

# A Convenient Way to Invest in the Emerging Markets

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It is widely accepted among researchers and investors that foreign equity portfolios provide attractive rates of return and important diversification benefits. Grubel [1968], Levy and Sarnat [1970], and Solnik [1974] provide some of the earliest support for the merits of investing internationally.

Only recently, however, have emerging market equities begun to receive acceptance as viable investments. Divecha, Drach, and Stefek [1992] and Harvey [1995] demonstrate the attractiveness of investing in emerging market equities, especially when combined with assets from developed markets (see Barry and Lockwood [1995] for a detailed discussion on the research on investing in emerging markets). Consequently, it is not surprising to find that emerging market equities are gaining broad investor acceptance, even though these assets have experienced periods of relative underperformance versus equities in developed markets (see Barry, Peavy, and Rodriquez [1997]).

An investor desiring to invest directly in individual emerging markets is confronted with risks not associated with investments in the United States or developed foreign markets. Some of those risks are very practical ones that do not have to do with the ordinary fluctuations in security values over time. They include the risk that the investor does not understand laws in the target market that impact the investor's ability to hold a position or repatriate funds. The investor may incur the risk that accounting information presented under a unique set of

accounting rules in the market is misinterpreted by the investor. Even such practical issues as custody and clearing operations may present unexpected risk to the investor.

Given those risks and the costs of gathering the information required to overcome them, the investor may prefer to buy shares of professionally managed funds that invest exclusively in the desired markets. In this way, the investor can rely upon the expertise of professional investment managers who specialize in these markets and spread the costs over a larger investment size.

Two primary types of funds are available to invest in emerging markets: open-end ("mutual") funds and closed-end funds. A mutual fund has a variable number of shares outstanding; investors can purchase or redeem shares at the fund's net asset value (NAV), which is defined as follows:

$$\text{NAV} = (\text{Market Value of Securities Owned} - \text{Total Liabilities}) / \text{Shares Outstanding}$$

Hence the number of mutual fund shares outstanding changes as investors purchase and redeem them. All mutual fund transactions occur at the NAV. On the other hand, closed-end funds have a fixed number of shares outstanding. Closed-end fund shares trade in the open market at a price determined by willing buyers and sellers. Thus the shares of a closed-end fund may trade at prices different from the fund's underlying NAV (see Peavy [1995] for a review of literature about closed-end funds).

Although several emerging market

mutual funds exist, the overwhelming majority of funds investing in these markets are of the closed-end variety. Rarely will a fund investing in the securities of a single country be open-ended, largely because of the potential problem of having to sell shares of relatively illiquid securities from the fund's portfolio on short notice in order to accommodate investor redemptions.

The aforementioned research showing the merits of investing in emerging markets uses broad stock indexes to measure the performance of these markets. The difficulty of investing directly in the indexes of the various emerging markets has caused investors to search for alternatives through which to acquire these assets. Possibly the most readily available alternative is the closed-end fund that invests exclusively in the stocks of an individual emerging market or in stocks from several different emerging markets.

Unfortunately, recent empirical research provides mixed results about these funds' ability to generate returns representative of their underlying markets. Arshanpalli et al. [1996], Bailey and Lim [1992], Bekaert and Urias [1996], and Bodurtha, Kim, and Lee [1995] cast doubt on the ability of emerging market closed-end funds (EMCFs) to proxy effectively for the performance of the underlying markets. Chang, Eun, and Kolodny [1995], however, conclude that despite acting more like U.S. stocks than their underlying assets, EMCFs retain significant exposure to their local markets and provide U.S. investors with substantial diversification benefits. Diwan, Errunza, and Senbet [1993] also find that EMCFs offer meaningful diversification benefits.

In this article, we further investigate the efficacy of EMCFs to proxy for the emerging markets. We compare the performance of EMCFs to that of their respective underlying markets and to the domestic stock market as measured by the Standard & Poor's 500 Composite Index (the S&P 500).

