

Why Emerging Market Equities Belong in a Diversified Investment Portfolio

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In the Winter 2002 edition of this journal, William E. Fender [2002] told readers “Why International Equities Belong in a Diversified Investment Portfolio.” The foresight exhibited in the paper provided outstanding investment advice. In this article, we turn our attention to the benefits of adding emerging market equities to a globally diversified investment portfolio. Fender recommended allocation by diversified investors into the Morgan Stanley Capital International (MSCI) EAFE (Europe/Australasia/Far East) Index, attempting to influence investors who had reservations based on the recent poor performance, at that time, of the EAFE equity markets and the strong U.S. dollar. In this article, historical and forward-looking evidence provides important justification for investing in emerging market equities, which performed well in the two years following Fender’s article. The risk and return profile of a diversified global portfolio is investigated. The analysis includes an examination of semi-deviation and downside beta, both useful measures of risk for emerging market equities.¹

HOW HAVE RETURNS COMPARED?

U.S. equities, represented by the MSCI USA Index returns, provided an annualized average 19.6% return for 2003 and 2004. In contrast, the MSCI EAFE Index produced a 29.6% annualized return in U.S. dollar terms

and a 16.9% return in local terms. The MSCI Emerging Markets (EM) Index produced a 40.3% annualized return in dollar terms and a 30.7% return in local terms. Clearly, investors with substantial foreign allocations were rewarded by those investments. A large component of the outstanding foreign return came from the weakening U.S. dollar, which lost about 23% of its value against the EAFE currencies and 15% against the EM currencies over 2003 and 2004. Despite expectations of continued dollar weakness in the coming years, the currency impact in these recent results is only one justification for foreign investment.

DIVERSIFICATION

An important justification for including international equities in an investor’s portfolio is the diversification effect. The risk-reduction benefit is enhanced by the potential for a low correlation of the U.S. equity return with both foreign equity returns and foreign currency returns. Investors who do not hedge foreign currency exposure receive a return from the combined effect of the equity and currency returns.

Investors may expect considerably higher correlations between the developed markets of the U.S. and EAFE; however, correlations between the U.S., EAFE, and EM returns have been similar recently, averaging just below 60% over the 1988–2004 period (Exhibit 1).

EXHIBIT 1

Return Correlations for U.S., EAFE, and Emerging Market Equities

	US / EAFE	US / EM	EAFE / EM
1988–2004	59.52%	58.12%	57.03%
Minimum	23.96%	27.99%	26.03%
<i>60-month Period</i>	<i>05/92 – 04/97</i>	<i>01/92 – 12/96</i>	<i>03/91 – 02/96</i>
Maximum	85.23%	78.61%	81.60%
<i>60-month Period</i>	<i>10/99 – 09/04</i>	<i>08/98 – 07/03</i>	<i>12/99 – 11/04</i>

Sixty-month rolling correlations indicate a trend toward higher correlations across all three pairings, with each pair having its lowest correlation in 60-month periods ending in 1996 or 1997, and the highest correlations in 60-month periods ending in 2003 or 2004. For an investor to achieve comparable diversification in periods of high correlations, it is necessary to expand the investment portfolio. With the trend toward higher correlations among country-level returns, investors should consider adding emerging markets to their portfolios.

STANDARD DEVIATION, BETA, SEMIDEVIATION, AND DOWNSIDE BETA

Next, the benefit of holding emerging market equities in a globally diversified portfolio is examined. The risk and return trade-off of adding emerging market equities is analyzed to determine if investors are justified in including them in their portfolios. Risk measures including standard deviation, semideviation, beta, and downside beta are considered. The MSCI World Index is used as the developed market index, representing the U.S., Canada, and the EAFE countries. Using this index is like assuming the view of a U.S. investor who has chosen to incorporate the EAFE countries and Canada into a globally diversified portfolio, following from Fender's suggested strategy in 2002.

Modern portfolio theory assumes that investors will seek higher expected returns and/or lower standard deviation of returns. The Capital Asset Pricing Model (CAPM) established beta as the measure of market risk of individual assets held in a diversified portfolio and implied

that investors should receive positive returns for assuming CAPM beta risk. Growing concern about the CAPM has been fueled by research in behavioral finance and other results challenging the supremacy of CAPM beta.

