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Investing in international equities: not scary… just practical

By overlooking international equities investors lose out on access to almost half of the global equity opportunity set. More importantly, international equities can offer powerful diversification benefits to stock portfolios.

It's a big world out there, but for U.S. investors it's often easy to forget that. With the sheer size, depth and variety of American capital markets at their fingertips, investors may feel that they are sufficiently spoiled for choice at home without ever entertaining the need to look abroad.

However, this home country bias could be a serious mistake. By overlooking international equities investors lose out on access to almost half of the global equity opportunity set. More importantly, international equities can offer powerful diversification benefits to stock portfolios. Because global stock markets do not move in perfect lock step, an allocation to international equities can reduce overall portfolio risk for a U.S.-based investor.

It is often said that asset allocation is the most important decision an investor makes. We would agree, and believe investors should remember the powerful rationale for a strategic allocation to international markets even during periods when international equity performance underwhelms compared to domestic markets. As Figure 1 shows, the relative performance of global markets is variable and difficult to time. We hope to demonstrate that, regardless of an investor's time horizon, there are good reasons to look beyond America's shores.

Exploring the global opportunity set

Many of the world's largest and most important companies are domiciled in the U.S., but the story doesn't end there. International equity markets account for almost half of global market capitalization (measured by their weighting in the MSCI All Country World Index the split is around 53% U.S., 10% emerging markets, and the remainder ex-U.S. developed market equities). These companies are an integral part of the global opportunity set and include household names already familiar to investors, like Swiss

Figure 1: Rolling five-year annualized performance of the MSCI USA Index and MSCI EAFE Index

Source: Morningstar, DeAM. Data is 6/30/81–3/31/17. **Past performance does not guarantee future results.**

firm Nestlé and Japanese carmaker Toyota. While many are domestically-oriented names that provide direct exposure to foreign economies, others are multinational corporations that do business globally like most large U.S. firms.

Some investors ask if holding U.S.-based multinationals is sufficient, given the global nature of those firms' revenues. While globalization has diversified the customer bases of firms the world over, U.S. firms and international firms typically generate their revenues in different economies. As shown in Figure 2, U.S. firms generate 63% of revenues domestically. In contrast, the firms in the MSCI EAFE Index (a widely-tracked benchmark of developed market international equities) only derived 18% of their revenues in the United States. Across regions, the economic exposure of U.S. companies and international companies is also quite different.

Including international equities also prevents investors from building overweight positions in certain sectors. The U.S. market is more concentrated in the technology and healthcare sectors, while developed market stocks outside the U.S. provide more exposure to sectors like financials, consumer staples and industrials.

Figure 2: Economic exposure of United States and Developed ex-U.S. companies

	United States	Developed ex-U.S.
United States	63%	18%
Emerging Markets	18%	25%
Europe	14%	34%
Pacific	4%	26%

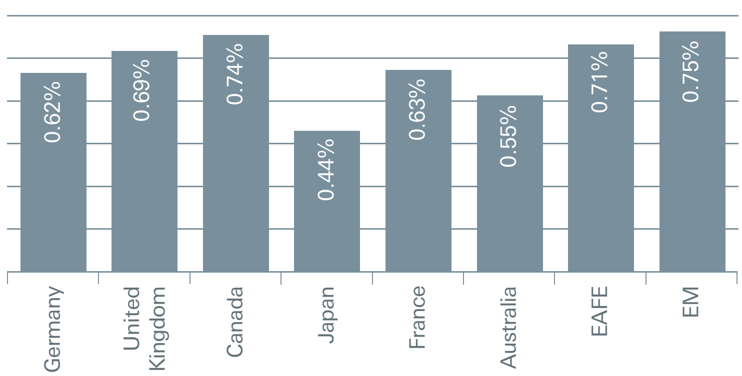
Source: MSCI as of 6/30/2016. The United States is represented by the MSCI USA Index, and is represented by the MSCI EAFE Index which includes developed countries ex-US and Canada. The Pacific is represented by the MSCI Pacific index, which includes India, Thailand, Korea, Taiwan, Philippines, Indonesia, Malaysia, New Zealand, Hong Kong, Singapore, China and Australia. **Past performance does not guarantee future results.** Emerging Markets is represented by the MSCI Emerging Markets Index