#### THE DATA

The International Finance Corporation (IFC) classifies only twenty-six countries as emerging, of which all except Nigeria are deemed to have investable stock markets. Exhibit 1 contains a list of these markets ranked by market capitalization as of December 31, 1995. We examine the performance of the equities of the investable emerging markets. We initially compute

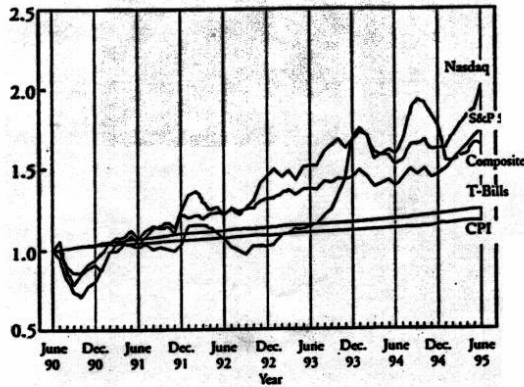
**EXHIBIT 1**  
STOCK MARKET CAPITALIZATIONS DECEMBER 31,  
1995 (LISTED IN ORDER OF DESCENDING SIZE)

COUNTRY	MARKET CAPITALIZATION (U.S. \$BILLION)
South Africa	\$280.5
Turkey	20.7
Malaysia	222.7
Portugal	18.3
Taiwan	187.2
Colombia	17.8
Korea	181.9
Greece	17.0
Brazil	147.6
Peru	11.7
Thailand	141.5
Pakistan	9.2
India	127.1
Jordan	4.6
Mexico	90.6
Poland	4.5
Chile	73.8
Venezuela	3.6
Indonesia	66.5
Hungary	2.3
Philippines	58.8
Nigeria	2.0
China	42.0
Zimbabwe	2.0
Argentina	37.7
Sri Lanka	1.9

rates of return and standard deviations of returns for each market and for the S&P 500. Exhibit 2 shows the cumulative performance of the emerging market composite index compared to several domestic securities indices and U.S. inflation as measured by the Consumer Price Index (the CPI).

The source of our stock returns data for the individual emerging markets is the IFC's Emerging Market Data Base (EMDB). The EMDB is regarded as one of the most authoritative sources for comprehensive data on stock markets in emerging countries. With information dating back to 1975, the EMDB covers all twenty-six emerging markets, providing regular updates on the more than 1,600 stocks comprising the IFC's Composite Index. Using EMDB data, we construct our own stock indexes for each of the twenty-six emerging markets.

**EXHIBIT 2**  
COMPOSITE JULY 1990-JUNE 1995



We develop our indexes by country, region, and market. We calculate monthly rates of return for individual stocks after adjusting the EMDB for certain timing problems in the reporting of cash dividends, stock dividends, stock splits, rights offerings, and other recapitalizations. The individual stock return calculation for month  $t$  is expressed as:

$$R_{it} = \frac{S_t P_t [1 - (RIS_t SP_t / (S_{t-1}) PRIS_t + (RIS_t SP_t))] + D_t S_t - P_t S_{new}}{S_t P_{t-1}} - 1$$

where

- $S_t$  = number of shares outstanding at time  $t$  (including new shares from stock splits and stock dividends).
- $P_t$  = price per share at time  $t$ .
- $RIS_t$  = number of new shares from rights issues during period  $t$ .
- $SP$  = subscription price for the right issue.
- $PRIS_t$  = pre-rights issue price per share at time  $t$ .
- $D_t$  = cash dividends paid during period  $t$ .
- $S_{new}$  = number of other new shares issued during time period  $t$ .

Our indexes are based on value-weighted portfolios for each market. Value-weighted return series

are also calculated for regional portfolios and a composite portfolio. The value-weighted return for a given market portfolio is calculated as the weighted average of the returns of the individual stocks in the portfolio, as follows:

$$R_{pt} = \frac{\sum_{i=1}^N W_{it-1} r_{it}}{\sum_{i=1}^N W_{it-1}}$$

The weight assigned to a security's return is its percentage of total market capitalization from the end of the previous period. This is how CRSP value-weighted portfolio returns and other common value-weighted return series are calculated. Given that new companies appear as emerging markets grow (and some disappear), the number of firms in a given market portfolio is not constant. The number of firms in a portfolio at a given time depends on the number of firms with valid returns.

The process of calculating individual rate of return data and then computing value-weighted returns results in market returns very much like those reported by the IFC Global Index. Our value-weighted portfolio returns for individual emerging markets are highly correlated ( $r^2$  exceeds 90%) with IFC Global Index-based returns.

