

**ABSTRACT**

International equity investing is widely accepted by institutional investors as a way to diversify their portfolios. In addition, expanding the equity investment universe to include small companies increases the efficiency of most portfolios. In this paper, we examine how much of an investment fund's foreign equity portfolio should be allocated to small cap equities.

LARGE CAP VS. SMALL CAP INVESTING

Because of the benefits of diversification, investors generally experience lower overall volatility if they invest in foreign markets. Often, investors who invest in developed foreign markets benchmark themselves to the MSCI EAFE index (Europe, Australasia, and Far East). However, the MSCI EAFE index contains only mid- to large capitalization stocks and hence ignores the large investable universe of small capitalization foreign developed market equities.

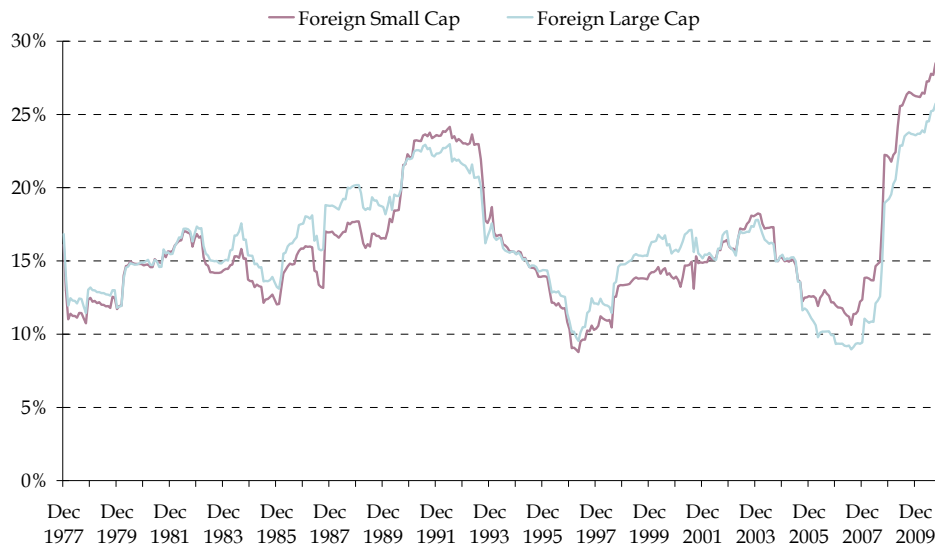
Owning only large capitalization international stocks limits an investor's opportunities in the international markets. Larger companies are typically more mature with fewer opportunities for significant growth, while smaller companies may provide investors with exposure to newer developing goods, technologies, or services. For the period 1975 through 2010, small capitalization international stocks returned 12.3% versus 11.3% for large capitalization international stocks.¹ This may be an international manifestation of the famous "small stock effect," an empirical discovery regarding the outperformance of domestic small cap stocks relative to domestic large cap stocks.

Surprisingly, the historical outperformance of foreign small caps occurred with the same amount of volatility (risk). The annualized standard deviation of foreign small caps and large caps was 17.5% since 1975. Hence foreign small cap stocks have outperformed on both an absolute and risk-adjusted basis.

This has certainly not been the case in the United States, where small caps have been consistently more volatile than large caps over the same time period (see appendix A). The following chart shows that foreign small caps have on occasion been *less* volatile over three-year periods than foreign large caps. The longest such stretch coincides with the run-up of the Japanese market in the 1980's. However, the chart also shows that, since 2006, foreign small cap stocks have been consistently, if only modestly, more volatile than large cap stocks overseas.