Portfolio diversification is crucial

In our opinion, the most compelling argument for international investment is the advantage of diversification. Modern portfolio theory tells us that combining assets that are imperfectly correlated can decrease overall risk. If the assets do not always move together, then their different behaviors can offset each other and lower the volatility of the portfolio. Almost all investors diversify their portfolios by allocating to different asset classes (equities, bonds and others), but we think they should also diversify geographically. Our view is that foreign currency exposure should be treated as a separate asset class from equity returns, and so we use local currency returns throughout our analysis. That way the return is representative of a currency-hedged investment for a U.S.-based investor.

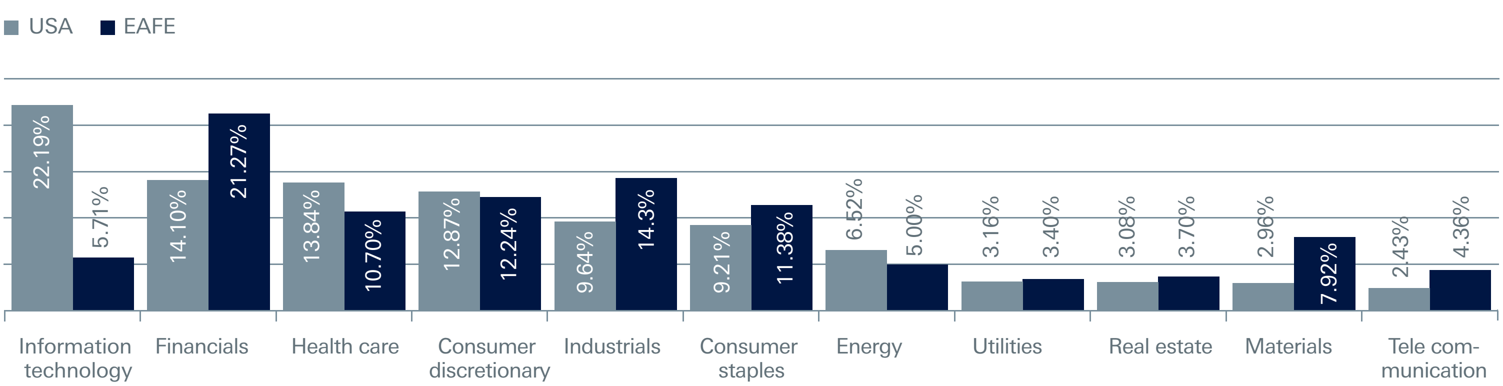
Given the different economic and sector exposures of international equities, it should come as no surprise that many international equity markets have historically exhibited relatively low correlation with the U.S. equity market. The correlation of several country equity indexes with the

Figure 4: Correlation of U.S. equity market and international equity markets



Source: Morningstar Direct, data from 7/76–3/17. MSCI EM data from 1/01–6/16. **Past performance does not guarantee future results.**

Figure 3: Sector breakdown of United States and Developed ex-U.S. companies



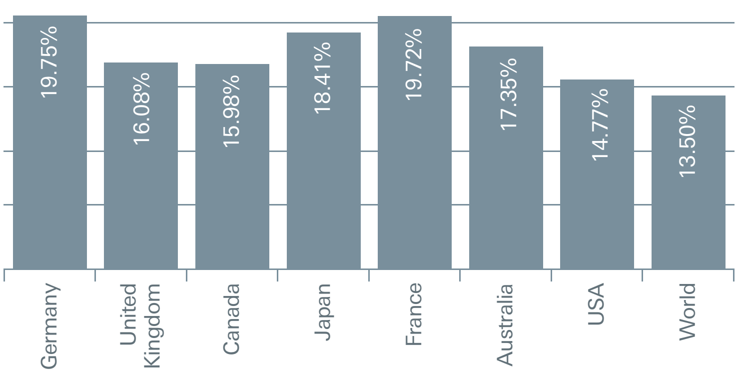
Source: MSCI as of 3/31/17. The United States is represented by the MSCI U.S. Index, and Developed ex-U.S. is represented by the MSCI EAFE Index.