We also examine the return and risk attributes of a sample of EMCFs. Exhibit 3 lists twenty EMCFs that invest exclusively in emerging markets. Sixteen of these funds, known as "country funds," invest only in the securities of a particular emerging country.<sup>1</sup> The Mexico Fund, which went public on June 11, 1981, is the senior country fund, followed by the Korea Fund, which began public trading on August 19, 1984. As of December 31, 1995, those two funds also were the largest EMCFs, with the Mexico Fund having net assets of \$750 million and the Korea Fund having net assets of \$747 million. The remaining fourteen country funds went public from 1986 to 1994, and range in net assets from \$32 million (Turkish Investments Fund) to \$336 million (Brazil Fund). As of June 30, 1995, ten emerging markets were not represented by a U.S.-based EMCF (Colombia, Greece, Hungary, Jordan, Nigeria, Peru, Poland, Sri Lanka, Venezuela, and Zimbabwe).

In addition to the country funds, two EMCFs invest in diversified portfolios containing securities from many emerging markets, while two other funds

### EXHIBIT 3 CLOSED-END FUNDS OF THE EMERGING MARKETS

FUND	MARKET	DATE OF INCEPTION	DISCOUNT OR PREMIUM <sup>#</sup>	EXPENSE RATIO (1995)	ANNUAL RETURN SINCE INCEPTION	
					NAV	MARKET
Taiwan	NYSE	12/05/86	4.8%	2.43%	20.22%	20.22%
New South Africa	NYSE	03/04/94	-20.7	2.10	21.74	6.08
Malaysia	NYSE	05/04/87	-6.7	1.44	12.86	11.05
Korea	NYSE	08/29/84	4.2	1.32	20.35*	17.97*
Brazil	NYSE	04/08/88	2.0	1.62	15.37	13.34
Thai	NYSE	02/16/88	-11.7	1.30	21.55	19.70
Mexico	NYSE	06/11/81	2.6	1.14	25.06*	28.81*
India Growth	NYSE	08/19/88	9.9	1.94	8.81	10.38
Chile	NYSE	09/27/89	-12.6	1.39	30.43	27.47
Indonesia	NYSE	03/09/90	21.4	1.96	-4.35	-3.46
China	NYSE	07/10/92	2.7	2.55	1.77	1.97
Argentina	NYSE	10/11/91	2.7	1.98	4.76	4.16
Turkish Investment	NYSE	12/05/89	8.7	2.16	-8.75	-8.69
Portugal	NYSE	11/01/89	-12.0	1.41	0.95	-2.16
Pakistan Investment	NYSE	12/17/93	-19.4	2.20	-27.02	-31.72
First Philippine	NYSE	11/15/89	-18.4	1.82	15.24	10.54
Templeton Emerging	NYSE	02/26/87	13.7	1.73	20.53	21.79
Morgan Stanley Emerging	NYSE	10/25/91	0.6	1.86	17.18	16.34
Latin American Investment	NYSE	07/25/90	-7.8	1.72	23.83	21.15
Asia Tigers	NYSE	11/19/93	-11.5	1.65	-0.93	-5.43
Average (country funds)			-2.7	1.80	9.94	7.86
Average (all funds)			-2.4	1.79	10.98	8.98

NYSE = NEW YORK STOCK EXCHANGE; NAV = NET ASSET VALUE.

\*LAST TEN YEARS ONLY.

<sup>#</sup>AVERAGE FOR 1995 (SOURCE: MORNINGSTAR CLOSED-END FUNDS).

invest in the securities of emerging markets within a particular region (Asia and Latin America). The Templeton Emerging Markets Fund is the oldest broadly diversified EMCF, having gone public on February 27, 1987, and is also the largest, with net assets of \$242 million as of December 31, 1995.

#### INVESTING IN EMERGING MARKET CLOSED-END FUNDS

Investors contemplating an investment in EMCF shares should understand how effectively the fund shares represent the performance of the securities of the underlying emerging market. Most EMCFs trade on the New York Stock Exchange, which causes some investors to question whether the prices of a fund's shares are influ-

enced by movements in the U.S. stock market. For example, Bodurtha, Kim, and Lee [1995] argue that the rates of return of the EMCFs may be largely influenced by U.S. "market sentiment," thus causing these funds to be less-than-perfect proxies for their respective underlying markets. These investors also contend that a change in a fund's discount from or premium over NAV may cause the fund's performance to differ from the performance of its portfolio of securities.<sup>2</sup>

