U.S. Investors’
Emerging Market Equity Portfolios:
A Security-Level Analysis

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What is unique about our study?

- The data on US investors’ security-level holdings of non-US stock.
- Enables us to ask questions about behavior of one important group of international investors.

So the following disclaimer is important!
Disclaimer

**Usual Disclaimer:** The views in this paper are solely the responsibility of the authors and should not be interpreted as reflecting the views of the FRB or the IMF.

**Special Disclaimer:** The statistical analysis of security-level data on U.S. investors’ holdings was conducted at the Federal Reserve under arrangements that maintained legal confidentiality requirements.
Motivation

- What determines US investors’ equity portfolios in nine emerging markets?
- Are their investment patterns different across regions?
- Have the portfolios changed over time?
Highlights of Results

- US investors’ to 9 EMs tend to invest in:
  - Large firms
  - Firms with less foreign ownership restrictions
  - Firms cross-listed on U. S. exchanges

- Cross-listing effect is very large.
  - No home bias against the cross-listed stocks.
Security-Level Holdings Data:
Benchmark Surveys of US Portfolio Investment Abroad

- **March 1994 and Dec 1997** benchmark surveys
- Surveys conducted jointly by Treasury and Fed
  - Reporting to the survey **mandatory** under authority of International Investment and Trade in Services Survey Act
  - 1997 survey part of CPIS
- **Security-level data**
  - **Confidential**, with penalties for unauthorized disclosure, but may be used by certain employees for analytical/statistical purposes
  - 370,000 (equity) records in 1997 survey
  - Commercial database used to aid in cross-checks
  - Data **checked** by FRB/Treasury staff for 18 months
Holdings Data (cont.)

- Data come primarily from large custodians
  - US custodians and end investors
    - with >$20m in foreign securities held or owned required to report
    - who used US custodian report only amount and custodian name
    - who used foreign custodian or kept custody submit detailed reports
  - private investors not surveyed but holdings captured if through US mutual or pension funds or entrusted to US custodian
    - survey will miss small investors who invest directly in foreign market and use foreign custodian
- Most comprehensive data on US holdings of foreign securities available
**Warning!**

- Unique survey data on holdings.
- However, we can’t control when the surveys take place.
- The second survey occurred in December 1997.
  - Equity prices had been falling sharply in Asia and started their descent in Latin America.
  - In an attempt to spark inflows, some countries sharply reduced capital controls.
Equity prices were falling sharply at the end of 1997...
...and capital controls were being lowered...

Edison and Warnock (forthcoming), “A Simple Measure of the Intensity of Capital Controls”
...more so in some countries.

Foreign Ownership Restrictions: Korea

Edison and Warnock (forthcoming)
Modeling U.S. Positions

- Dependent Variable defined as the weight of the security in US portfolios relative to weight of the security in world mkt cap (minus 1)

\[ Y_i = \frac{w_{iUS}}{w_{im}} - 1 = \frac{(H_{iUS}^US)}{(MktCap^i / MktCap^m)} - 1 \]

- \( y=0 \) security’s weight in world market and US investors’ portfolios identical
- \( y>0 \) security overweighted in US portfolios
- \( y<0 \) security underweighted in US portfolios

- vast majority of firms have \( y<0 \); this is the home bias
Explanatory Variables

- **Liquidity**
  - size, turnover

- **Prudence**
  - dividend yield +, returns volatility (-)

- **Historical Returns**
  - beta +, Sharpe ratio +, 1-year momentum, book-to-market

- **Financial Health**
  - return on assets +, current ratio +, leverage (-)

- **Barriers to International Investment**
  - investable weight +, % of shares closely held (-), U.S. Listed (on an exchange) +, Level I ADR

### Characteristics of the Average Firm (Tables 3a-3c)

<table>
<thead>
<tr>
<th></th>
<th>Total (724)</th>
<th>LA (200)</th>
<th>Asia (524)</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Owned</td>
<td>9.0%</td>
<td>15.9%</td>
<td>6.4%</td>
</tr>
<tr>
<td>Size ($bil)</td>
<td>963 +</td>
<td>1909 +</td>
<td>602 +</td>
</tr>
<tr>
<td>Turnover</td>
<td>1.09 -</td>
<td>0.45 +</td>
<td>1.33 -</td>
</tr>
<tr>
<td>DivYld (%)</td>
<td>2.2 +</td>
<td>3.8</td>
<td>1.5</td>
</tr>
<tr>
<td>Volatility</td>
<td>296</td>
<td>248</td>
<td>319 +</td>
</tr>
<tr>
<td>Sharpe</td>
<td>-0.48 +</td>
<td>-0.33</td>
<td>-0.55</td>
</tr>
<tr>
<td>Momentum (%)</td>
<td>-7.5 +</td>
<td>0.8 +</td>
<td>-11.0 +</td>
</tr>
</tbody>
</table>

+ (-) indicates significant bivariate relationship with U.S. holdings
### Characteristics of the Average Firm (cont.)

