* non-U.S. large caps, and it was not until the 1990s—the date our analysis begins—that they began to *underperform*. During the 1970s and 1980s they outperformed not because the sector was comprised of high growth companies as many investors assume, but rather because they were cheap, GMO argues. By 1990, after thrashing mid- and large-caps by almost 50% over the preceding four years, non-U.S. small-caps grew too expensive. The sector lost its attractive valuations, and its value bias. A period of underperformance ensued, from which only in recent years it may be rising. In other words, when they outperform, non-U.S. small-cap equities are really value stocks in disguise, and they underperform when valuations become too rich and the risk premium too thin. It is price, not smallness, that drives the performance of non-U.S. small-cap stocks, GMO contends.

³ "The Illusion of International Small-Cap Investing," by Drew Spangler, Grantham, May, Van Otterloo & Co, March 2001.

Attractive Valuations, but Minimal Diversification Benefits

Have non-U.S. small-caps turned full circle, with valuations returning to levels last seen in the 1970s and 1980s, and therefore poised to outperform, as GMO suggests? While our data do not provide sufficient history to review 30 years of historical performance, various valuation metrics suggest EMI EPAC is now quite inexpensive (MSCI has not calculated valuations for EAFE Small-Cap). EMI EPAC is significantly cheap based on its price-to-sales, price-to-cash earnings, price-to-book, and dividend yield measures, although it is roughly fairly valued according to its price-to-earnings multiple ratio and expensive based on its return on equity ratio (see Table E). (It is also interesting to note that non-U.S. small-caps are only slightly cheaper than non-U.S. large-caps, which underscores value in developed non-U.S. equities. See Table F.)

Although the valuations of non-U.S. small-caps may currently be attractive, investors should not look to this sector for diversification benefits (see Table G). Over the fairly short histories of these indices, the sector is highly correlated with non-U.S. large-caps, as well as with U.S. small-caps. Rolling 36-month correlations between EAFE Small-Cap and EAFE are currently 0.86, EMI EPAC and PMI EPAC, 0.94, EMI EPAC and EAFE, 0.95, while those with EMI EPAC and Russell 2000® are 0.85.

Table A**ANNUAL RETURNS FOR MSCI EAFE, MSCI EAFE SMALL-CAP, CITIGROUP EMI EPAC AND CITIGROUP PMI EPAC****1990 - 2003**

<u>Year</u>	<u>Annual Total Returns (%)</u>				<u>Average Annual Compound Returns (%)</u> <u>Through 12/31/2002</u>			
	<u>Citigroup EMI EPAC</u>	<u>MSCI EAFE Small-Cap*</u>	<u>Citigroup PMI EPAC</u>	<u>MSCI EAFE</u>	<u>Citigroup EMI EPAC</u>	<u>MSCI EAFE Small-Cap*</u>	<u>Citigroup PMI EPAC</u>	<u>MSCI EAFE</u>
1990	-22.6	---	-22.1	-23.4	-0.3	---	1.9	0.9
1991	6.4	---	13.0	12.1	1.8	---	4.2	3.2
1992	-15.3	---	-11.9	-12.2	1.4	---	3.4	2.4
1993	30.7	37.2	30.9	32.6	3.3	-0.4	5.1	4.0
1994	9.4	8.3	8.4	7.8	0.6	-3.9	2.6	1.2
1995	4.8	-2.0	13.2	11.2	-0.5	-5.4	1.8	0.4
1996	6.5	-0.1	8.1	6.0	-1.2	-5.8	0.3	-1.0
1997	-10.3	-24.6	5.3	1.8	-2.4	-6.7	-0.9	-2.1
1998	14.1	5.4	19.9	20.0	-0.8	-2.7	-2.1	-2.9
1999	22.9	17.7	29.8	27.0	-4.2	-4.6	-7.0	-7.9
2000	-11.1	-9.2	-13.2	-14.2	-11.8	-11.1	-16.7	-17.2
2001	-16.4	-14.3	-21.2	-21.4	-12.1	-12.0	-18.4	-18.7
2002	-7.7	-9.6	-15.5	-15.9	-7.7	-9.6	-15.5	-15.9
YTD 2003	13.4	13.7	6.9	6.9				

Sources: Citigroup Global Markets and Thomson Datastream. MSCI data are copyrighted by and proprietary to Morgan Stanley Capital International, Inc.

Note: Data for 2003 are through May 31.

* Returns for MSCI EAFE Small-Cap are price returns.