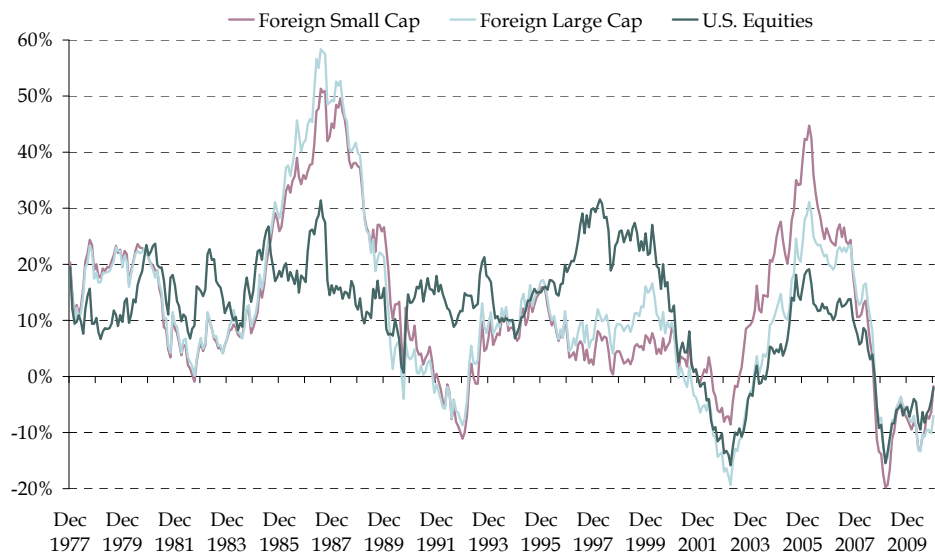
¹ Throughout this paper, foreign small caps are proxied by the Independence International Associates (IIA) Small Cap index through December 2000 and the MSCI EAFE Small Cap index thereafter (representing the inception of the latter), foreign large caps are proxied by the MSCI EAFE index, and U.S. equities are proxied by the DJ Wilshire 5000 through December 1978 and the Russell 3000 thereafter.

Three-Year Rolling Annualized Volatility, Foreign Equities



Historically, developed foreign market equities and domestic equities have produced returns that have not been perfectly correlated with one another. The following chart compares the returns of the broad U.S. equity market with those of the developed foreign markets.

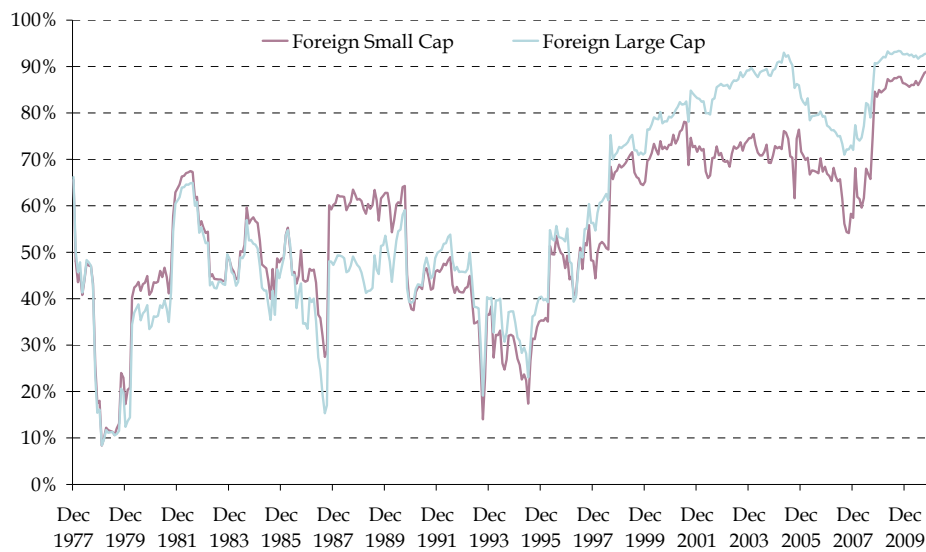
Three-Year Rolling Annualized Returns



Smaller capitalization foreign equities have also experienced slightly lower correlations to the U.S. markets than their larger counterparts. From 1975 through 2010, the correlation of small international stocks to U.S. stocks was approximately 0.60. For the same period, the correlation of large international stocks to the U.S. market was 0.63. This slightly lower correlation may be the result of foreign small caps' relative focus on their home countries' domestic markets (compared with their larger, slightly more multinational brethren).