U.S. market is shown in Figure 4, as well as the correlation of developed ex-U.S. and emerging market equities. A correlation of 1 suggests that two assets move in perfect lock step—anything lower has risk reduction potential.

The risk reduction potential of diversifying into international equities is illustrated in Figure 5, which shows the volatility (standard deviation) of equity markets including the United States going back 40 years. Each country has been more volatile than the United States on a standalone basis. Global equities, represented by the MSCI World, were even less volatile, demonstrating the potential benefit of international diversification.

Not all investors can, or will, allocate to international equities according to market capitalization (about a 50% allocation). They feel more comfortable with domestic equities and would prefer to focus their attentions and assets there. However, even a small allocation to international equities has historically helped reduce equity portfolio volatility.

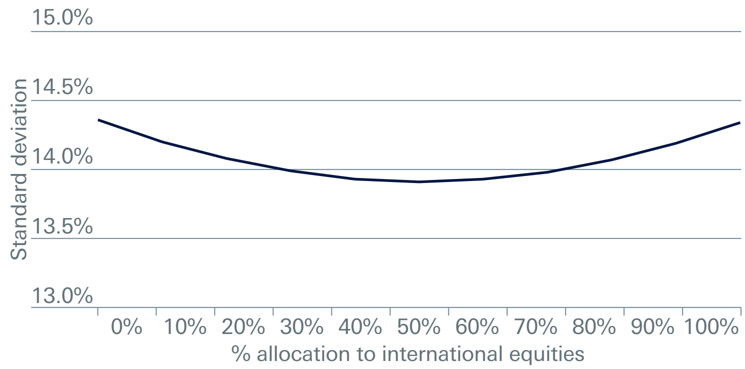
Figure 5: Equity market volatilities



Source: Morningstar as of 3/17. Data from 7/76–3/17. **Past performance does not guarantee future results.**

To see the impact on risk that allocating to international equities in varying amounts can have, we created 11 simple model portfolios of two "assets" using over 14 years of data starting in 2002: the MSCI U.S. Index, and the MSCI EAFE Index. The portfolios ranged from 0% allocation to international (100% MSCI U.S.), increasing in 10% increments to fully invested in international equities. Figure 6 shows the results of this analysis. Domestic equities alone had a volatility of almost 20%, but allocating just 10% to international equities reduced overall risk by over one percentage point to 18.4% and a modest 20% allocation reduces it a further percentage point. To gain significant risk reduction benefits, investors may not need to allocate a huge slice of their portfolio to international equities.

Figure 6: Annualized volatility of equity portfolios when adding international equity exposure



Source: Morningstar, DeAM as of 3/17. Hypothetical example: does not represent a particular investment.

An optimized approach

Another way to look at this issue is by formulating forward-looking assumptions of risk, return and correlations and then use them to create an optimized portfolio. For example, an investor could find the weights needed in each asset class in order to produce a portfolio with the highest return, the lowest volatility or, perhaps best of all, the highest reward-to-risk ratio.

Of course the return, risk and correlation assumptions are very important in this approach and there are numerous ways to come up with these numbers. Here we will only compare three different (and relatively straightforward) methods: the first using historical numbers, the second using a "constant volatility" method that assumes the same reward-to-risk ratio across markets and backs out an implied return accordingly, and the third using much higher correlations from more recent data in order to test the sensitivity to that assumption.

From the beginning of 2002 through the end of June 2016 (this start point was selected due to data availability constraints for emerging market equities), the return, risk and cross-asset correlations of the MSCI U.S. Index, MSCI EAFE Index and MSCI Emerging Markets Local Index can be seen in Figure 7.

Before we discuss the results, we should mention the three constraints we set. Optimizers, set loose without any common sense restrictions, tend to get overexcited by the tiniest relative advantage and can suggest outlandish portfolios. The human touch is still recommended. First, every region had to have a positive weighting. This was done to prevent any short selling. The second constraint was that the maximum allowable weighting in the emerging markets was 10%. This was a common-sense limit, given that a U.S. investor is unlikely to take seriously a suggestion to place much more of their equity allocation than that amount into the emerging markets. Finally, we insisted that the weightings add up to 100%. Similar to the constraint that prevented short selling, ensuring that the weight of the portfolio adds up to 100% rules out the use of leverage and implies full investment.

