Informed Trading in Business Groups, Ownership Concentration, and Market Liquidity

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Institutional Investors

- Institutional investors have become the majority owners of most large corporations

- Key players for financial development: provide funding for firms, enhance market liquidity (Stulz 1999a,b), and promote better corporate governance (Aggarwal et al., 2011)

- In developing countries, research focus on foreign investors - little is known about the role of domestic institutional investors
In Developing Countries

- Business groups dominate private sector activity, i.e. collections of publicly traded companies with significant amount of common ownership

- Money management institutions (e.g. Pension funds, investment companies) typically have ties to these business groups

- Potential frictions:
  a. Enhance managerial entrenchment
  b. Access to private information in affiliated firms

- Ownership concentration and business group ties exacerbate information asymmetries, discouraging investment and affecting liquidity
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Motivation
Information Flows in Business Groups
Ownership Concentration and Liquidity
Conclusions

This paper

Two questions:

- Do institutional investors have private information on affiliated firms?
- Does institutional ownership concentration affect stock market liquidity?
Data

- Monthly portfolio holdings of Colombian pension funds in domestic stocks from 2004 to 2014
- Quarterly balance sheet and ownership information of listed firms
- Stock is affiliated to a Pension Fund Administrator (PFA) if they share the same principal shareholder
- 30 stocks are match to a PFA: 41% of mcap and 49% trading volume
Related Literature


- Information flows within financial conglomerates: Massa and Rehman, (2008) for U.S.

- Negative correlation between ownership concentration and market liquidity. Is it information or less trading activity? Brockman et al. (2009)
# Fund Managers and Group Affiliation

<table>
<thead>
<tr>
<th>PFA</th>
<th>AUM (U$ billions)</th>
<th>Flows (% of AUM)</th>
<th>No. of Stocks</th>
<th>Stock with affiliation</th>
<th>No. Obs.</th>
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</thead>
<tbody>
<tr>
<td>Ing</td>
<td>6.67</td>
<td>2.35</td>
<td>43</td>
<td>2</td>
<td>1977</td>
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<tr>
<td>Colfondos</td>
<td>8.00</td>
<td>2.22</td>
<td>40</td>
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<tr>
<td>Horizonte</td>
<td>9.27</td>
<td>2.02</td>
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<tr>
<td>Porvenir</td>
<td>19.30</td>
<td>2.32</td>
<td>29</td>
<td>8</td>
<td>1639</td>
</tr>
<tr>
<td>Proteccion</td>
<td>13.77</td>
<td>2.32</td>
<td>41</td>
<td>17</td>
<td>2036</td>
</tr>
<tr>
<td>Skandia</td>
<td>2.53</td>
<td>3.60</td>
<td>29</td>
<td>0</td>
<td>1461</td>
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<tr>
<td>Total</td>
<td>59.54</td>
<td>2.30</td>
<td>57</td>
<td>30</td>
<td>10704</td>
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</table>
Hypothesis 1

H1. Trades by affiliated funds should be more correlated with stock future performance than: (i) trades by non-affiliated funds in the same stock, and (ii) trades by the same fund in other similar stocks with no affiliation
Empirical Strategy

- Baseline model:

$$\Delta H_{f,s,t} = \alpha_0 + \beta_1 X_{s,t} + \beta_2 X_{s,t} \times AFFIL_{f,s,t} + \beta_3 AFFIL_{f,s,t} + \gamma CONTROLS_{f,s,t} + \epsilon_{f,s,t}$$

- $\Delta H_{f,s,t}$: Monthly change in holdings
- $X_{s,t}$: Lagged or future abnormal returns
- $AFFIL_{f,s,t}$: Affiliation dummy
## Results