As the following chart indicates, correlation with the broad U.S. market over three year periods have often been lower for foreign small caps than for foreign large caps, particularly since 1998. However, correlations with the U.S. market climbed higher than the long-term average around this same time, and they jumped still higher during the Global Financial Crisis. If this latter trend represents a permanent change, it will mean reduced diversification benefits going forward. Nevertheless, small capitalization foreign stocks should present U.S. investors with more meaningful opportunities to diversify their portfolios than would foreign large cap stocks alone.

Three-year Rolling Correlations with U.S. Stocks



Why Have Small Caps Outperformed?

It is important to understand why smaller stocks have outperformed historically if we are to determine if they should continue to outperform. One hypothesis for the outperformance of small cap stocks in the U.S. has been that small stocks have commanded a premium because they were riskier than their large cap brethren. Yet, as discussed earlier, the volatility of small cap stocks overseas has not been greater than large cap stocks historically. And as the downside capture ratio in the following table illustrates, small caps have held up better than the broad foreign equity market during market downturns. Hence, there is little evidence to support the argument that foreign small cap investors have received a premium due to the greater risk of small cap stocks.

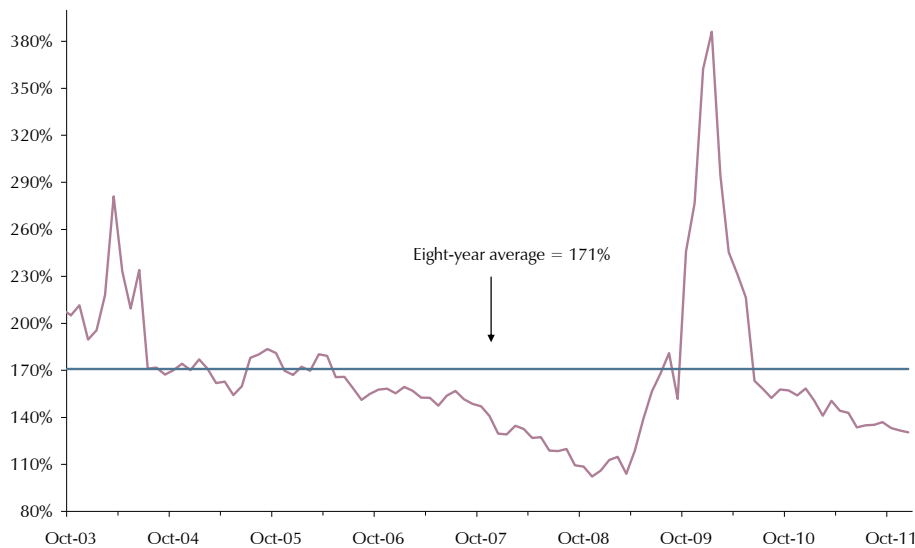
Bear Market Performance, 1975-2010

	% of Negative Months	Performance when EAFE was Negative ²	Downside Capture Ratio
Foreign Small Cap	40%	-3.3%	89%

² Represents average monthly performance during months when the MSCI EAFE index was negative.

Another hypothesis is that foreign small cap stocks were priced much more cheaply relative to larger stocks earlier in this period, and that their valuations have since compressed to a level roughly equivalent with large cap stocks. Unfortunately, Price-Earnings data for the MSCI EAFE Small Cap index is not available prior to 2003 so this is difficult to confirm or disprove. However, since 2003, foreign small cap stocks have traded at a consistent and meaningful premium over foreign large cap stocks (see the following chart). Such a large premium is usually due to the market having significantly higher growth expectations, in this case for smaller stocks.