The return, risk and correlation numbers from the three different methods discussed result in, the optimum weightings in each asset shown in Figure 8. Again, in each case, the goal was to maximize the reward to risk ratio for the portfolio.

Figure 7: Empirical data portfolio assumptions (1/1/02–3/31/17)

	Correlation Matrix		
	MSCI USA	MSCI EAFE	MSCI EM
MSCI USA	1.00		
MSCI EAFE	0.55	1.00	
MSCI EM	0.36	0.59	1.00

Index	Return	Standard deviation
MSCI USA	6.4%	19.3%
MSCI EAFE	4.5%	16.6%
MSCI EM	10.4%	16.1%

Source: DeAM, Bloomberg as of 3/17. Hypothetical example: does not represent a particular investment.

Figure 8: Optimal portfolio weights under different assumptions

	Empirical Data		
Strategy	U.S.	EAFE	EM
Empirical Data	31%	59%	10%
Constant volatility	44%	46%	10%
Correlation	47%	43%	10%

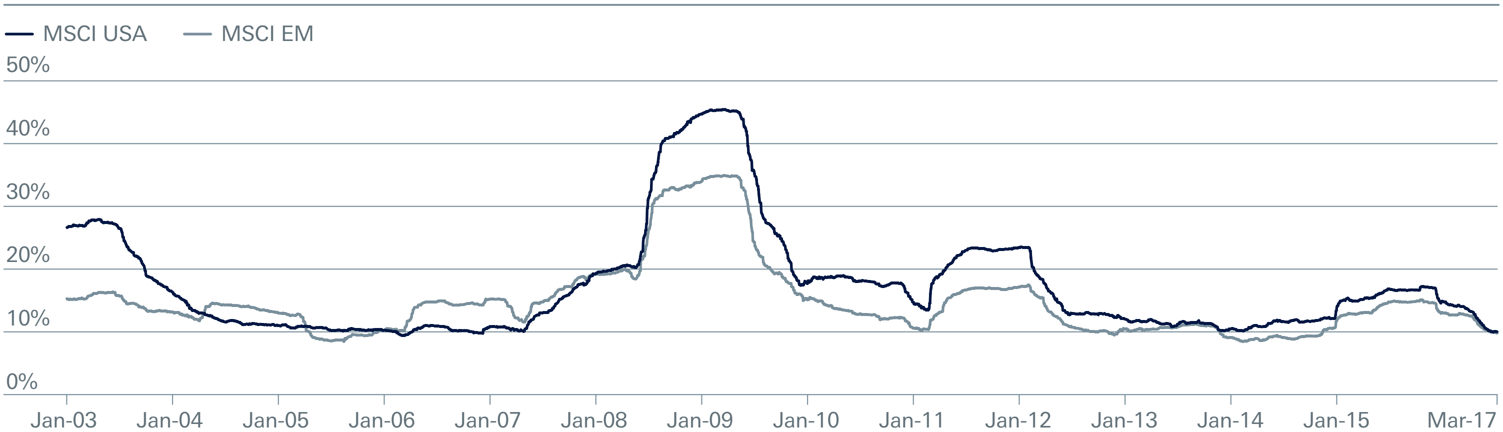
Source: DeAM, Morningstar as of 6/16. Hypothetical example: does not represent a particular investment.

It's interesting to note that, in every case, optimization suggests that the highest permitted allocation to emerging markets is taken. This is in accordance with our long-held belief that an allocation to these less developed economies is very desirable because of their tendency to be less correlated with other equity markets and their potential for higher growth. Note too that the suggested allocations between the US and international equities are not that far from the numbers for global market cap, and that they are reasonably consistent across methods. Finally, it's interesting that, even when one uses correlations that are considerably higher than those from the table in Figure 7, the model still suggests a significant allocation to international equities. (For this last analysis, all the correlations were raised by around 0.30 respectively to reflect a trend of generally higher equity market correlation in recent years).