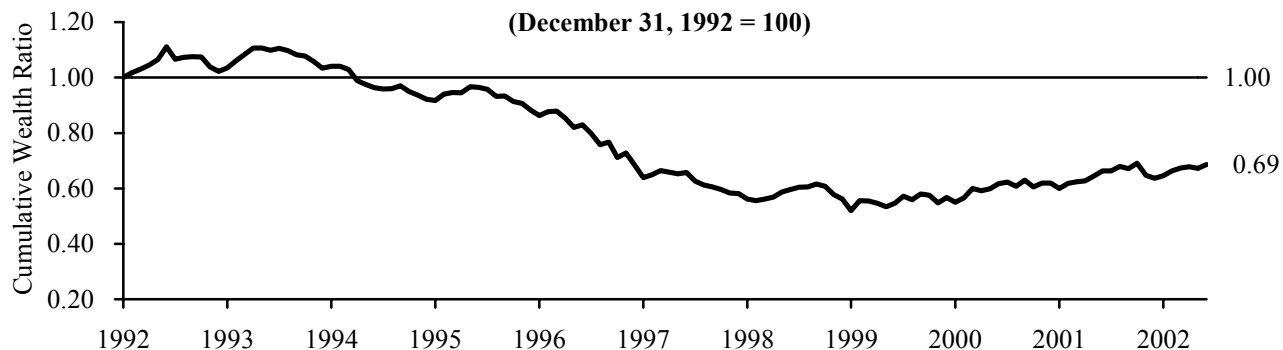
Table B

RELATIVE PERFORMANCE OF GLOBAL EX U.S. SMALL- AND LARGE-CAP INDICES

Relative Cumulative Wealth Index
(MSCI EAFE Small-Cap/MSCI EAFE)

January 1, 1993 - May 31, 2003

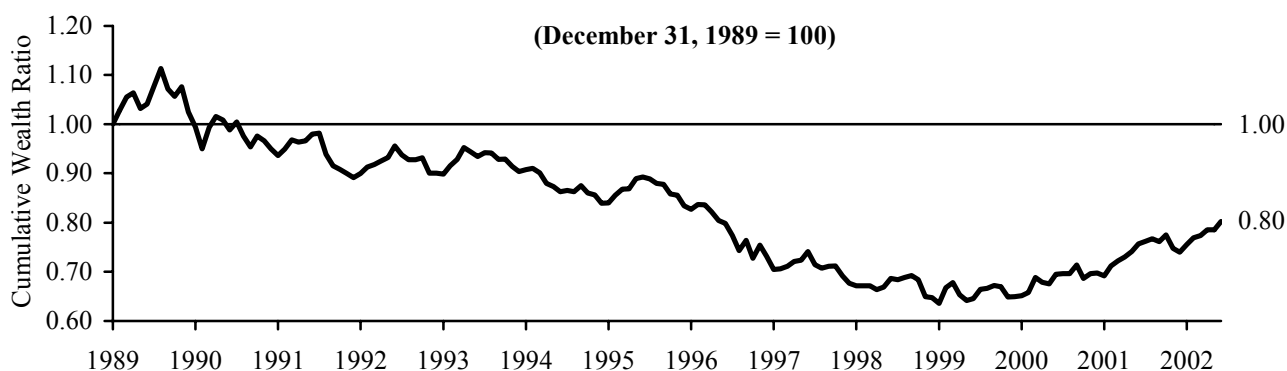
(December 31, 1992 = 100)



Relative Cumulative Wealth Index
(Citigroup EMI EPAC/Citigroup PMI EPAC)

January 1, 1990 - May 31, 2003

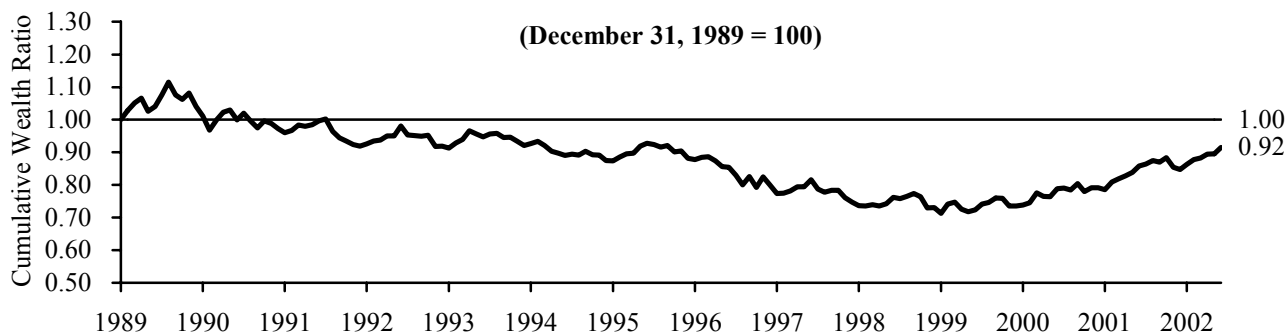
(December 31, 1989 = 100)