Price-Earnings Ratio of Small Cap vs. Large Cap Foreign Stocks
October 2003 through October 2011



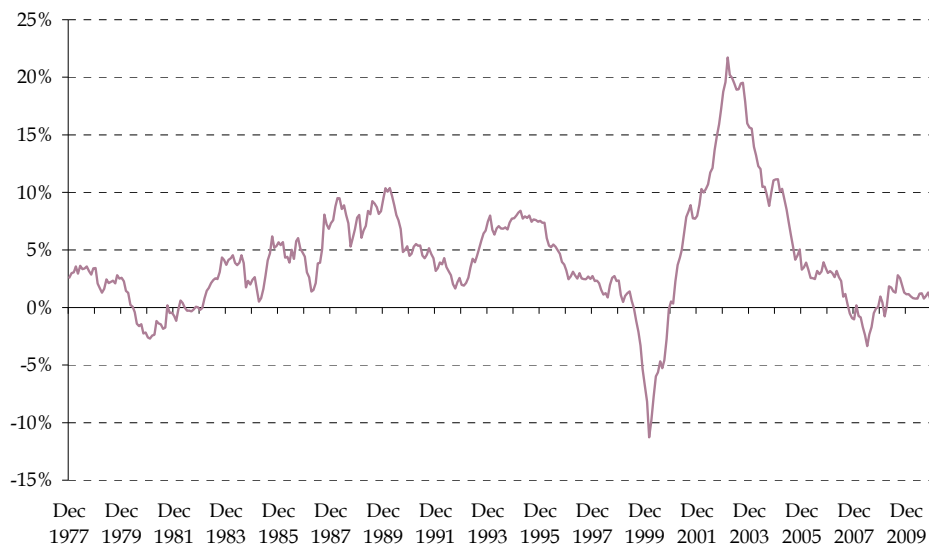
GROWTH AND VALUE CONSIDERATIONS

Domestically, historical data indicates that value stocks have outperformed growth stocks over long time periods. In foreign markets, the data similarly indicate that value-oriented securities have outperformed growth-oriented securities. Indeed, international small cap value stocks have outperformed international small cap growth stocks on both an absolute and risk-adjusted basis. From 1975 through 2010, international small cap value equities gained an average of 13.1% per year, 400 basis points higher than the 9.1% average for international small cap growth.³

³ Foreign small cap value is proxied by the Independence International Associates (IIA) Small Cap Value index through May 1994 and the MSCI EAFE Small Cap Value index thereafter (representing the inception of the latter); foreign small cap growth is proxied by the Independence International Associates (IIA) Small Cap Growth index through May 1994 and the MSCI EAFE Small Cap Growth index thereafter. IIA relied on price-book value ratios as the determining factor as to which of the two sub-indices, value or growth, a security falls.

The premium for value-stock investors has been persistent. The following chart displays the difference between value stock and growth stock performance on a rolling three-year basis. Since 1975, growth stocks have outperformed value stocks for only 14% of the rolling three-year periods. The largest such anomaly occurred during the dot-com bubble of the late 1990's, and it was both quickly and violently reversed.

**Difference between Value and Growth
Three-Year Rolling Annualized Returns**



In addition to their outperformance, small value companies displayed a lower amount of volatility. The annualized standard deviation for small value stocks was 17.4% while it was 18.1% for small growth. Hence, value stocks produced considerably superior risk-adjusted returns. Correlation to the U.S. equity markets was roughly even, at 0.57 for small value stocks and 0.59 for small growth.

Why Has Value Outperformed?

Just as understanding the past outperformance of small stocks was important in determining their future prospects, it is imperative to understand why small cap value stocks have outperformed small cap growth stocks. The two primary explanations relate to risk and human behavior.

