Global Linkages
An Asset Management Perspective

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Some Questions

- Why do we care about stock prices (short run vs. long run)?
- What are the factors that determine stock prices?
- What do these factors tell us about “integration”?  
  - How should we think about integration?
- How are these factors related to fundamentals?
- What is on some plan sponsor’s research horizon?
Why do we care about stock prices?

- **Strategic investment allocations are critical determinants of investment performance.**

- **Asset managers may advise clients that a globally diversified portfolio is optimal; home biased allocations are riskier.**

- **Asset managers may advise clients that investment allocations need to be viewed in the broad context of diversifying across expected labor income and expected return on financial capital.**

- **The “active” vs. “passive” dimension of investment management is becoming blurred.**
What are the factors that determine stock prices?

◆ What best explains the cross sectional dispersion of security prices?
  - Country factors
  - Global Industry factors

◆ For “developed” equity markets, industry factors “explain” more of the cross sectional dispersion than country factors.

◆ Are there some caveats?
  - Is it a large cap effect? No
  - Is is a “tech” effect? No
  - Does this hold for Emerging Markets? No
Performance of Industry Tilts Relative to Country Tilts

Full Universe—Developed Markets

Ratio of Average Monthly Returns

UBS
Global Asset Management
Performance of Industry Tilts Relative to Country Tilts

Large Cap Universe – Developed Markets

Ratio of Average Monthly Returns

0.0 0.5 1.0 1.5 2.0 2.5 3.0
1988 89 90 91 92 93 94 95 96 97 98 99 00 01 02 03
Performance of Industry Tilts Relative to Country Tilts

Small Cap Universe – Developed Markets

Ratio of Average Monthly Returns

0.0
0.5
1.0
1.5
2.0
2.5
3.0

1988 89 90 91 92 93 94 95 96 97 98 99 00 01 02 2003

UBS
Global Asset Management
Performance of Industry Tilts Relative to Country Tilts

Developed Markets Ex-Media, Technology, and Telecoms

Ratio of Average Monthly Returns

1988 89 90 91 92 93 94 95 96 97 98 99 00 01 02 2003

UBS Global Asset Management
Performance of Industry Tilts Relative to Country Tilts

Full Universe - Emerging Markets

Ratio of Average Monthly Returns

1992 ' 93 ' 94 ' 95 ' 96 ' 97 ' 98 ' 99 ' 00 ' 01 ' 02 2003

UBS
Global Asset Management
Economic Integration

- We often think of integration at the country level.
- What about “integration” at the global industry level?
- What – who is leading the integration process?
  - Are certain segments of the Emerging Markets world more integrated than others?
## Economic Integration: A Micro Perspective