Relative Cumulative Wealth Index
(Citigroup EMI EPAC/MSCI EAFE)

January 1, 1990 - May 31, 2003

(December 31, 1989 = 100)



Sources: Citigroup Global Markets and Thomson Datastream. MSCI data are copyrighted by and proprietary to Morgan Stanley Capital International, Inc.

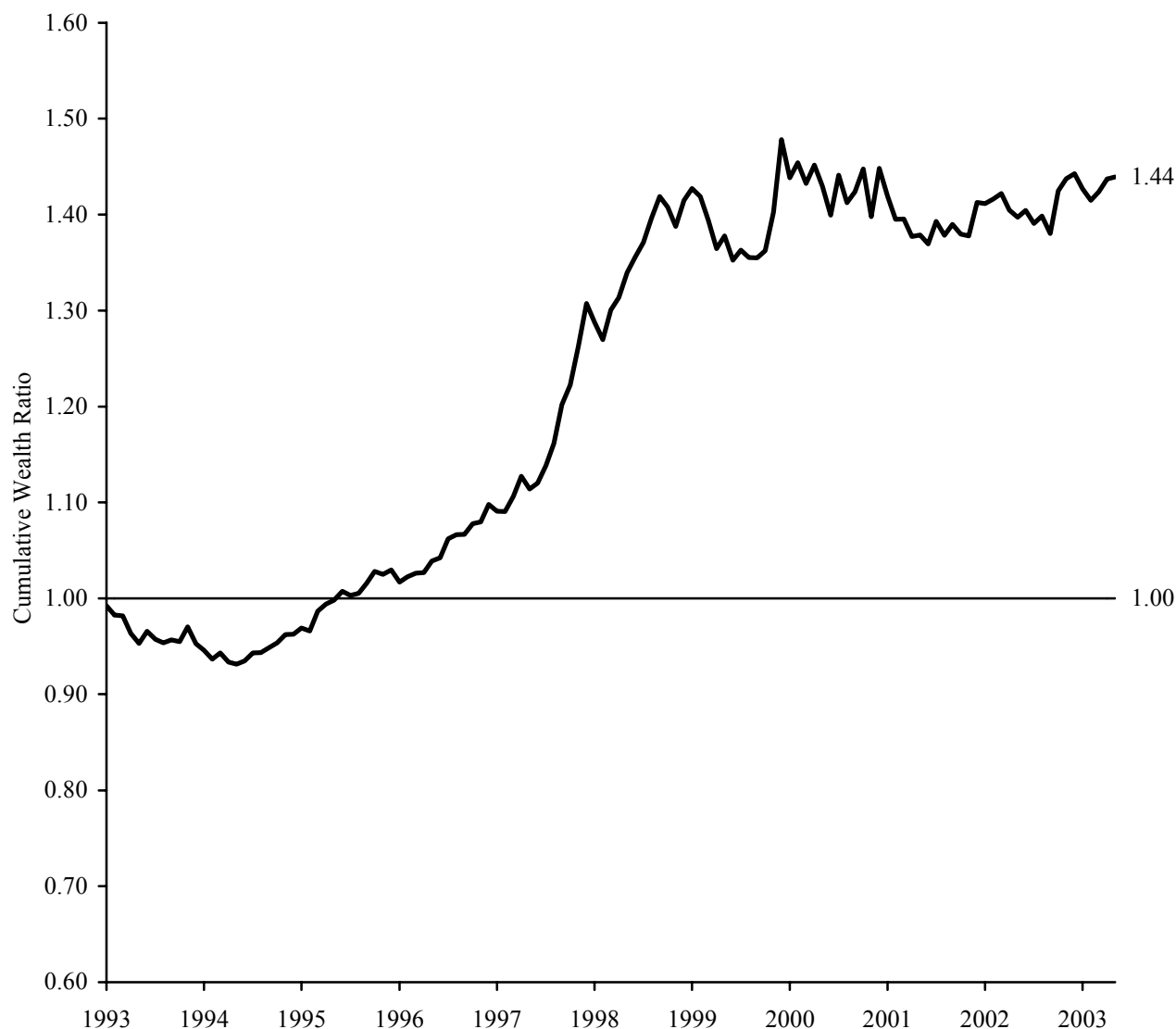
Note: MSCI EAFE Small-Cap cumulative wealth is calculated using price returns.