If value stocks were more risky, then investors would logically expect to be compensated through a higher return over time. In a 1996 paper, Fama and French argued that when one looked at individual company fundamentals, value stocks in the U.S. were those "more prone to financial distress."⁴ Further, a 2004 paper by Doukas, Kim, and Pantzalis suggested that value stocks represent a higher level of risk because there is a greater dispersion of

⁴ Source: Fama, Eugene F., and Kenneth R. French. 1996. "Multifactor Explanations of Asset Pricing Anomalies." *Journal of Finance*, vol. 51, no. 1 (March): 55-84.

earnings estimates for these stocks.⁵ However, many other academic studies dismiss the theory that value stocks are more risky. For example, Lakonishok, Shleifer, and Vishny reviewed historical return data and concluded that risk did not explain the value premium in the U.S.⁶ As the following performance table illustrates, value stocks have historically proved *less risky* than growth stocks. Thus, as with the small stock premium, risk does not appear to have been a major driver of the value premium.

Bear Market Performance, 1975-2010

	% of Negative Months	Performance when Foreign Small Cap was Negative ⁷	Downside Capture Ratio
Foreign Small Cap Value	38%	-3.3%	95%
Foreign Small Cap Growth	40%	-3.8%	108%

However, there are good reasons to believe that investors behave irrationally in the area of growth and value stocks. Investors expect that a company that has been growing quickly and consistently will continue this trend to a greater degree than is justified by historical data. Conversely, a company that has produced disappointing earnings will likely be dismissed as being in a permanent decline. This persistent over-reaction leads a value-oriented investor to avoid owning companies that are overpriced due to excessive optimism and to buy companies that are underpriced as the result of excessive pessimism.

In addition, equity (sell-side) analysts are generally more interested in recommending successful stocks with exciting businesses than troubled businesses that may be cheap. Similarly, portfolio managers find it easier to defend their investments in stocks that have done well recently than those that have displayed weak fundamentals.

In our view, these behavioral issues are the most compelling explanations for the value effect. This view is important when making strategic allocations to value and growth stocks. Specifically, because we expect that human behavior will not change, we believe that the average investor will continue to overpay for the implied promise of future earnings growth. Hence, we expect that the value effect will persist.

ASSET ALLOCATION STRATEGIES

To illustrate the effect of altering the composition of an investor's developed foreign equity allocation, we calculated the potential outcomes of three different international asset allocations within part of an overall allocation consisting of 40% U.S. equities, 40% U.S. bonds, and 20% foreign stocks. As the following table illustrates, a higher allocation to small cap international equities would have led to higher long-term returns and reduced volatility.

⁵ Source: Doukas, John A., Kim Channskog, and Pantzalis, Christos. 2004. "Divergent Opinions and the Performance of Value Stocks." *Financial Analysts Journal*, vol. 60, no. 6 (Nov/Dec): 55-63.

⁶ Source: Lakonishok, Josef, Shleifer, Andrei, and Vishny, Robert W. 1994. "Contrarian Investment, Extrapolation, and Risk." *Journal of Finance*, vol. 49, no. 5 (December): 1541-78.

⁷ Represents average performance during months when the Foreign Small Cap composite was negative.

Historical Returns for 40/20/40 Funds, 1976-2010

	20% Large Cap	15% Large Cap 5% Small Cap	10% Large Cap 10% Small Cap
Annualized Return	10.3%	10.4%	10.6%
Standard Deviation	9.7%	9.6%	9.6%

Similarly, the following table shows the historical returns for foreign equity portfolios comprised of varying amounts of small cap equities. For example, by investing 40% of a fund's foreign equities in small cap, the total return for the foreign equity allocation would have increased forty basis points, while volatility would have been reduced by twenty basis points.

Foreign Large Cap /Foreign Small Cap, 1975-2010

	100/0	90/10	80/20	70/30	60/40	50/50
Return	11.3%	11.4%	11.5%	11.6%	11.7%	11.8%
Standard Dev.	17.5%	17.4%	17.3%	17.3%	17.3%	17.3%
Return/Risk Ratio	0.64	0.65	0.66	0.67	0.68	0.68