In addition, various restrictions imposed by the individual emerging countries may have substantial effects on EMCF prices (see Bonser-Neal et al. [1990]). Finally, these investors express concern about the abilities of the funds' portfolio managers to generate returns at least as high as those of the underlying markets. Given these concerns, it is useful to under-

### EXHIBIT 4 CLOSED-END FUND RATES OF RETURN, RISKS, AND CORRELATIONS WITH THE S&P 500 JULY 1990-JUNE 1995

FUND	RATE OF RETURN*		STANDARD DEVIATION		CORRELATION (S&P 500)	
	FUND	MARKET#	FUND	MARKET#	FUND	MARKET#
Taiwan	0.28%	0.25%	12.53%	13.17%	0.28%	0.277%
New South Africa	1.64	2.88	6.81	7.51	0.063	0.149
Malaysia	0.93	1.37	9.98	7.52	0.405	0.332
Korea	0.20	0.35	11.16	7.87	0.151	0.063
Brazil	1.77	1.87	12.78	16.52	0.470	0.430
Thailand	0.81	1.37	10.45	9.85	0.466	0.314
Mexico	1.05	0.87	12.98	10.82	0.350	0.241
India Growth	0.83	1.03	11.59	10.96	0.206	-0.160
Chile	2.27	3.10	11.86	8.05	0.501	0.358
Indonesia	-0.36	-0.50	10.97	8.69	0.375	0.340
China	0.47	-1.67	14.61	23.99	0.310	0.061
Argentina	-0.40	1.04	9.05	12.24	0.316	0.116
Turkish	-1.07	-0.99	12.77	17.88	0.270	-0.119
Portugal	0.07	0.12	10.03	6.43	0.537	0.430
Pakistan Investment	-4.50	-1.47	5.50	5.79	0.209	-0.316
Templeton Emerging	1.78	0.84	9.69	5.66	0.627	0.408
Morgan Stanley Emerging	1.29	1.13	7.80	5.09	0.369	0.207
Latin American	1.82	1.89	12.15	7.52	0.497	0.387
Asia Tigers	-1.49	0.77	11.25	7.24	0.671	0.353
Philippines	1.64	1.55	11.08	10.02	0.330	0.376

\*MONTHLY GEOMETRIC MEAN RATE OF RETURN OVER THE JULY 1990-JUNE 1995 TIME PERIOD, OR IN CASES OF FUNDS GOING PUBLIC AFTER JULY 1990, FROM THE DATE OF INCEPTION TO JULY 1995 (SEE EXHIBIT 3 FOR DATES OF INCEPTION).

#EMERGING MARKET REPRESENTED BY THE EMCF

stand how EMCFs perform relative to their underlying markets.<sup>3</sup>

The empirical results in Exhibit 4 reveal that over the five-year period ended June 30, 1995, the average monthly geometric mean rate of return for the sixteen country funds is 0.35%, as compared to a 0.71% monthly return for the respective underlying country indexes. For all twenty EMCFs, the average monthly rate of return is 0.45%, versus a 0.80% return for the respective benchmarks. The average monthly rate of return for only three country funds (China Fund, Indonesia Fund, and Mexico Fund) exceeds the respective rate of return for their representative index by more than 5 basis points (the Taiwan Fund exceeds its index by 5 basis points).

Each of the other twelve country funds experienced a lower average rate of return than its benchmark index. One of the factors contributing to this relative underperformance is the high expense ratios for these funds. As shown in Exhibit 3, *Morningstar Closed-End*

*Funds* reports that for 1995 the average annual expense ratio for the sixteen country funds is 1.80%, ranging from a low of 1.14% (Mexico Fund) to a high of 2.55% (China Fund).

Another cause of the low relative returns is the tendency for the market prices of the funds to underperform the assets comprising the fund's portfolio. Exhibit 3 reveals that the average NAV of the country funds appreciated 9.94% annually from the inception of the fund, but the average market performance of the EMCFs over the same time period was only 7.86%. The underperformance of the country funds relative to their NAVs is a direct result of the funds' market prices falling to a discount from their respective NAVs.