Table C
ANALYSIS OF NON U.S. SMALL-CAP INDICES
As of May 31, 2003

Index	Country Component	Country Weight	Sector	Sector Weight	Features	Index Methodology
MSCI EAFE Small-Cap Index	Australia	8.4	Energy	2.3	The total market cap is \$410.1 billion (as of May 31, 2003). The market capitalization range is \$200 million to \$1.5 billion.	The Small-Cap index aims to capture 40% of the small-cap universe within each country by representing 40% of each industry. Companies must meet a relative liquidity criterion, whereby only securities with a free float of at least 15% are eligible. Any securities in the small-cap universe that have considerable cross-ownership with securities in any of the other MSCI indices are excluded. The cross-ownership limit is 40%. Non-domiciled shares of a company, investment trusts, mutual funds, and equity derivatives are not eligible for the index. The index uses the bottom-up approach to classify the companies. Securities are adjusted for free float.
	Austria	0.8	Materials	9.8		
	Belgium	1.6	Industrials	20.2		
	Denmark	1.9	Con. Discr.	21.9		
	Finland	3.0	Con. Staples	7.8		
	France	5.1	Health Care	7.2		
	Germany	4.0	Financials	19.8		
	Greece	1.5	IT	8.3		
	Hong Kong	2.4	Telecomm.	1.1		
	Ireland	2.4	Svcs.	1.6		
	Italy	4.6	Utilities			
	Japan	30.3				
	Netherlands	2.5				
	New Zealand	1.3				
	Norway	1.2				
	Portugal	0.7				
	Singapore	1.5				
	Spain	3.3				
	Sweden	3.2				
	Switzerland	3.8				
	U.K.	16.4				
Citigroup EMI EPAC Index	Australia	5.4	Basic Materials	10.8	The total available market cap is \$1.38 trillion. The median available market cap is \$240 million, the maximum is \$8.8 billion, and the minimum is \$25 million (as of May 31, 2003).	The entire Citigroup Global Equity Index is referred to as the Broad Market Index (BMI). This index is divided into two, mutually exclusive indices, which represent the performance of large- and small-cap companies. The Primary Market Index (PMI) represents the large-cap universe, comprising the top 80% of the available capital of the BMI in each country. The Extended Market Index (EMI) represents the small-cap universe, and comprises the remaining 20% of the available capital in each country. EMI EPAC utilizes a bottom-up approach when assigning industries to companies.
	Austria	0.3	Con. Cyclicals	21.8		
	Belgium	1.1	Ind. Goods & Services	13.0		
	Czech Rep.	0.0				
	Denmark	0.8	Technology	5.6		
	Finland	1.6	Transportation	4.4		
	France	8.8	Con. Non-Cyclicals	10.0		
	Germany	6.4				
	Greece	0.4	Energy	1.5		
	Hong Kong	2.1	Health Care	5.8		
	Iceland	0.0	Telecomm.	0.7		
	Ireland	1.0	Utilities	3.4		
	Italy	3.9	Financials	20.6		
	Japan	21.6	Conglomerates	2.3		
	Netherlands	4.9				
	New Zealand	0.2				
	Norway	0.4				
	Portugal	0.4				
	Singapore	1.0				
	South Korea	2.0				
	Spain	3.9				
	Sweden	1.8				
	Switzerland	6.3				
	U.K.	25.9				

Sources: Citigroup Global Markets and Thomson Datastream. MSCI data are copyrighted by and proprietary to Morgan Stanley Capital International, Inc.