What's to be done with emerging markets?

From 1994's Tequila crisis in Mexico, through the Asian Contagion crisis in 1997, to 1998's Russian Flu crisis, it may seem as though the emerging markets have a nasty habit of pulling the rug out from under the feet of unsuspecting investors. However, that intuition can, at times, be at odds with the facts. Though individual emerging markets can exhibit high volatility, their generally low correlations to one another result in an aggregate market that is less risky than any single component. This results in an index that has less standalone risk than many investors might realize and, because of its low correlation to the U.S., represents a very powerful diversification tool.

Figure 9: The rolling one year standard deviation of MSCI EM (local) and MSCI U.S. (1/2/02–3/31/17)



Source: Morningstar. Data 1/2/02–3/31/17. **Past performance does not guarantee future results.**

Fact one—Broad EM equities have generally been less risky than U.S. Equities

If you polled a number of investors and asked them what proportion of the time since 2002 the emerging market index had been less risky than the US, we doubt very much that many would have gotten the right answer. It turns out that, since the beginning of 2002 the one year rolling standard deviation of returns for EM has been lower than that of the MSCI U.S. index over 75% of the time.

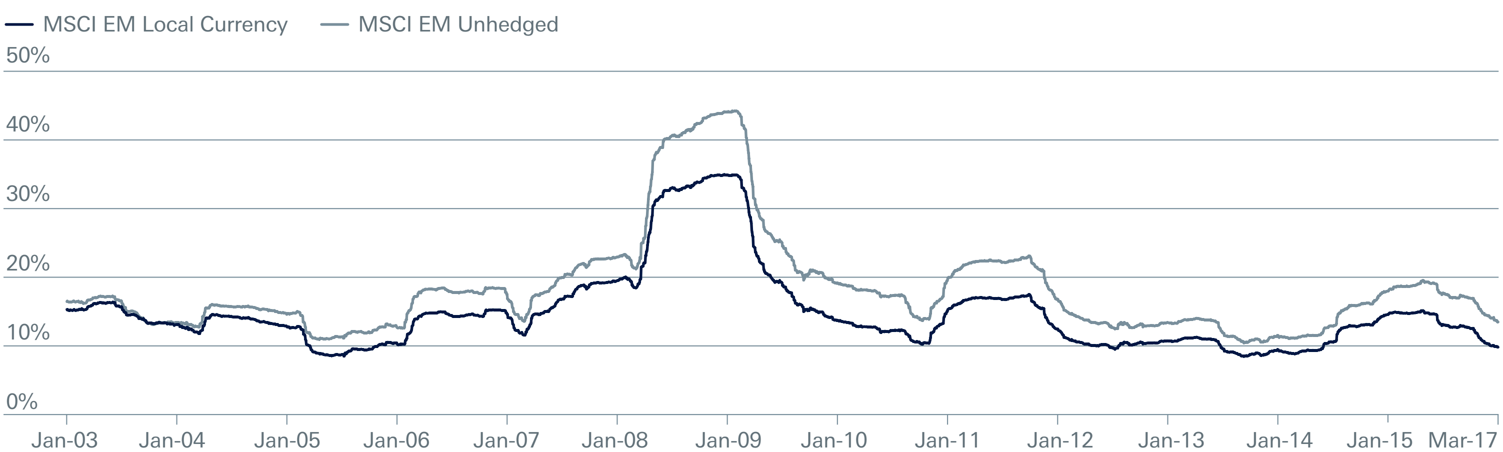
The data is shown below in Figure 9 and we think the explanation comes when one considers the uncorrelated nature of the markets included in the index. Unlike in Europe, for example, the countries that make up the emerging markets baskets in the well-known indexes are particularly geographically and economically diverse. It's therefore easy to understand why the equity markets of Mexico and South Africa, for example, would not necessarily trade in lockstep.

Fact two—Hedging helps to reduce volatility

In previous papers we have highlighted the persistent volatility reduction that results when hedging out currency in international equity markets. Most of that work has focused on the developed markets of the MSCI EAFE index but the same result is true of emerging markets. Indeed, typically one sees a higher correlation between the emerging currency basket of the EM index and its constituent equity markets than one does with the developed currency basket and its equities.