In the effort to accommodate different levels of investor risk aversion, Sortino and Price [1994] apply a semivariance version of the Sharpe utility function. Estrada [2002] develops the downside CAPM (D-CAPM), which is established under a mean-semivariance behavior assumption as opposed to the CAPM mean-variance behavior assumption. Estrada [2000], and Harvey [2000] provide evidence of the superior ability of semideviation to explain the cross section of emerging market returns. Estrada [2003] investigates an expected utility function that uses semideviation as the risk measure. A good approximation to expected utility maximization, it clearly outperforms the mean-variance behavioral assumptions.

RISK/RETURN TRADE-OFF FOR EMERGING MARKETS

Kim and Singal [1997] examine whether the realized returns from emerging market investments are sufficient to compensate investors for the risk assumed. In a CAPM framework, they conclude that for U.S. investors, the reward of diversifying into emerging market equities justifies the risk. Building on their idea, we assume the perspective of an investor who holds a globally diversified developed-market portfolio, represented by the MSCI World (WD) Index. To find the required return needed to compensate an investor for including an additional market in the portfolio, the CAPM is applied:

$$E(R_N) = R_f + \beta_N (E(R_{WD}) - R_f) \quad (1)$$

Where R denotes the returns, β_N is the beta coefficient between the developed-market and emerging-market returns, N is for the (newly considered) emerging market stocks, and f is the risk-free investment.² A market should only be added to an investor's portfolio if the left-hand side is greater than the right-hand side of Equation (1).

The D-CAPM can be applied like the CAPM in Equation (1), with the resulting relationships in Equation (2):

$$E(R_N) = R_f + \beta_{dN} (E(R_{WD}) - R_f) \quad (2)$$

Here, β_{dN} is the downside beta. For the D-CAPM, a market should only be added to an investor's portfolio if the left-hand side is greater than the right-hand side of Equation (2).

The downside beta presents a higher standard as it is considerably higher than the CAPM beta for most EM countries. The results given in Exhibit 2 reveal that investing in the emerging market index would have provided a significantly higher return (1.27% per month) over investing in the developed market index (0.775% per month). This higher return was accompanied by greater risk, as evidenced by a standard deviation of 6.7% versus 4.16% for the developed markets. The standard deviation for each emerging market was higher than for the broadly diversified WD index. Concerns about the CAPM are highlighted by many betas below the market beta of 1.0 and the EM beta of 1.02. Finding "average" betas when the total risk of the investment is high may result from market segmentation.

The Sharpe ratio for the EM index (0.1282) is well above the Sharpe ratio for the WD index (0.087), but only five of the individual emerging markets have higher Sharpe ratios.³ This result indicates that while the EM index provided a reward-to-variability payoff superior to

EXHIBIT 2

Monthly Return Statistics and Portfolio Inclusion Decision

Market	Mean	Standard Deviation	Beta	Sharpe Ratio	σ_N/σ_{EM}	CAPM Required Return with WD Benchmark Return of		Include? vs. Benchmark of	
						.775%	1%	.775%	1%
WD	.775%	4.16%		.087		.775%	1%	.775%	1%
EM	1.27%	6.7%	1.02	.1282		.781%	1.01%	Yes	Yes
Argentina	2.66%	17.15%	.548	.1312	2.56	.611%	.734%	Yes	Yes
Brazil	2.89%	16.6%	1.49	.1495	2.48	.952%	1.29%	Yes	Yes
Chile	1.79%	7.35%	.627	.1875	1.10	.639%	.780%	Yes	Yes
Indonesia	1.79%	16.06%	.844	.0859	2.40	.718%	.908%	Yes	Yes
Jordan	.64%	4.63%	.153	.0495	0.69	.468%	.502%	Yes	Yes
S. Korea	1.11%	11.82%	1.22	.0592	1.76	.853%	1.13%	Yes	No
Malaysia	.984%	9.36%	.879	.0611	1.40	.731%	.929%	Yes	Yes
Mexico	2.27%	9.76%	1.06	.1907	1.46	.797%	1.04%	Yes	Yes
Philippines	.753%	9.86%	.906	.0346	1.47	.741%	.945%	Yes	No
Taiwan	1.18%	11.69%	.849	.0653	1.74	.720%	.911%	Yes	Yes
Thailand	1.21%	12.06%	1.26	.0659	1.80	.870%	1.15%	Yes	Yes
Turkey	2.49%	18.32%	1.20	.1137	2.73	.849%	1.12%	Yes	Yes

the WD index, most individual emerging market countries did not meet this standard. It is important to note that this metric evaluates each market in isolation, not as a component of the EM index portfolio. Most countries had standard deviations considerably higher than the EM index. Thus, low correlation among some of the emerging markets significantly reduced the risk in emerging market investing.