Table D

**CUMULATIVE WEALTH RATIO OF THE CITIGROUP EMI EPAC AND MSCI EAFE
SMALL-CAP INDICES****January 1, 1993 - May 31, 2003****Relative Cumulative Wealth Index
(Citigroup EMI EPAC / MSCI EAFE Small-Cap)****(December 31, 1992 = 100)**

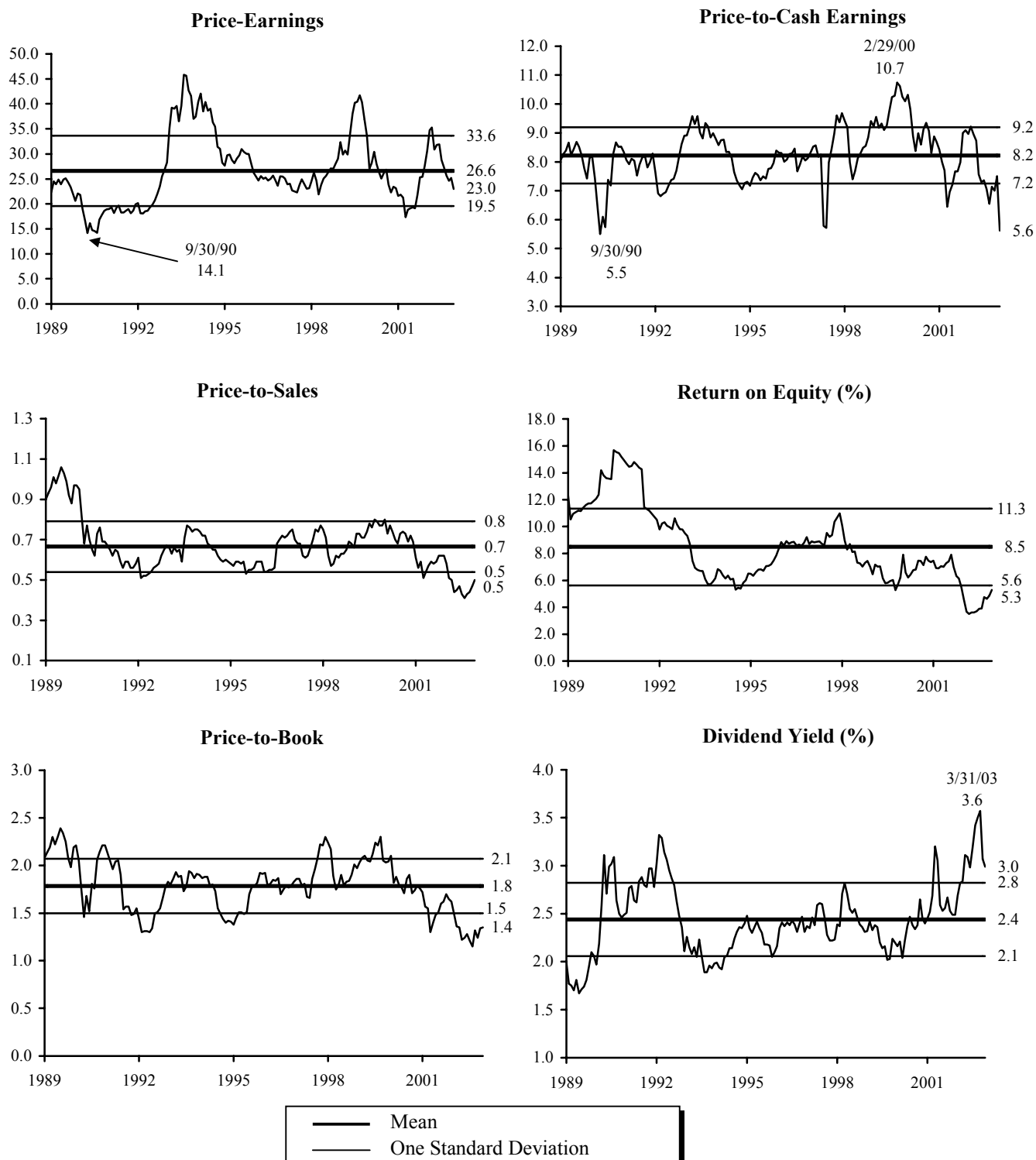
Sources: Citigroup Global Markets and Thomson Datastream. MSCI data are copyrighted by and proprietary to Morgan Stanley Capital International, Inc.

Note: MSCI EAFE Small-Cap cumulative wealth is calculated using price returns.