IMPLEMENTATION ISSUES

Market Liquidity & Trading Costs

Since lower liquidity is generally associated with higher trading costs, commission and execution costs tend to be higher than for smaller-sized issues. Further, it can be difficult to buy and sell small cap stocks in a timely manner, particularly when the market as a whole or an individual issue is experiencing selling pressure. Indeed, the weighted average bid-ask spread for small European stocks was as low as 14 basis points in the benign environment of early 2011, but as high as 37 basis points in the volatile periods of March 2009 and August 2011.⁸ Transaction costs for small cap stocks overseas have declined considerably over the past decade, but they remain higher than those for large cap stocks. High trading costs make low turnover strategies more attractive

Management Fees

Managing a portfolio of international small cap stocks is expensive. According to eVestment Alliance, as of July 2010 the average actively managed non-U.S. international small cap manager charged a fee of 99 basis points for a \$10 million portfolio. Such high fees present a significant performance hurdle for portfolio managers.

Active and Passive Management

⁸ Source: Deutsche Bank. Analysis was conducted on the SCXP, a composite of 200 European stocks with a weighted average market cap of \$431 billion as of September 30, 2011.

Historically, foreign small cap equity markets have provided opportunities to add value through active management. While passive management provides diversification benefits, active management can control risks and improve performance. Skilled investors have opportunities to add value by allocating holdings between markets and within markets. The limited research coverage, intrinsic inefficiencies, and inherent volatility of small cap stocks create an opportunity for the savvy manager to produce added value. We believe that skilled managers can add value, especially those running concentrated portfolios. However, a single manager who invests a concentrated portfolio will likely exhibit very high “tracking error” (i.e., their returns will likely deviate substantially from the benchmark, especially over short periods).

The following table compares the average Jensen’s alpha⁹ for several universes of active foreign equity managers versus their respective benchmarks for the seven-year period ended December 2010.¹⁰ The risk-adjusted return of the median foreign small stock manager from during this period was 1.5% per annum higher than that of the benchmark, gross of fees. In addition, the difference in returns between top and bottom quartile managers (i.e., the inter-quartile spread) implies that there is opportunity for a savvy manager to produce added value.

	25 th Percentile Manager	Median Manager	75 th Percentile Manager
Foreign Large Cap	321 bp	153 bp	32 bp
Foreign Small Cap	332 bp	209 bp	99 bp

On the surface, the historical record implies that active foreign small cap equity managers have on average outperformed the passive benchmark. However, it is important to note that the sample may have a significant upward bias as poorly performing investment products may have been liquidated or simply stopped reporting. The true effect of survivorship bias is difficult to accurately assess with any asset class, but the relatively small sample size of active foreign small cap market managers warrants additional caution. Still, we believe the data supports the use of, though not necessarily a preference for, active managers.

Finding Skilled and Open Managers

One of the most important aspects of active investing in foreign small cap stocks is finding skilled investment managers. A 2009 study by S&P showed that only 23% of active foreign small cap managers who were in the top quartile over the preceding three years remained there for the subsequent three-year period¹¹. Hence, there is little evidence to indicate persistence of manager outperformance.

⁹ Jensen’s alpha reflects the average outperformance, adjusted for each manager’s market risk (i.e., beta).

¹⁰ Source: eVestment Alliance. The Foreign Large Cap universe was composed of 303 managers and benchmarked to the MSCI EAFE index. The Foreign Small Cap universe was composed of 34 managers and benchmarked to the MSCI EAFE Small Cap index.

¹¹ Source: Soe, Aye M. and Dash, S. (August 2009). “It’s a Small World: Manager Dynamics in International Small Cap.” Standard & Poor’s.

If, however, skilled portfolio managers are identified, another problem may arise. Small foreign small cap strategies with good track records are closed to new investors, due to capacity issues. As of 2011, however, this number was relatively small, as just three of the 55 EAFE small cap managers referenced in the eVestment Alliance universe were closed to new investors.