Excluding the two EMCFs with less than one and a half years of history as of June 30, 1995 (China Fund and New South Africa Fund), only five country funds record a lower standard deviation of returns than the respective benchmark index. Each of the other nine country funds experienced greater volatility than its

respective benchmark index. The average monthly standard deviation of returns for the fourteen country funds (excluding the two new funds) is 10.91%, or more than three times the S&P 500's monthly standard deviation of 3.30% over the same time period. Seven country funds experienced lower rates of return and higher volatility than their respective benchmarks. The China Fund, with only a two-and-a-half-year history, is the sole country to show a higher annual rate of return at lower volatility than its benchmark index.<sup>4</sup>

Neither of the two regional EMCFs fared well. Both of those funds trade at a substantial discount to NAV (averaging 9.6%). Consequently, the average market performance of those funds is only 7.86%, versus an 11.45% rate of return for the funds' underlying assets. In addition, the average monthly standard deviation of returns for these funds at 11.70% is slightly higher than the comparable average for the country funds. Over the time period observed, the regional EMCFs did not provide risk reduction benefits.

Both EMCFs investing in the broadly diversified emerging markets (the Morgan Stanley Emerging Markets Fund and the Templeton Emerging Markets Fund) provided monthly compound rates of return in excess of their benchmark index, the emerging markets composite index, even though the funds had a 1.80% average annual expense ratio (1995). Those two funds recorded an average monthly rate of return of 1.54%, exceeding the composite index return of 0.98% over the same time period. Some of this excess return is attributable to the fact that these funds' prices advanced to an average 7.1% premium over NAV. In addition, the average monthly standard deviation of returns for these funds (8.75%) is lower than the average standard deviation for the individual country funds. Apparently, the greater diversification among these funds reduces risk, at least relative to the country funds.

#### DIVERSIFICATION BENEFITS OF CLOSED-END FUNDS

One of the widely heralded benefits of investments in stocks of the emerging markets is the ability to increase a portfolio's expected rate of return while maintaining or even reducing overall portfolio risk. The research of Brown [1991], Chaudhuri [1991], and Divecha, Drach, and Stefek [1992] indicates that correlations between emerging markets and developed mar-

kets are very low. In order to provide meaningful diversification benefits when combined with domestic stocks, EMCFs must provide rates of return that are not highly correlated with the returns of U.S. stocks.

Exhibit 4 shows that, over the five-year period ended June 30, 1995, the rates of return of the EMCFs were not highly correlated with domestic stock returns. Correlation coefficients measuring the relationship of the respective EMCFs to the S&P 500 range from a low of 0.063 (New South Africa Fund) to a high of 0.627 (Templeton Emerging Markets Fund).<sup>5</sup> The average correlation coefficient of the twenty EMCFs with the S&P 500 is 0.371. This compares to an 0.200 correlation of the emerging market composite index with the S&P 500. Consequently, as a result of the relatively low correlation with domestic stocks, EMCFs appear to provide diversification benefits, although not as meaningful as the broader composite index.

Another key consideration with respect to the diversification benefits of an EMCF is the fund's ability to effectively proxy for the returns of the underlying market represented. As shown in Exhibit 4, for the five-year period ended June 30, 1995, the rates of return of eighteen of the twenty EMCFs are more highly correlated with the S&P 500 than the corresponding returns for their respective benchmarks. Only the newest fund (New South Africa Fund), with a brief one and a quarter years of performance history, and the First Philippine Fund are less correlated with the S&P 500 than their respective underlying markets.

The average correlation coefficient of the respective markets underlying the twenty EMCFs is 0.212, or only slightly more than one-half the magnitude of the average correlation coefficient for the individual funds. Over the observed time period, EMCFs did not provide the substantial diversification benefits that direct (indexed) investments in the underlying securities of the respective emerging markets would have.

#### MINIMUM-VARIANCE PORTFOLIOS

In order to explore further the merits of EMCFs as proxies for the emerging markets, we construct a series of minimum-variance portfolios (MVP). Each MVP consists of a combination of the S&P 500 and an individual emerging market index or an EMCF. In this manner, forty MVP combinations are created. The purpose of this analysis is to determine the extent to which