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>( ARET_{t-1} )</td>
<td>0.009**</td>
<td>0.009**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.982)</td>
<td>(2.109)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>( ARET_{t+1} )</td>
<td></td>
<td>0.005</td>
<td></td>
<td>0.005</td>
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<tr>
<td></td>
<td></td>
<td>(0.954)</td>
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<tr>
<td>( ARET_{t_1} \times AFFIL )</td>
<td>0.020</td>
<td>0.021</td>
<td></td>
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<tr>
<td></td>
<td>(1.011)</td>
<td>(1.070)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>( ARET_{t+1} \times AFFIL )</td>
<td></td>
<td>0.028***</td>
<td></td>
<td>0.033**</td>
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<tr>
<td></td>
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<td>(2.601)</td>
<td></td>
<td>(2.448)</td>
</tr>
<tr>
<td>AFFIL</td>
<td>-0.108</td>
<td>-0.144</td>
<td>-0.084</td>
<td>-0.107</td>
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<tr>
<td></td>
<td>(-0.732)</td>
<td>(-0.943)</td>
<td>(-0.589)</td>
<td>(-0.734)</td>
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<tr>
<td>Size</td>
<td>0.063</td>
<td>0.069</td>
<td>0.021</td>
<td>0.027</td>
</tr>
<tr>
<td></td>
<td>(0.193)</td>
<td>(0.201)</td>
<td>(0.063)</td>
<td>(0.077)</td>
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<tr>
<td>Liquidity</td>
<td>0.118</td>
<td>0.081</td>
<td>0.116</td>
<td>0.088</td>
</tr>
<tr>
<td></td>
<td>(0.397)</td>
<td>(0.307)</td>
<td>(0.374)</td>
<td>(0.307)</td>
</tr>
<tr>
<td>( H_{t-1} )</td>
<td>-6.663**</td>
<td></td>
<td>-6.799***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(-2.370)</td>
<td></td>
<td>(-2.584)</td>
<td></td>
</tr>
<tr>
<td>CONSTANT</td>
<td>-1.506</td>
<td>-1.644</td>
<td>-0.735</td>
<td>-0.880</td>
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<td></td>
<td>(-0.259)</td>
<td>(-0.271)</td>
<td>(-0.126)</td>
<td>(-0.145)</td>
</tr>
</tbody>
</table>

|                  | Stock        | Stock        | Stock        | Stock        |
| Cluster          | Yes          | Yes          | Yes          | Yes          |
| Fixed effects    | Yes          | Yes          | Yes          | Yes          |
| \( R^2 \)       | 0.05         | 0.05         | 0.05         | 0.05         |
| No.Obs.          | 4215         | 4150         | 4215         | 4134         |
Summary: Part I

- PFA are momentum traders on non-affiliated stocks
- Trades on affiliated firms anticipate future returns
- Evidence is robust to controlling for: fractional ownership, relative ownership, top investors
Mergers and Acquisitions

1. Proteccion merged with ING (December 2012)

2. Porvenir acquired Horizonte (December 2013)

- Significant increase in stock ownership concentration:
  \[ FCAP_{s,k} = (H_{s,f1} \ast H_{s,f2})^{1/2} \]

- Exogenous to corporate decisions which are correlated to liquidity: stock buybacks, dividends, investment
Hypothesis 2

H2. Stocks with large common ownership between target and acquiring PFAs are more likely to exhibit lower trading activity and higher transaction costs
Motivation Information Flows in Business Groups Ownership Concentration and Liquidity Conclusions

Diff-in-diff Strategy

- Estimate stock changes in ownership concentration due to M&A activity
- Ownership concentration increases for stocks with high FCAP (treatment), little change for stocks with low FCAP (control)
- Compare changes in stock liquidity (trading activity and bid-ask spreads) between different group of stocks

First Stage:

\[ \text{CONC}_{s,t} = \alpha_s + \gamma_t + \sum_{k=1,2} \beta_k d_k + \sum_{k=1,2} \lambda_k d_k \times \text{FCAP}_{s,k} + \epsilon_{s,t} \]

Second Stage:

\[ \text{liq}_{s,t} = \alpha_s + \gamma_t + \beta_1 \text{CONC}_{s,t} + \beta_2 \text{INS}_{s,t} + \beta_3 \text{FOREIGN}_{s,t} + X_{s,t} \phi + \epsilon_{s,t} \]
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\]

Second Stage:

\[
liq_{s,t} = \alpha_s + \gamma_t + \beta_1 CONC_{s,t} + \beta_2 INS_{s,t} + \beta_3 FOREIGN_{s,t} + X_{s,t} \phi + \varepsilon_{s,t}
\]
Treatment vs. Control

Ownership Concentration

- High FCAP
- Low FCAP

Graph showing ownership concentration over time from 2010q1 to 2015q1, with two separate lines representing High FCAP and Low FCAP.
Effects on Trading Activity

- $\ln(\text{Turnover})$

- High FCAP estimated
- High FCAP counterfactual
- Low FCAP estimated
- Low FCAP counterfactual

Graph showing the changes in $\ln(\text{Turnover})$ from 2010q1 to 2015q1 for different FCAP categories.
Summary Part II

- A 1% increase in ownership concentration implies a 4% decrease in turnover and 3.4% increase in the bid-ask spread.

- Effects are present after controlling for direct impact on trading activity by PFAs.

- Results likely driven by the perceived threat of informed trading.
Conclusions

- Substantial evidence on information flows within business groups
- PFAs M&A activity was detrimental for liquidity (questions the rationale from a regulatory standpoint)
- Business group ties and ownership concentration: Potential limits to capital market development