SUMMARY AND RECOMMENDATIONS

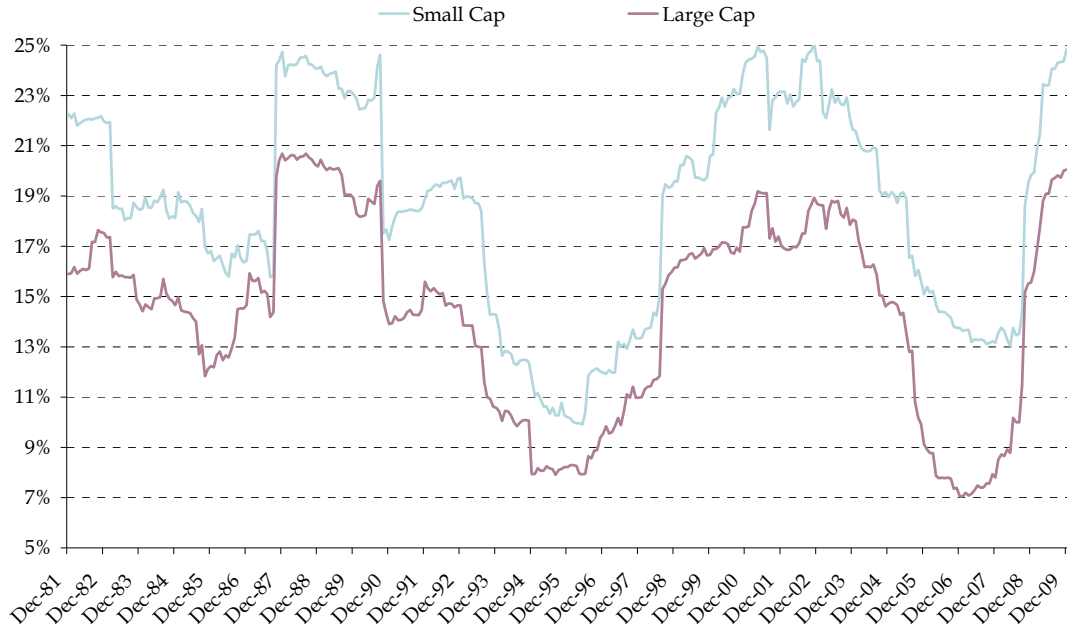
Since 1975, foreign small capitalization stocks have outperformed large capitalization stocks by approximately 100 basis points per year and have offered U.S. investors diversification opportunities. Furthermore, small value stocks have outperformed small growth stocks by an average of 400 basis points per year. However, the correlation between international stocks and domestic stocks increased substantially over the past decade, thus reducing the diversification benefits of foreign equities, including small cap stocks.

Meketa Investment Group believes that foreign small cap stocks are appropriate for most long-term portfolios. We recommend that plan sponsors with large, well-diversified portfolios allocate no less than 10% of their developed foreign equity (i.e., EAFE) assets to small cap stocks. Moreover, there may be times (e.g., when small stocks exhibit low valuations vis-à-vis large cap stocks) that plan sponsors consider investing as much as half of their developed foreign equities in small cap stocks.

Meketa Investment Group believes that both active and passive management are appropriate for gaining exposure to smaller capitalization foreign equities. We believe that skilled managers can add value, especially those running concentrated portfolios. While large investors are able to reduce tracking error through the development of a portfolio of complementary concentrated managers, indexing may be appropriate for other investors. We also recommend a dedicated mandate, as many EAFE or global equity managers hold only a limited amount (if any) small cap exposure in their portfolios.

APPENDIX A

Three-Year Rolling Annualized Volatility, Domestic Equities



APPENDIX B

Foreign Small Cap Sector Weightings as of September 30, 2011

Sector	Weight (%)
Consumer Discretionary	17.7
Consumer Staples	6.9
Energy	4.5
Financials	19.9
Health Care	5.6
Industrials	23.0
Information Technology	8.5
Materials	10.7
Telecommunication Services	1.1
Utilities	2.1

Foreign Small Cap Regional Weightings as of September 30, 2011

Region	Weight (%)
North America	0.7
United Kingdom	19.5
Western Europe ex-UK	32.6
Eastern Europe/Middle East	1.0
Japan	31.1
Pacific Rim ex-Japan	15.1

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