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>LA</th>
<th>Asia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Book-to-market</td>
<td>1.5</td>
<td>0.8</td>
<td>1.8</td>
</tr>
<tr>
<td>Leverage (%)</td>
<td>38.9</td>
<td>-</td>
<td>28.8</td>
</tr>
<tr>
<td>Current Ratio</td>
<td>1.46</td>
<td>+</td>
<td>1.75</td>
</tr>
<tr>
<td>ROA (%)</td>
<td>3</td>
<td>+</td>
<td>8</td>
</tr>
<tr>
<td>Closely Held(%)</td>
<td>43</td>
<td>+</td>
<td>56</td>
</tr>
<tr>
<td>Investability</td>
<td>0.62</td>
<td>+</td>
<td>0.80</td>
</tr>
<tr>
<td>Beta</td>
<td>1.21</td>
<td>+</td>
<td>1.28</td>
</tr>
</tbody>
</table>

+ (-) indicates significant relationship with U.S. holdings
**Summary of Multivariate Results (Tables 4a-4c):**

<table>
<thead>
<tr>
<th></th>
<th>All countries</th>
<th>LA</th>
<th>Asia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>0.028***</td>
<td>0.025**</td>
<td>0.030***</td>
</tr>
<tr>
<td></td>
<td>(4.79)</td>
<td>(2.37)</td>
<td>(4.34)</td>
</tr>
<tr>
<td>Turnover</td>
<td>x</td>
<td>0.059</td>
<td>x</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1.49)</td>
<td></td>
</tr>
<tr>
<td>Investability</td>
<td>0.151***</td>
<td>0.134**</td>
<td>0.154***</td>
</tr>
<tr>
<td></td>
<td>(4.12)</td>
<td>(2.19)</td>
<td>(3.90)</td>
</tr>
<tr>
<td>U.S. Listed</td>
<td>0.301***</td>
<td>0.303***</td>
<td>0.241**</td>
</tr>
<tr>
<td></td>
<td>(7.07)</td>
<td>(6.27)</td>
<td>(2.20)</td>
</tr>
<tr>
<td>Level I ADR</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>NOBS</td>
<td>627</td>
<td>181</td>
<td>446</td>
</tr>
<tr>
<td>R²</td>
<td>0.45</td>
<td>0.46</td>
<td>0.27</td>
</tr>
</tbody>
</table>
Have US investors’ portfolios changed over time?

Evidence from 1994 survey shows:

- Size still important but mainly in Asia
- Preference for growth stocks (low book-to-mkt) in LA
- U.S. Listed still very important with nearly identical coefficients.

Portfolio reallocations from 1994 to 1997

- Investors moved toward firms that improved their financial health (lower leverage, higher current ratio)
More on the cross-listing effect

- As a percent of market capitalization, size of cross-listing effect is large
  - 7%: U.S. investors’ holdings of non cross-listed stocks
  - 27%: U.S. investors’ holdings of stocks cross-listed on US exchanges
  - 48%: ICAPM predicted holdings

- As a percent of the available float (excluding shares held by insiders)
  - 56%: U.S. investors’ holdings of stocks cross-listed on US exchanges
  - 58%: float-adjusted ICAPM prediction (from DPSW (forth))
  - No home bias here.

- Controlling for other factors:
  - typical coefficient on U.S. Listed in Tables 4a-4c is about 0.28, which translates into **14 percentage points** in holdings
Implications

- In our earlier work we found a sharp temporary increase in equity inflows in the month of the cross-listing.
  - Together this implies that the listing is a discrete increase in demand.
  - Since U.S. investors bring these stocks into their portfolios at full weights, little need for further inflows (explains our earlier finding of little follow through).
- The demand shift should increase price (Foerster and Karolyi, 1999; Miller, 1999) and valuation (Doidge, Karolyi, and Stulz, forth)
- Note that we find no such effect for Level I ADRs, which trade in the US and have lower transaction costs. Suggests that improved information (owing to US investor protection regulations) might be behind the cross-listing effect.
Conclusion

- Whilst the results are still preliminary, using this unique data we have shown a large impact of cross-border listings on US investors’ portfolio.

- This finding has important implications for financial integration and EM equity flows.