To investigate the benefit of including each of these emerging markets into a diversified portfolio, Equation (1) is applied. The returns realized by investment in these markets are compared against the required return based on a CAPM model using two different benchmarks. The first benchmark is the realized monthly return of 0.775% on the WD market index over 1988–2004. This standard is correct in historical perspective, using the past returns of the WD index as the benchmark for the past returns of each EM. To up the ante, we also apply a benchmark

of a 1% monthly return, which approximates the long-run monthly average return on the U.S. stock market.

The CAPM standard indicates that all 12 of the emerging markets should be included in a diversified global portfolio, with their realized returns exceeding the required returns based on their betas and the WD realized returns (0.775% monthly). By the more stringent 1% monthly return benchmark for the WD returns, 10 of 12 emerging markets are indicated as beneficial holdings in a diversified global portfolio. The message is clear: *globally diversified investors should include an EM index fund or a diversified portfolio of emerging market equities.* One may assert that to have any opportunity of obtaining an optimal global equity portfolio, investors must include emerging markets.

Exhibit 3 shows the semideviation (σ_d), downside beta, and reward-to-semideviation (R/SD) ratio for the same markets shown in Exhibit 2.⁴ The results for

EXHIBIT 3 Monthly Return Statistics and Portfolio Inclusion Decision

Market	Mean	Semi-Deviation	Downside Beta	R/SD Ratio	σ_{dN}/σ_{dEM}	D-CAPM Required Return with WD Benchmark Return of		Include? vs. Benchmark of	
						.775%	1%	.775%	1%
WD	.775%	3.09%		.1175		.775%	1%	.775%	1%
EM	1.27%	5.05%	1.25	.1700		.865%	1.15%	Yes	Yes
Argentina	2.66%	9.87%	1.59	.2279	1.95	.989%	1.65%	Yes	Yes
Brazil	2.89%	11.18%	2.22	.2219	2.21	1.22%	1.72%	Yes	Yes
Chile	1.79%	5.12%	.949	.2689	1.01	.757%	.970%	Yes	Yes
Indonesia	1.79%	9.50%	1.48	.1454	1.88	.948%	1.28%	Yes	Yes
Jordan	.64%	3.17%	.358	.0722	0.63	.542%	.623%	Yes	Yes
S. Korea	1.11%	7.35%	1.31	.0951	1.46	.887%	1.18%	Yes	No
Malaysia	.984%	6.38%	1.17	.0896	1.26	.835%	1.10%	Yes	No
Mexico	2.27%	7.16%	1.39	.2599	1.42	.915%	1.23%	Yes	Yes
Philippines	.753%	6.58%	1.24	.0518	1.30	.864%	1.14%	No	No
Taiwan	1.18%	7.69%	1.44	.0993	1.52	.935%	1.26%	Yes	No
Thailand	1.21%	8.33%	1.58	.0955	1.65	.985%	1.34%	Yes	No
Turkey	2.49%	11.68%	2.04	.1784	2.31	1.15%	1.61%	Yes	Yes

semideviation mirror those of standard deviation, with the diversified WD index exhibiting the lowest downside risk. For every emerging market, the ratio of the semideviation of the country return and the EM index return is lower than the ratio of the standard deviations of each, indicating that the risk-reducing diversification effect on downside risk is less significant than the diversification effect on portfolio standard deviation. This result may be explained by higher correlations in volatile periods for international equity markets, documented by Odier and Solnik [1993]. The R/SD ratio for the EM index (0.1700) is well above the R/SD ratio for the WD index (0.1175). Six of the emerging markets have higher R/SD ratios, with four (Argentina, Brazil, Chile, and Mexico) approaching levels indicating twice the reward per unit of downside risk compared to the WD index.