Table E

CITIGROUP EMI EPAC VALUATIONS

June 30, 1989 - May 31, 2003



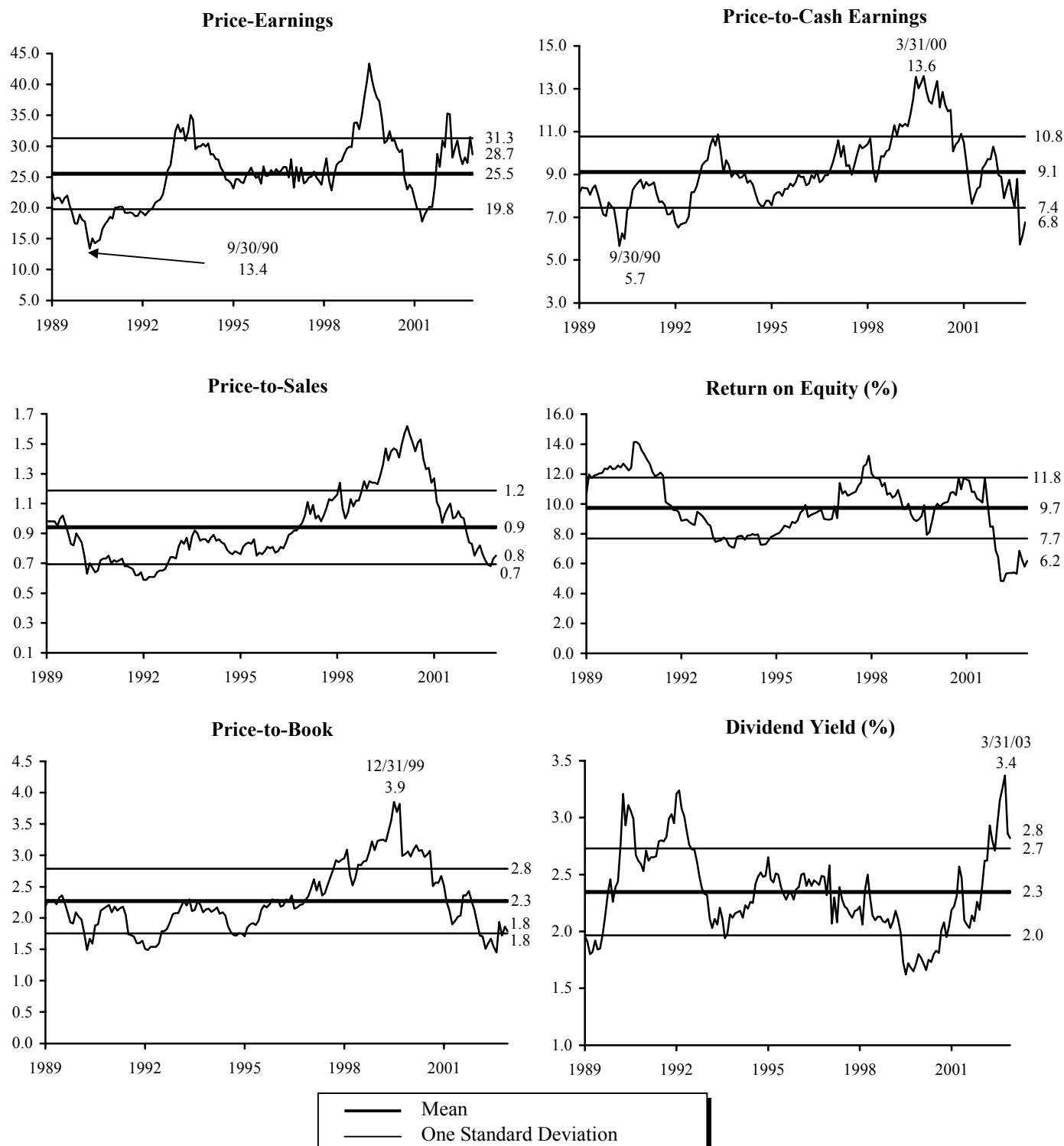
Source: Citigroup Global Markets.

Note: Price-to-earnings ratios are based on last reported annual earnings per share.

Table F

CITIGROUP PMI EPAC VALUATIONS

June 30, 1989 - May 31, 2003



Source: Citigroup Global Markets.

