Capital Allocation Efficiency of Firms Outside the Business Group

by
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Discussion by
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• Key motivation as I understand it:
• Many studies compare the performance / capital allocation decisions of business-group-affiliated and non-affiliated firms.
• But we know too little about the influence that business groups exert on other firms
• Questions: Can firms without group affiliations efficiently allocate capital in industries with dominant group-affiliated firms? If not, is this due to the group-affiliated firm’s ability to mobilize capital from its internal capital market?

• Answers:
  • When in an industry, the Top-30 chaebol are strong and dominant (BSD-index high), firms outside the Top-30 chaebol (whether business group or not) allocate «less efficiently»
  • This effect exists only in the pre-1997/98 period (when the financial market was less developed in there was weaker investor protection).
### Main Result

**Dependent Variable:** Industry CAPEX Ratio

<table>
<thead>
<tr>
<th></th>
<th>Entire Period</th>
<th>Before 1997</th>
<th>After 1998</th>
<th>Before + After</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Industry Sales Growth [a]</strong></td>
<td>0.052***</td>
<td>0.050</td>
<td>0.055***</td>
<td>0.073***</td>
</tr>
<tr>
<td></td>
<td>(0.011)</td>
<td>(0.040)</td>
<td>(0.014)</td>
<td>(0.026)</td>
</tr>
<tr>
<td><strong>BSDI [b]</strong></td>
<td>-0.183</td>
<td>-0.189</td>
<td>-1.311</td>
<td>0.225</td>
</tr>
<tr>
<td></td>
<td>(1.012)</td>
<td>(2.122)</td>
<td>(1.265)</td>
<td>(1.321)</td>
</tr>
<tr>
<td><strong>Industry EBITDA Ratio [c]</strong></td>
<td>0.086*</td>
<td>0.135*</td>
<td>0.013</td>
<td>0.171**</td>
</tr>
<tr>
<td></td>
<td>(0.049)</td>
<td>(0.071)</td>
<td>(0.040)</td>
<td>(0.076)</td>
</tr>
<tr>
<td><strong>Period Dummy [d]</strong></td>
<td></td>
<td></td>
<td></td>
<td>1.629***</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.585)</td>
</tr>
<tr>
<td><strong>[a] × [b]</strong></td>
<td>-0.091**</td>
<td>-0.188**</td>
<td>-0.034</td>
<td>-0.200**</td>
</tr>
<tr>
<td></td>
<td>(0.040)</td>
<td>(0.081)</td>
<td>(0.047)</td>
<td>(0.081)</td>
</tr>
<tr>
<td><strong>[a] × [d]</strong></td>
<td></td>
<td></td>
<td></td>
<td>-0.024</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.019)</td>
</tr>
<tr>
<td><strong>[b] × [c]</strong></td>
<td>0.042</td>
<td>0.002</td>
<td>0.202</td>
<td>0.002</td>
</tr>
<tr>
<td></td>
<td>(0.143)</td>
<td>(0.187)</td>
<td>(0.203)</td>
<td>(0.232)</td>
</tr>
<tr>
<td><strong>[b] × [d]</strong></td>
<td></td>
<td></td>
<td></td>
<td>-0.378</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(2.385)</td>
</tr>
<tr>
<td><strong>[c] × [d]</strong></td>
<td></td>
<td></td>
<td></td>
<td>-0.146**</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.061)</td>
</tr>
<tr>
<td><strong>[a] × [b] × [d]</strong></td>
<td></td>
<td></td>
<td></td>
<td>0.154*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.089)</td>
</tr>
<tr>
<td><strong>[b] × [c] × [d]</strong></td>
<td></td>
<td></td>
<td></td>
<td>0.087</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.350)</td>
</tr>
<tr>
<td><strong>Constant</strong></td>
<td>-1.081*</td>
<td>-1.188</td>
<td>0.365</td>
<td>-2.007***</td>
</tr>
<tr>
<td></td>
<td>(0.549)</td>
<td>(0.962)</td>
<td>(0.228)</td>
<td>(0.709)</td>
</tr>
</tbody>
</table>

**Year & Industry FE**: Yes

**No. of Observations**: 1,029

**Within R-squared**: 0.290

**Between R-squared**: 0.144

**Within + Between R-squared**: 0.437

**Adjusted R-squared**: 0.206
This discussion

• …puts the paper in context of the literature

• …raises some (clarifying) questions with the methodological approach and offers some ideas for additional analysis
Contribution to the literature
• My reading of the literature (also based on the excellent survey by Khanna and Yafeh 2007)

• Much focus on estimating investment-growth options and investment-cash flow sensitivities for group and non-group firms

• Hoshi, Kashyap, and Scharfstein (1991) find (for Japan) that firms in keiretsu are much less sensitive to cash flow than independent firms, and equally sensitive to Tobin’s Q