Concerns about the CAPM beta are addressed by applying the D-CAPM. The high downside betas point to the ability of this market risk measure to capture a more realistic level of risk. The downside betas for two countries (Brazil and Turkey) exceed 2.0 and only two (for Chile and Jordan) fall below 1.0. Applying Equation (2), it is shown that with a benchmark return of 0.775% monthly, eleven of the twelve emerging markets and the EM index pass the test for inclusion into a diversified global portfolio. Applying the higher 1% monthly return standard, seven of the twelve emerging markets and the EM index should be included in an investor's portfolio.

Closer examination shows that investment into emerging market equities must be done with a clear understanding that the regional differences in equity performance can be profound. All five markets that fail to meet the toughest standard for portfolio inclusion (South Korea, Malaysia, Philippines, Taiwan, and Thailand) are in Asia. Despite the periods of extreme risk in emerging market investing, significant rewards to EM investing still resulted. In raw returns, all but the Philippines delivered higher returns than the WD market index. The real news is that emerging market investing still proved beneficial even for investors with exposure to the Asian stock markets, despite the volatile and only marginally superior returns from that region.

Investment professionals often argue that actively managed funds can provide superior protection in periods of high risk for equity investing. This argument counters the growing influence of index investing. The risk of including EM equities into a portfolio may call for professional management or broader diversification. At a minimum,

investors looking at EM investing should take heed of the diversification benefits of an EM index fund. Those investors seeking even more impressive returns by focusing on specific countries should be prepared to closely monitor the various country allocations as dramatic swings in share prices are commonplace.

EFFICIENT FRONTIER ALLOCATIONS

We now assume that an investor will choose to mitigate some of the risk of emerging market investing by utilizing a broad EM index. The focus in Exhibit 4 is on monthly rebalanced equity portfolios with the developed-world and emerging-market indexes. Over the seventeen-year history of returns, there is evidence that the inclusion of the emerging market equities provides additional return potential, but without significant risk-reduction benefits. The highest standard deviation and semideviation are found for the 100% EM portfolio and the lowest values are found for the 100% WD portfolio. The least risk, in terms of minimizing loss, is with the 100% WD portfolio which has a worst-case 13.3% loss. Higher returns and higher risk are associated with portfolios that have higher allocations to emerging market equities. The benefit of diversifying into emerging market equities is not significant enough to reduce the volatility of a globally diversified portfolio.

Is the additional risk properly rewarded with increased return? Examining the Sharpe ratio and the reward-to-semideviation ratio, a positive reward for the additional risk is clearly indicated. The highest Sharpe ratio (0.1284) occurs at an allocation of 15% to developed markets and 85% to emerging markets. The highest reward-to-semideviation ratios are at allocations approaching 100% in the emerging markets.

Although it is unlikely that many investors are willing to take the risk of holding a 100% EM portfolio, the clear message from the Sharpe ratio and the R/SD ratio is that *any allocation to emerging markets is superior to none*. In constructing a complete asset portfolio, some investors may choose to offset the higher EM risk by including additional fixed-income assets to their portfolios or increasing their allocation to risk-free assets.

RISK PREMIUMS AND VALUATIONS

The general consensus is that equity returns in the United States will fall far short of the double-digit levels experienced in the 1980s and 1990s. As investors attempt

EXHIBIT 4

Return Statistics for Monthly Rebalanced Portfolios

WD/EM	Monthly Return	Std. Deviation	Semi-Deviation	Min	Max	Sharpe Ratio	R/SD Ratio
% / %							
100/0	.775%	4.16%	3.09%	-13.3%	11.3%	.0873	.1175
95/5	.800%	4.17%	3.12%	-14.1%	11.1%	.0930	.1244
85/15	.849%	4.24%	3.21%	-15.7%	10.6%	.1031	.1365
75/25	.900%	4.37%	3.33%	-17.2%	10.7%	.1113	.1464
65/35	.948%	4.56%	3.48%	-18.8%	11.2%	.1176	.1541
55/45	.998%	4.80%	3.67%	-20.3%	11.8%	.1221	.1598
45/55	1.05%	5.08%	3.88%	-21.9%	12.3%	.1252	.1638
35/65	1.10%	5.40%	4.11%	-23.5%	13.1%	.1270	.1666
25/75	1.15%	5.74%	4.36%	-25.0%	14.8%	.1280	.1684
15/85	1.20%	6.11%	4.63%	-26.6%	16.5%	.1284	.1695
5/95	1.25%	6.50%	4.91%	-28.1%	18.1%	.1283	.1700
0/100	1.27%	6.70%	5.05%	-28.9%	18.8%	.1282	.1700

to allocate funds to traditionally higher return investments, the emerging markets are likely candidates.

