Asset Managers and Price Efficiency

Marcin Kacperczyk (Imperial College)

SUERF/UniCredit Foundation Workshop
February 19, 2020
Motivation

- Common narrative: passive investment improves individual investment decisions (low cost, limited agency, good monitors, etc.)
- Passive investors affect asset prices through their trading decisions (strategic incentives) and the equilibrium impact on other investors
- Are the capital allocations informationally efficient?
- Important for welfare and market efficiency
- Important for firms’ cost of equity
- Evidence from my two studies
Research Design

- **Theory** (Kacperczyk, Nosal, Sundaresan, 2019):
  - Consider a general equilibrium model with active and passive sector
  - The joint role of market power and information
  - Look at price informativeness as a function of market size

- **Empirics** (Kacperczyk, Sundaresan, Wang, 2020):
  - Study the importance of institutional investors (active and passive) for price efficiency globally
  - Emphasize the informational frictions in markets
Price Informativeness

**Price Informativeness** \( PI = \frac{\text{Cov}(p_i, \varepsilon_i)}{\sigma_p} \)

\[
PI_i = \frac{\sigma_i \sum_j \frac{\lambda_j \beta_{1ji}}{\lambda_j \beta_{1ji} \frac{\alpha_{ji} - 1}{\alpha_{ji}}}}{\sqrt{\left( \sum_j \frac{\lambda_j \beta_{1ji}}{\lambda_j \beta_{1ji} \frac{\alpha_{ji} - 1}{\alpha_{ji}}} \right)^2 + \frac{\sigma_{\hat{x_i}}^2}{\left( \sum_j \frac{\lambda_j \beta_{1ji}}{\lambda_j \beta_{1ji}} \right)^2 \sigma_i^2} + \sum_j \frac{\lambda_j^2 \beta_{1ji}^2}{\left( \sum_j \frac{\lambda_j \beta_{1ji}}{\lambda_j \beta_{1ji}} \right)^2 \frac{\alpha_{ji} - 1}{\alpha_{ji}^2}}}}
\]

1. \( \sum_j \frac{\lambda_j \beta_{1ji}}{\lambda_j \beta_{1ji} \frac{\alpha_{ji} - 1}{\alpha_{ji}}} \): covariance, weighted by relative pass-through

2. \( \lambda_j \beta_{1ji} = \frac{\partial \lambda_j q_{ji}}{\partial s_{ji}} \): information pass-through to quantities (hump-shaped)

3. \( \sum_j \frac{\lambda_j^2 \beta_{1ji}^2}{\left( \sum_j \frac{\lambda_j \beta_{1ji}}{\lambda_j \beta_{1ji}} \right)^2 \frac{\alpha_{ji} - 1}{\alpha_{ji}^2}} \): learning-weighted HHI
Numerical Experiment: Ownership

- Varying industry size \((1 - \lambda_0)\)
  - Hump-shaped PI curve

**Price Informativeness**

![Graph](image)
Results: Theory

Passive vs Active

- Shift AUM from active to passive
  - Less active ownership $\Rightarrow$ less active trade $\Rightarrow$ PI $\downarrow$
  - Less active ownership $\Rightarrow$ less spreading of learning $\Rightarrow$ pass-through effects and covariance effects potentially nonmonotonic response

- Heterogeneity in PI response for individual assets
  - As smaller active oligopolists specialize in learning
  - Some assets’ PI drop (lower vol), others’ increase (higher vol)
Results: Theory

Numerical Experiment: Passive vs Active

- Increase AUM of passive sector (Farboodi, Matray, Veldkamp (2017))
Results: Theory

Numerical Experiment: Passive vs Active

- Increase AUM of passive sector (Farboodi, Matray, Veldkamp (2017))
Empirical Setting

- Examine price informativeness (same definition as in theory) by:
  - Domestic vs. foreign investors
  - Active vs. passive investors
  - Stage of country’s development
- Use MSCI index inclusion as a shock to relative ownership
## Results: Overall Sample