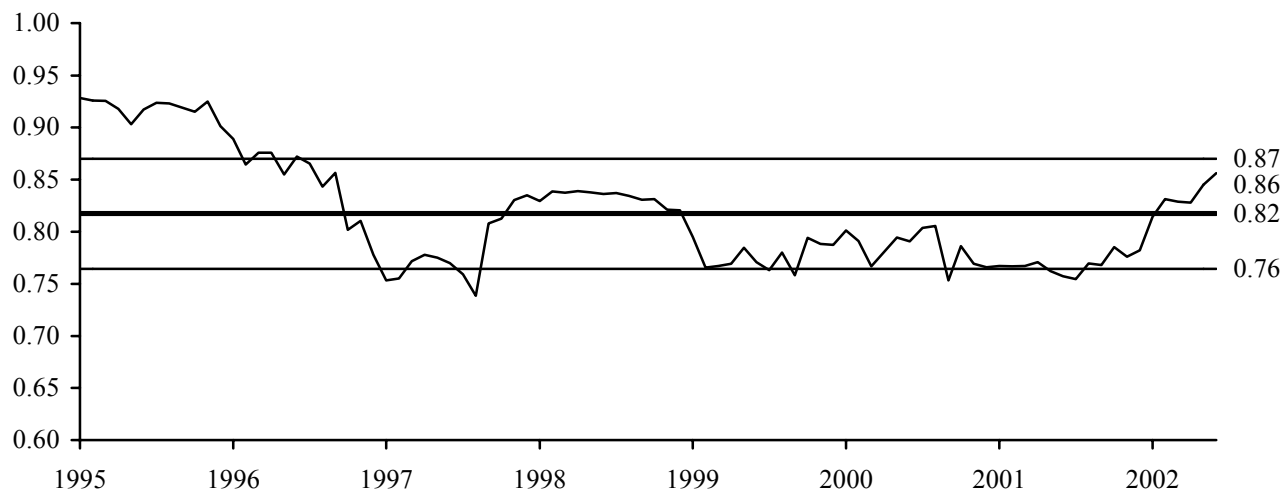
Note: Price-to-earnings ratios are based on last reported annual earnings per share.

Table G

ROLLING 36-MONTH CORRELATIONS OF SMALL- AND LARGE-CAP INDICES IN U.S. DOLLARS

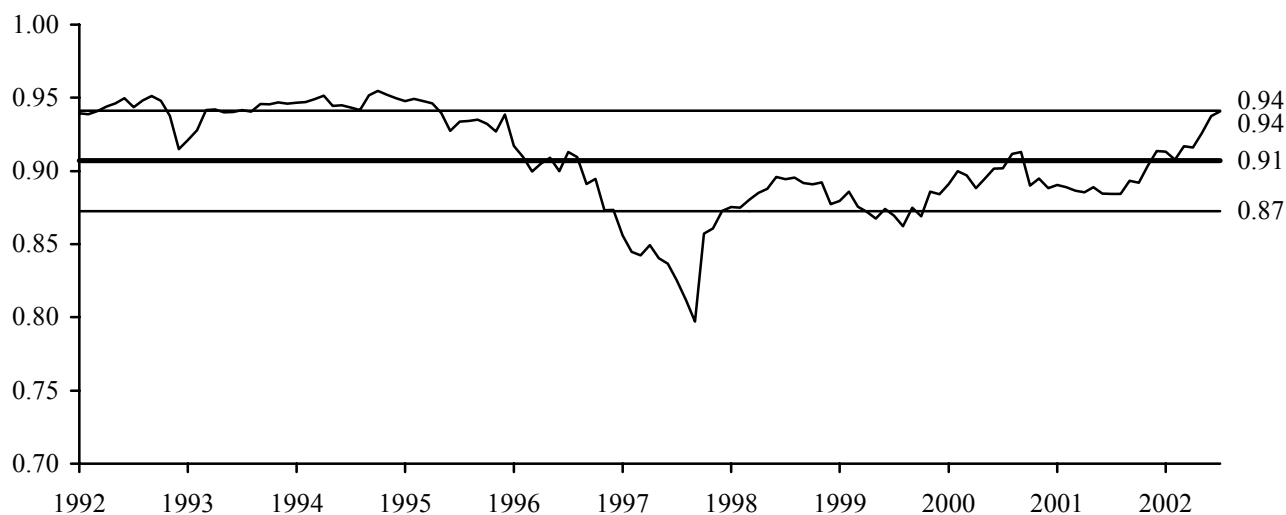
MSCI EAFE Small-Cap and MSCI EAFE

January 1, 1993 - May 31, 2003



Citigroup EMI EPAC and Citigroup PMI EPAC

December 1, 1989 - May 31, 2003



Sources: Citigroup Global Markets and Thomson Datastream. MSCI data are copyrighted by and proprietary to Morgan Stanley Capital International, Inc.