Much of the sizable historical return premium on emerging market investments can be attributed to risk premiums that are more prominent for the emerging market equities. Political risk, exchange-rate risk, and liquidity risk are some of the risks that require a premium and contribute to market segmentation. Based on some valuation ratios, it appears that the rewards from bearing these risks are sustainable moving forward.

The emerging markets traditionally carry lower price-to-earnings (PE) and price-to-cash flow (PCF) ratios than the U.S. and EAFE market benchmarks, reflecting a risk premium. At the beginning of 2005, the PE ratios for the iShares MSCI Emerging Markets (EEM), iShares S&P 1500 (ISI), and iShares MSCI EAFE (EFA) index funds were 11.2, 16.81, and 14.30, respectively. The differential represents a discount of about 33% for the emerging markets relative to the U.S. market and about 22% relative to the EAFE index. The PCF ratios for EEM, ISI, and EFA funds were 3.64, 7.49, and 5.04, respectively, representing discounts of about 50% and 28% for the emerging markets.

What does the future hold for the pricing discount and risk premium in returns for emerging market equities? Bekaert, Harvey, and Lundblad [2005] show that the long, difficult task of structural reform in many emerging economies is beginning to produce tangible results. Many

economic and political risks that have constrained equity values in emerging markets are disappearing. The structural reforms are helping to reduce market segmentation, which will further align PE and PCF ratios worldwide. If the 33% price discount in PE ratios for the emerging markets versus the U.S. market is eliminated over a 20-year period, emerging market investments should provide about 1.5% in additional annual return as a result of that process.

Economic fundamentals support this opportunity. Many investors are surprised to learn that in 2004, emerging markets provided over 45% of world GDP, yet still constitute less than 10% of world equity capitalization. Continued market liberalization may contribute to an important reduction in this imbalance. Significantly, GDP growth in emerging markets provided about 60% of world GDP growth in the years 2002 to 2004. Forecasts from the International Monetary Fund predict that this growth trend will continue.

CURRENCY DIVERSIFICATION

The currency exposure of U.S. investors in EAFE is dominated by the euro and the Japanese yen. Appreciation of those two currencies against the dollar has been significant over the past several years, with the euro reaching its all-time high against the dollar near the end of 2004. Both currencies appreciated over the 6-, 5-, 4-, 3-, 2- and

1-year periods through January 1, 2005. Although many experts predict continued dollar weakness in the coming years, the cyclical nature and lack of predictability in currency movements should make investors cautious in attempting to gain from the predicted dollar decline. Thus, broader currency diversification through emerging market equity investment could prove beneficial.

A continued dollar decline would benefit U.S. investors making foreign investments because the foreign currency return supplements the equity return. If the dollar were to strengthen in the future, emerging market equities may be better positioned to benefit than the developed foreign markets. Recent production capacity growth in emerging markets could accelerate emerging market exports (in conjunction with increasing import demand from the U.S.) with the growing production cost advantage that weaker emerging market currencies would afford.

CONCLUSION

The decision to expand an investor's portfolio into a historically risky segment, like emerging market equities, is often quite difficult. Historical evidence, including analysis of downside risk, provides ample proof that emerging market equities have provided returns sufficient to compensate for their risk. In addition, valuation metrics, structural reforms, and currency expectations point to potentially outstanding performance from the emerging markets in the coming years. For investors without the time or resources to closely follow the numerous emerging markets, investing in a broad emerging-market index fund can provide significant return opportunities, without the country-specific risks. In summary, diversified investment portfolios should contain both developed international and emerging market equities.

ENDNOTES

¹Downside standard deviation, semistandard deviation, and below-mean semideviation are alternative terms that have been used to indicate semideviation.

²The one-month eurodollar rate at the beginning of each month is used as the risk-free rate. For this monthly return analysis, the published annualized rate is divided by 12 to obtain a monthly rate.

³The Sharpe ratio is the average excess return/standard deviation of return.

⁴Reward-to-semideviation (R/SD) is the average excess return/semideviation of return. Reward-to-semivariability (R/SV) and reward-to-semistandard deviation are alternative terms used to indicate reward-to-semideviation.

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