<table>
<thead>
<tr>
<th>Classification 1</th>
<th>Classification 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIVE=Active Managed / PASSIVE=ETF&amp;Index Funds</td>
<td>ACTIVE=Transient&amp;Dedicated / PASSIVE=Quasi-Indexers&amp;Index Funds</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>$\log(M/A) \times FOR.ACTIVE_{i,t}$</th>
<th>$E_{i,t+1}/A_{i,t}$</th>
<th>$E_{i,t+3}/A_{i,t}$</th>
<th>$E_{i,t+1}/A_{i,t}$</th>
<th>$E_{i,t+3}/A_{i,t}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.074***</td>
<td>0.065***</td>
<td>0.068***</td>
<td>0.066***</td>
<td></td>
</tr>
<tr>
<td>(0.012)</td>
<td>(0.014)</td>
<td>(0.012)</td>
<td>(0.017)</td>
<td></td>
</tr>
<tr>
<td>$\log(M/A) \times FOR.PASSIVE_{i,t}$</td>
<td>-0.076</td>
<td>-0.142***</td>
<td>0.020</td>
<td></td>
</tr>
<tr>
<td>(0.083)</td>
<td></td>
<td>(0.032)</td>
<td>(0.048)</td>
<td></td>
</tr>
<tr>
<td>$\log(M/A) \times DOM.ACTIVE_{i,t}$</td>
<td>0.037***</td>
<td>0.051***</td>
<td>0.033***</td>
<td></td>
</tr>
<tr>
<td>(0.009)</td>
<td></td>
<td>(0.006)</td>
<td>(0.010)</td>
<td></td>
</tr>
<tr>
<td>$\log(M/A) \times DOM.PASSIVE_{i,t}$</td>
<td>0.045</td>
<td>0.094***</td>
<td>0.058***</td>
<td></td>
</tr>
<tr>
<td>(0.033)</td>
<td></td>
<td>(0.013)</td>
<td>(0.019)</td>
<td></td>
</tr>
<tr>
<td>$\log(M/A)_{i,t}$</td>
<td>-0.024***</td>
<td>0.009***</td>
<td>-0.024***</td>
<td></td>
</tr>
<tr>
<td>(0.003)</td>
<td></td>
<td>(0.002)</td>
<td>(0.003)</td>
<td></td>
</tr>
<tr>
<td>FOR.ACTIVE_{i,t}</td>
<td>-0.026*</td>
<td>-0.078***</td>
<td>-0.020</td>
<td></td>
</tr>
<tr>
<td>(0.013)</td>
<td></td>
<td>(0.016)</td>
<td>(0.018)</td>
<td></td>
</tr>
<tr>
<td>FOR.PASSIVE_{i,t}</td>
<td>-0.362***</td>
<td>-0.070**</td>
<td>-0.201***</td>
<td></td>
</tr>
<tr>
<td>(0.092)</td>
<td></td>
<td>(0.030)</td>
<td>(0.041)</td>
<td></td>
</tr>
<tr>
<td>DOM.ACTIVE_{i,t}</td>
<td>-0.003</td>
<td>0.008</td>
<td>-0.003</td>
<td></td>
</tr>
<tr>
<td>(0.013)</td>
<td></td>
<td>(0.012)</td>
<td>(0.014)</td>
<td></td>
</tr>
<tr>
<td>DOM.PASSIVE_{i,t}</td>
<td>-0.019</td>
<td>-0.009</td>
<td>-0.005</td>
<td></td>
</tr>
<tr>
<td>(0.044)</td>
<td></td>
<td>(0.023)</td>
<td>(0.027)</td>
<td></td>
</tr>
</tbody>
</table>

Controls: Yes
Observations: 186,714 165,344 186,714 165,344
$R^2$: 0.706 0.621 0.706 0.621
Results: MSCI Shock (Foreign Ownership)

What happens when a stock gets included in the MSCI?
Results: MSCI Shock (Active Ownership)

Panel A: MSCI Shock

Foreign Active Ownership

Foreign Passive Ownership

-95% CI  🔴 Treated-Control

-95% CI  🔴 Treated-Control
Results: MSCI Shock (Informativeness)
Results: Long-Term Performance

Figure 7: Long-term Performance of Institutional Investors
Conclusions

- Institutional investors improve price informativeness…
- … but the effect is largely coming through active investors
- Restricting the participation of active investors induces an entry of passive investors and lowers price informativeness
- The effect depends on the origin of capital and the assets in which the capital is allocated