Emerging Markets: Opportunities and Risks

by

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1. Description of Markets

2. Risks and Expected Returns

3. Predictability and Dynamic Strategies.
There are three features that make emerging markets attractive.

- Very high average returns.

- Low correlation with developed markets.

- High degree of predictability of returns.

Best to view emerging countries as start-up companies.

→ High returns accompanied by high risk.

Critical to consider emerging markets within the context of a diversified international portfolio.

→ I.e. you don’t invest in a single emerging market just as you don’t invest in a single start-up company.
<table>
<thead>
<tr>
<th>Are listed stocks freely available to foreign investors?</th>
<th>Repatriations of income</th>
<th>Repatriations of capital</th>
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</thead>
<tbody>
<tr>
<td><strong>Free entry</strong></td>
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<tr>
<td>Argentina</td>
<td>Free</td>
<td>Free</td>
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<td>Brazil</td>
<td>Free</td>
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<td>Colombia</td>
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<td>Jordan</td>
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<td>Malaysia</td>
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<td>Pakistan</td>
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<td>Portugal</td>
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<td>Free</td>
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<tr>
<td>Turkey</td>
<td>Free</td>
<td>Free</td>
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<tr>
<td><strong>Relatively free entry</strong></td>
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<tr>
<td>Chile</td>
<td>Free</td>
<td>After 1 year</td>
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<tr>
<td>Greece</td>
<td>Some restrictions</td>
<td>Some restrictions</td>
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<td>Indonesia</td>
<td>Some restrictions</td>
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<tr>
<td>Mexico</td>
<td>Free</td>
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<tr>
<td>Thailand</td>
<td>Free</td>
<td>Free</td>
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<tr>
<td>Venezuela</td>
<td>Some restrictions</td>
<td>Some restrictions</td>
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<tr>
<td><strong>Special classes of shares</strong></td>
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<tr>
<td>Korea</td>
<td>Free</td>
<td>Free</td>
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<tr>
<td>Philippines</td>
<td>Free</td>
<td>Free</td>
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<tr>
<td>Zimbabwe</td>
<td>Restricted</td>
<td>Restricted</td>
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<tr>
<td><strong>Authorized investors only</strong></td>
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<tr>
<td>India</td>
<td>Some restrictions</td>
<td>Some restrictions</td>
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<tr>
<td>Taiwan</td>
<td>Free</td>
<td>Free</td>
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<tr>
<td><strong>Closed</strong></td>
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<tr>
<td>Nigeria</td>
<td>Some restrictions</td>
<td>Some restrictions</td>
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</table>
1. Description of Markets

- Data on portfolios of active stocks within a country provided by the International Finance Corporation of the World Bank.

- Alternative indices also tracked by Morgan Stanley Capital International.

- Returns calculated in both U.S. dollars and local currency terms.

- For some countries, currency fluctuations are an important determinant of the variance of the local returns.
- Markets small but active.

- Capitalization of emerging markets is smaller than their contribution to world GDP.

- Market size grows as standard of living increases.

**Market Size and the Economy**

![Market Capitalization, 1991 and Gross Domestic Product, 1990](chart)

- Emerging markets: $648 billion (4%)
- Developed markets: $10,800 billion (94%)

- Emerging markets: $250 billion (12%)
- Developed markets: $16,200 billion (87%)

**Equity Markets and GNP**

![Equity Markets and GNP Chart](chart)

- Market Cap/GNP vs. Per capita GNP in 1990 (U.S. $)
Market size

- Many markets are larger than some smaller developed countries’ markets.
Trading activity

- Turnover rates exceed rates in developed countries in a number of emerging markets.
Average returns

- Average returns are much higher than developed markets.

Some countries not available from 1978
Volatility

- Volatilities are much higher than developed markets.
Correlations

- Correlations with developed markets small
Correlations

- Correlations among emerging markets is small.

![Average Cross-Correlations of Emerging Market Equities](Average_Cross-Correlations_of_Emerging_Market_Equities.png)
Can we explain why volatility is different from country to country?

For example, does higher concentration imply higher volatility:

The concentration factor (CF) is defined as

$$CF = \sqrt{\frac{N}{N-1} \sum_{i=1}^{N} (w_i - 1/N)^2}$$  \hspace{1cm} (1)

where:

→ $N$ is the number of firms,
→ $w_i$ is the weight of asset $i$ in total capitalization.

- If each firm had equal weights ($1/N$), then the concentration factor would equal zero.

- So a larger concentration factor means more inequality across firm size.

- ACF for the U.S. is 0.08. However, for emerging markets ACF is often above 0.20.
1. Description of Markets

- Number of companies in index.

**Standard Deviation of Equity Returns and Log Number of Companies in Index**

- Turnover

**Standard Deviation of Equity Returns and Log of U.S. $ Trading Volume**
1. Description of Markets

- **Asset Concentration**

**Standard Deviation of Equity Returns and Asset Concentration Factor**

![Graph showing standard deviation of equity returns and asset concentration factor.](image)

**Standard Deviation of Equity Returns and Sector Concentration Factor**

- **Sector Concentration**

![Graph showing standard deviation of equity returns and sector concentration factor.](image)
- Average cross-correlation of stocks in index.

**Standard Deviation of Equity Returns and Mean Cross Correlation of Index Stocks**

U.S. $ Returns, 1986.03-1992.06
Obvious gains to “diversification” if emerging markets included in portfolio programs.

- U.S. portfolio unconditionally dominated by a portfolio of U.S. and emerging stocks.

- With all countries in the program, the volatility of the minimum variance portfolio is cut almost in half!

- Results are not sensitive to short-selling constraints.
Out-of-sample performance also impressive.

<table>
<thead>
<tr>
<th>Performance</th>
<th>Strategy 1 All countries</th>
<th>Strategy 2 Developed only</th>
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<tbody>
<tr>
<td>Annual profit</td>
<td>17.4%</td>
<td>16.6%</td>
</tr>
<tr>
<td>Annual std. dev.</td>
<td>11.4%</td>
<td>15.8%</td>
</tr>
</tbody>
</table>
Interestingly, traditional measures of risk, like “beta,” are small for emerging markets.

- Implies that beta constraints on portfolio optimizers will not be binding.
Significant predictability found for emerging markets.

- Predictability higher than found in developed markets