• Shin and Park (1999) apply this methodology to South Korean business groups
• Chaebol firms: LOW cash-flow-investment sensitivity, but HIGH sensitivity to growth opportunities

• Non-chaebol firms: HIGH cash-flow-investment sensitivity, but LOW sensitivity to growth opportunities

• (And they argue that chaebol internal capital markets are actually inefficient, leading to too much investment by group firms with weak investment opportunities)

• Chang, Park, and Yoo 1998 also argue that large business groups engaged in overinvestments (so are they a good benchmark?)
• Here, look at external effect
• One way to understand this paper: Explaining why the Shin and Park findings occur
• Interesting addition to the literature, though I am a little unclear on where you stand regarding efficiency of chaebol activities
• Almeida and Wolfenzon (2006): Is more about the question of how groups form in the first place

• (Kim 2004 may also be relevant: risk-aversion as a rationale for business groups)

• In the present paper, groups are taken as given. The analysis focuses on the impact of power of business groups on allocation efficiency of others, as a function of time (capital market status)

• Not sure the theoretical background is so clear

• As mentioned in the paper, business-group-affiliates may be preferred over non-affiliates when borrowing from banks – that is, this is not only about the internal capital market. Plus too-big-too fail issues
Empirical design
• Argument: Elements of strength and dominance are «inseparable» (p. 12)
  • Not sure how you can then later separate them by running linear regressions (p. 28)
  • Results are driven by size of ICM, not market share
  • Good that results also hold when just using cash holdings (instead of book value of assets)
  • (My lack of knowledge: How much change is there of business group membership?)
Capital market status

- Effects identified through 1997/98 crisis
- This is a dummy variable that may or may not capture many other things
- Can we have a finer measure of the status of the financial market that varies over the years?
  - International capital flows, for example?
• Essentially all studies use Top 30 chaebols as the focus

• Following this work, you assign those firms in business group 31 and below as a non-large-business group firm

• Can you illuminate whether there is a discrete difference between group 30 and group 31? Would be nice to check robustness regarding this cutoff

• What about results for really independent firms?
• Argument p. 15: «If we used firm-level data, our results would be primarily driven by firms that may not be individually significant in the economy»

• Somewhat unusual. Tends to mix empirics with normative implications

• Not sure why the profitability regressions are on the firm level
Firm-level analysis

• Weighted least-squares firm-level results are stated to be qualitatively similar, but not reported. Wouldn’t we expect the effects to be stronger for the smallest firms? Would expect larger of the non-LBG firms to withstand the damaging effect of LBG firms in the industry more?

• How about looking at firm-level, but allowing for heterogeneity of non-LBG-firms?

• Non-affiliated firms arguably differ in the shrewdness of managers, their experience, firm governance, etc., which may affect their ability to deal with the «bullies»
- Run regressions of industry-median CapEx on industry-median past sales growth
  - Is CapEx the right metric for all industries? How about employee growth?
  - Tends to pick up firms chasing after things that have already happened? (Bad to invest a lot just before the crisis…) Can we have a forward-looking measure? (Industry development in US? Option prices?)
  - Sales growth vs. profit growth
• Paper brushes aside Tobin’s Q too quickly.

• Hoshi, Kashyap, and Scharfstein 1991 do use Tobin’s Q, arguing that «provided that the bias is the same for the two sets of firms»… p. 36

• Results in Table 11 for non-LBF firms suggest robustness.

  • (However, clarify why the BSDI variable now has such huge coefficients, and why the period dummy is so much bigger than in prior regressions.)
• CapEx, Sales Growth, EBITDA ratio: Median values in the industry

• Why is the median the right measure? For Sales growth, all firms are combined. So, this presumably measures sales growth in a small firm (of which there are many). Is this what we want? If we argue that this is representative, then why do we not like firm-level regressions?
Sample Splits

- Cash flow split: Is it possible that different industries need different levels of cash-flow to begin with?

- Tangibility split: In low-tangibility industries, do we expect firms to invest a lot in tangible assets (through capital expenditures) when sales growth is high?

- Regressions exclude 1997/98. It might be interesting to look precisely at how firms reacted to this
Smaller points

• Robustness claims (I am a pain): «We find that our key results are highly robust» vs. «qualitatively similar» results.

• You state that Table 5 results (industry-year observations) hold also with industry X year fixed effects (p. 32). How can you have such FE in this regression?

• Standard errors, footnote 11. You could consider applying (a variant of) the two-stage bootstrap procedure described in Ashraf and Galor (2013) [Stata code is available, I think]
• Interesting (and, to my knowledge, novel) take on the relevance of business groups for the overall economy

• Some clarifications / changes proposed for the empirical analysis

• Best of success with the paper!