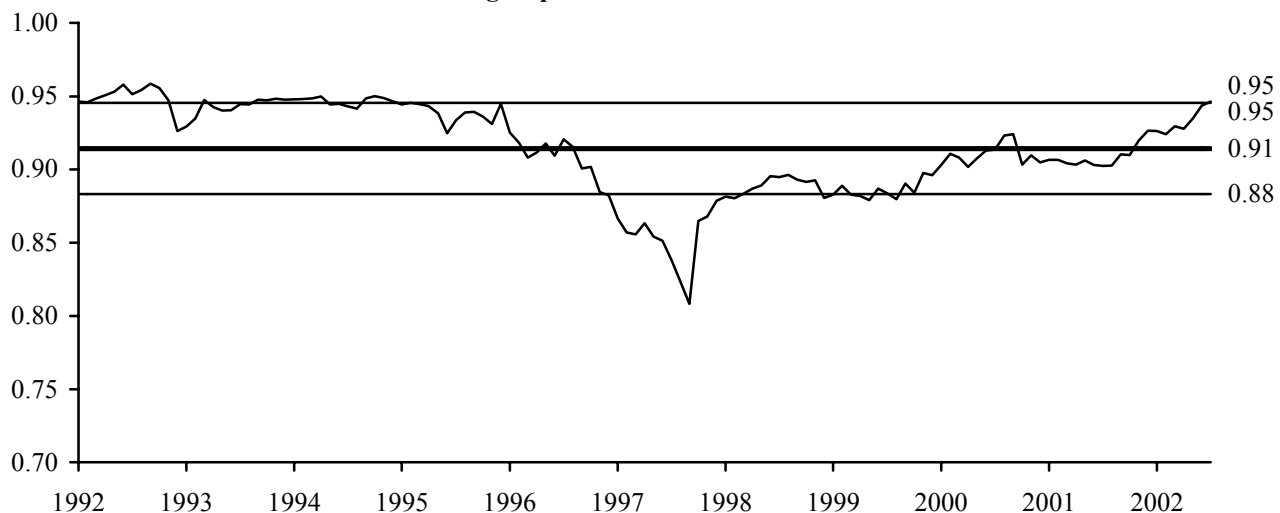
Note: MSCI EAFE Small-Cap Index correlations are calculated using price returns.

Table G (continued)

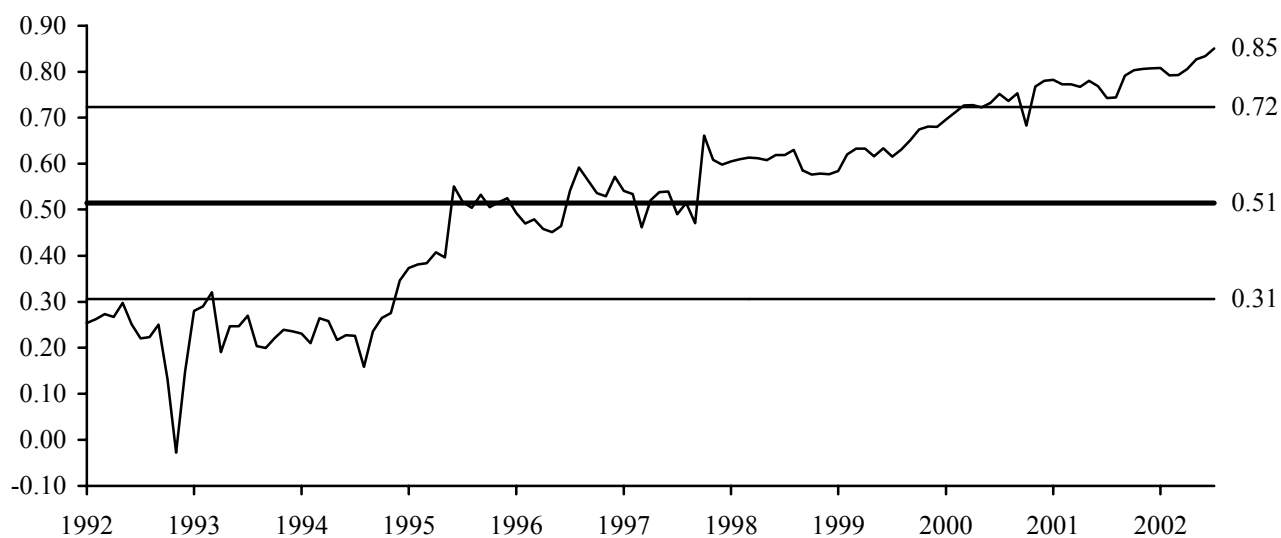
**ROLLING 36-MONTH CORRELATIONS OF SMALL- AND LARGE-CAP INDICES
IN U.S. DOLLARS**

December 1, 1989 - May 31, 2003

Citigroup EMI EPAC and MSCI EAFE



Citigroup EMI EPAC and Russell 2000®



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