### The Correlation Across Emerging and Developed Industry Factors Has Risen

<table>
<thead>
<tr>
<th>Industry</th>
<th>June '95 to Nov '02</th>
<th>Jan '88 to June '95</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td>0.46</td>
<td>0.07</td>
</tr>
<tr>
<td>Materials</td>
<td>0.61</td>
<td>0.31</td>
</tr>
<tr>
<td>Capital Goods</td>
<td>0.39</td>
<td>-0.02</td>
</tr>
<tr>
<td>Commercial Services &amp; Supplies</td>
<td>-0.07</td>
<td>-0.09</td>
</tr>
<tr>
<td>Transportation</td>
<td>0.59</td>
<td>0.26</td>
</tr>
<tr>
<td>Automobiles &amp; Components</td>
<td>0.21</td>
<td>-0.08</td>
</tr>
<tr>
<td>Consumer Durable &amp; Apparel</td>
<td>-0.30</td>
<td>-0.02</td>
</tr>
<tr>
<td>Hotels Restaurants &amp; Leisure</td>
<td>0.17</td>
<td>0.05</td>
</tr>
<tr>
<td>Media</td>
<td>0.29</td>
<td>0.20</td>
</tr>
<tr>
<td>Retailing</td>
<td>0.09</td>
<td>0.18</td>
</tr>
<tr>
<td>Food &amp; Drug Retailing</td>
<td>0.53</td>
<td>0.22</td>
</tr>
<tr>
<td>Food Beverage &amp; Tobacco</td>
<td>0.57</td>
<td>0.02</td>
</tr>
<tr>
<td>Household &amp; Personal Products</td>
<td>0.36</td>
<td>-0.02</td>
</tr>
<tr>
<td>Health Care Equipment &amp; Services</td>
<td>0.31</td>
<td>0.04</td>
</tr>
<tr>
<td>Pharmaceuticals &amp; Biotechnology</td>
<td>0.44</td>
<td>0.06</td>
</tr>
<tr>
<td>Banks</td>
<td>0.47</td>
<td>0.13</td>
</tr>
<tr>
<td>Diversified Financials</td>
<td>0.33</td>
<td>0.02</td>
</tr>
<tr>
<td>Insurance</td>
<td>0.51</td>
<td>-0.09</td>
</tr>
<tr>
<td>Real Estate</td>
<td>0.46</td>
<td>-0.12</td>
</tr>
<tr>
<td>Software &amp; Services</td>
<td>0.56</td>
<td>0.16</td>
</tr>
<tr>
<td>Technology Hardware &amp; Equipment</td>
<td>0.51</td>
<td>0.16</td>
</tr>
<tr>
<td>Telecommunication Services</td>
<td>0.41</td>
<td>0.15</td>
</tr>
<tr>
<td>Utilities</td>
<td>-0.16</td>
<td>0.01</td>
</tr>
<tr>
<td>Average (across industries)</td>
<td>0.34</td>
<td>0.07</td>
</tr>
</tbody>
</table>
Economic Integration: A Micro Perspective

Some EMK Companies Appear More Integrated Than Others

Average correlation of returns with developed market industry factors

- Full Sample: 0.27
- "Leaders": 0.43
Relating Stock Prices to Economic Fundamentals

- Is the capital stock of corporations becoming more global?
- Are the foreign sales activities of firms related to their risk exposures?
- How should we think about risk factors in a global context?
- Are the fundamental drivers of stock price performance increasingly driven by global industry factors?
The Capital Stock of Industries Is Becoming More Global

Cross Border M&A

<table>
<thead>
<tr>
<th>Year Period</th>
<th>USD Billions</th>
</tr>
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<tbody>
<tr>
<td>1989-1993</td>
<td>101</td>
</tr>
<tr>
<td>1994-1998</td>
<td>489</td>
</tr>
<tr>
<td>1999-2002</td>
<td>1346</td>
</tr>
</tbody>
</table>

- **Similar Product Lines**: Dark Blue
- **Across Product Lines**: Orange
Europe Sector Exposure 1999

Slope = 0.91377, T = 11.8744
# Style Factor Returns (Capitalization Weighted)

**December 31, 1985 – June 30, 2001**

<table>
<thead>
<tr>
<th></th>
<th>Global Relative</th>
<th>Industry Relative</th>
<th>Country Relative</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Value</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annualized Monthly Return</td>
<td>1.84</td>
<td>4.29</td>
<td>2.73</td>
</tr>
<tr>
<td><strong>Size</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Annualized Monthly Return</td>
<td>-5.23</td>
<td>-1.06</td>
<td>-0.29</td>
</tr>
</tbody>
</table>

**Note:**
- **Value**: Long stocks with high dividend yield, short stocks with low dividend yield
- **Size**: Long large cap stocks, short low cap stocks
Decomposition Of Information Signals

- Country
- Global Industry
- Local Industry
Emerging markets are not a “separate” asset class.
- We must consider that certain companies are “integrated”

How do we build better benchmarks for performance?
- A Traditional CAPM Approach?
- A Production CAPM Approach?
- An Investment Growth Approach?
Jeff Diebler and Bruno Solnik. “Global Pricing of Equity.” Financial Analysts Journal (July/August 2001)


Stefano Cavaglia, David Cho and Brian Singer. “Risks of Sector Rotation Strategies.” Journal of Portfolio Management (Summer 2001)