Figure 10 demonstrates this graphically. One can see that in 99% of past one-year rolling periods, the volatility of the emerging market index in local currency terms (which effectively isolated equity returns) was lower than for the corresponding unhedged index (which contains identical stock, sector and country weights, but has the currency exposure as well).

Figure 10: The rolling one-year standard deviation of MSCI EM local (proxy for hedged), and un-hedged (1/2/02–3/31/17)



Source: Morningstar. Data 1/2/03–3/31/17. **Past performance does not guarantee future results.**

Figure 11: Correlation Matrix for Major Emerging Markets and MSCI U.S. (1/02–3/17)

	Brazil	China	India	Korea	Mexico	Russia	S.Africa	Taiwan	MSCI EM
Brazil	1.00	0.33	0.28	0.24	0.66	0.41	0.39	0.20	0.45
China	0.33	1.00	0.51	0.59	0.30	0.39	0.42	0.55	0.66
India	0.28	0.51	1.00	0.39	0.28	0.35	0.38	0.35	0.49
Korea	0.24	0.59	0.39	1.00	0.25	0.31	0.36	0.63	0.53
Mexico	0.66	0.30	0.28	0.25	1.00	0.40	0.41	0.19	0.40
Russia	0.41	0.39	0.35	0.31	0.40	1.00	0.51	0.28	0.50
S.Africa	0.39	0.42	0.38	0.36	0.41	0.51	1.00	0.35	0.49
Taiwan	0.20	0.55	0.35	0.63	0.19	0.28	0.35	1.00	0.51
MSCI EM	0.45	0.66	0.49	0.53	0.40	0.50	0.49	0.51	1.00

Source: DeAM, Morningstar as of 3/17. Data 1/2/02–3/31/17. **Past performance does not guarantee future results.**

Fact three—Individual risk is dampened in the index

Despite the individual—and often quite high–risk that we alluded to at the top of this post, a powerful effect takes place when disparate emerging markets are pooled together into an index—volatility comes down. The key lies in the relatively low correlation between some of these countries (see Figure 11). For example, the average correlation between the Brazilian stock market and those of the other seven largest components of the MSCI EM index (China, India, Korea, Mexico, Russia, S. Africa and Taiwan) is 0.35. After all, why should we expect Mexico and Taiwan to move in tandem when they are so different, both economically and geographically?

Adding it all up

This all points to the conclusion that looking beyond our borders to international equities can have benefits for U.S.-based investors.

Definitions
Correlation is a measure of how closely two variables move together over time. A 1.0 equals perfect correlation. A –1.0 equals total negative correlation. Tequila crisis A currency crisis sparked by the Mexican government's sudden devaluation of the peso against the U.S. dollar in December 1994. Asian Contagion A currency crisis that spread throughout Asia and threatened global markets which began with the collapse of the Thai baht when the government had insufficient foreign currency reserves to support its peg to the U.S. dollar in 1997. Russian Flu A financial crisis in Russia that quickly followed the Asian currency crisis, which resulted in the Russian government and the Russian central bank abandoning the fixed exchange rate between the ruble and foreign currencies and defaulting on its debt. Developed Market (DM) refers to a country with a highly industrialized economy and capital markets. Emerging Market (EM) refers to a country with an economy consisting of low to middle per capita income. The MSCI EAFE US Dollar Hedged Index is designed to provide exposure to equity securities in developed international stock markets, while at the same time mitigating exposure to fluctuations between the value of the U.S. dollar and selected non-U.S. currencies. The MSCI U.S. Index tracks the performance of the U.S. equity portion of the MSCI AC World Index, which tracks the performance of 46 countries comprising 23 developed and 23 emerging markets. The MSCI All Country World Index (ACWI) tracks the performance of 23 developed and 23 emerging markets. The MSCI Emerging Markets Local Index tracks the performance of stocks in select emerging markets, while at the same time mitigating exposure to fluctuations between the value of the U.S. dollar and selected non-U.S. currencies.