**EXHIBIT 5**  
**MINIMUM-VARIANCE PORTFOLIO WEIGHTS**

FUND	WEIGHT	CORRESPONDING MARKET	WEIGHT
Taiwan Fund	-1.01%	Taiwan Market	-0.73%
New South Africa Fund	17.39	South Africa Market	12.03
Malaysia Fund	-2.93	Malaysia Market	5.23
Korea Fund	4.29	Korea Market	13.31
Brazil Fund	-6.65	Brazil Market	-5.31
Thailand Fund	-5.87	Thailand Market	0.77
Mexico Fund	-2.74	Mexico Market	2.07
India Fund	2.33	India Market	11.69
Chile Fund	-7.77	Chile Market	2.40
Indonesia Fund	-2.57	Indonesia Market	1.71
China Fund	-2.07	China Market	1.05
Argentina Fund	1.96	Argentina Market	4.10
Turkish Fund	-0.33	Turkey Market	5.19
Portugal Fund	-9.06	Portugal Market	5.20
Pakistan Investment Fund	21.14	Pakistan Market	29.94
Templeton Emerging Markets Fund	-14.15	Emerging Market Composite	11.75
Morgan Stanley Emerging Markets Fund	2.63	Emerging Market Composite	24.79
Latin American Investment Fund	-7.62	Latin American Region	2.66
Asia Tiger Fund	-15.99	Asia Region	5.27
1st Philippines Fund	-1.06	Philippines Market	-1.79

an emerging market index and/or an EMCF enters the MVP when combined with the S&P 500.

The results presented in Exhibit 5 indicate that rarely did an EMCF enter an MVP. In fact, only six EMCFs are included at all in the series of MVPs. Only two of those funds received portfolio weights in excess of 5%, and one had only one and a half years of existence (the New South Africa Fund). The remaining sixteen EMCFs received negative portfolio weightings, indicating that these funds would not be included at all in the respective MVPs. That is, in these instances, the S&P 500 would comprise fully 100% of the portfolio.

The underlying markets represented by the twenty EMCFs are more widely represented in the MVPs. When combined with the S&P 500, only three of the underlying emerging markets are not included in the series of MVPs (Brazil, Taiwan, and the Philippines). Not surprisingly, the emerging market composite index received a higher portfolio weighting than all except one individual country market when combined with the S&P 500.<sup>6</sup> Consequently, the individual emerging markets are more efficient alternatives to combine with domestic securities in order to reduce portfolio risk than are the EMCFs.

**CONCLUSION**

The introduction of closed-end funds that invest in the stocks of emerging markets provides investors with a convenient way to invest in emerging markets. Because many EMCFs trade actively on the NYSE, their shares can be purchased readily at low transaction costs.

A key question is whether these specialized funds generate rates of return comparable to those of the underlying markets the funds represent and at comparable risk. The relative newness of EMCFs and the corresponding paucity of available empirical results prevents a definitive answer to this question. Empirical results over the five years ended June 30, 1995, however, indicate that although EMCFs provide some diversification benefits due to their low correlations with domestic stocks, they have not been highly representative of their underlying markets. With the exception of the two broadly diversified funds, EMCFs, on average, have underperformed their respective benchmarks and experienced greater risk.

Of additional importance is the fact that EMCFs have not provided as meaningful diversification benefits as would direct investments in the securities of their underlying markets, because the funds' returns are sub-

stantially more correlated to domestic stocks. If EMCFs are to provide returns representative of their underlying markets in the future, they must show higher relationships to their own markets than in the past.

## ENDNOTES

This study was sponsored by a research grant from the Research Foundation of the Institute of Chartered Financial Analysts. Historical performance data are provided by the International Finance Corporation through its Emerging Markets Data Base.

<sup>1</sup>More than one country fund exists for several of the individual emerging markets. In those instances only the oldest country fund from a particular market is observed.

<sup>2</sup>For a discussion of the explanations of the cause of the discounts and premiums on closed-end funds, see Lee, Shleifer, and Thaler [1990].

<sup>3</sup>For any fund with less than a five-year history, rates of return and standard deviations are computed from the first full quarter of the fund's existence through June 30, 1995.

<sup>4</sup>Note that the China Fund invested heavily in the securities of Hong Kong, which is classified as a developed country.

<sup>5</sup>Excluding the New South Africa Fund, with only one and a quarter years of trading history, the Korea Fund has the lowest correlation with the S&P 500 (0.150).

<sup>6</sup>The volatility of individual country markets can overwhelm the diversification benefits from low correlations between emerging markets and U.S. stocks. The Composite Index experienced lower volatility than the individual markets reflecting diversification benefits within emerging markets.

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