The Life-Cycle of Dual Class Firm Valuations
by M. Cremers, B. Lauterbach, and A. Pajuste

Discussion by

Ting Xu
University of Virginia, Darden School of Business

December 12, 2018
Tel Aviv
Context

• What is the optimal allocation of control between inside and outside shareholders?

• How does this optimal allocation vary with economic variables?

• This paper
  • Control allocation mechanism: dual-class shares
  • Economic variable: firm life-cycle
Main findings

- DCF’s valuation (relative to SCF) declines over life-cycle:
  - Initial premium, subsequent discount

- Wedge (voting minus cash flow rights) increases over life-cycle.

- Heterogeneity
  - Driven mainly by DCFs with initial premium. Those with initial discount remain discounted.
  - DCF’s valuation improved post-2000 → market’s learning

- Many DCFs fail to self-correct through unification→ Sunset provisions may be desirable
Comment 1: Age or listing age?

- The paper uses listing age (years sine IPO) to define life-cycle.
- Theories on $\Delta Q_{LV}$ and $\Delta Q_{Agency}$ are about age (years since founding).

$\Delta Q_{LV}$ and $\Delta Q_{Agency}$ move with life-cycle even before IPO.
  - Value of founder declines as startups move from R&D to commercialization & growth.
  - Founder ownership declines across financing rounds.
Comment 1: Age or listing age?

- The paper uses listing age (years since IPO) to define life-cycle.
- Theories on $\Delta Q_{LV}$ and $\Delta Q_{Agency}$ are about age (years since founding).
- $\Delta Q_{LV}$ and $\Delta Q_{Agency}$ move with life-cycle even before IPO.
- Value of founder declines as startups move from R&D to commercialization & growth.
- Founder ownership declines across financing rounds.

![Founders ownership graph](image-url)
Comment 1: Age or listing age?

- The paper uses listing age (years since IPO) to define life-cycle.
- Theories on $\Delta Q_{LV}$ and $\Delta Q_{Agency}$ are about age (years since founding).
- $\Delta Q_{LV}$ and $\Delta Q_{Agency}$ move with life-cycle even before IPO.
  - Value of founder declines as startups move from R&D to commercialization & growth.
  - Founder ownership declines across financing rounds.
- Firms that went public later are more advanced in their life-cycle.
Comment 1: Age or listing age?

- This doesn’t matter if
  - only focus on within-firm variation, or
  - age at IPO is homogeneous across firms

- But there is substantial heterogeneity in when firms go public
  - Dual- vs single-class firms
  - Different industries
  - Over time
Comment 1: Age or listing age?

- This doesn't matter if only focus on firm variation, or age at IPO is homogeneous across firms.
- But there is substantial heterogeneity in when firms go public.
- Dual-vs single-class firms.
- Different industries.
- Over time.
Comment 1: Age or listing age?

• This doesn’t matter if
  • only focus on within-firm variation, or
  • age at IPO is homogeneous across firms

• But there is substantial heterogeneity in when firms go public
  • Dual- vs single-class firms
  • Different industries
  • Over time
Median age at IPO: dual-class vs single-class

- DCFs go public much earlier in recent decade
- May explain why their valuation is higher in recent years (less advanced in life-cycle)
## Age vs. listing age: matters outside of the U.S.

<table>
<thead>
<tr>
<th>Dependent variable: TOBIN_Q</th>
<th>U.S.</th>
<th>U.S.</th>
<th>Non-U.S.</th>
<th>Non-U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>MULTI_CLASS</td>
<td>0.085</td>
<td>0.138</td>
<td>-0.094*</td>
<td>0.003</td>
</tr>
<tr>
<td></td>
<td>[0.078]</td>
<td>[0.094]</td>
<td>[0.050]</td>
<td>[0.051]</td>
</tr>
<tr>
<td>MULTI_CLASS × MATURE_ListingAge</td>
<td>-0.160*</td>
<td>0.039</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[0.092]</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MULTI_CLASS × MATURE_Age</td>
<td>-0.203*</td>
<td></td>
<td>-0.125**</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[0.107]</td>
<td></td>
<td>[0.058]</td>
<td></td>
</tr>
<tr>
<td>MATURE_ListingAge</td>
<td>-0.102***</td>
<td>-0.076***</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[0.028]</td>
<td>[0.011]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MATURE_Age</td>
<td></td>
<td>-0.132***</td>
<td></td>
<td>-0.008</td>
</tr>
<tr>
<td></td>
<td></td>
<td>[0.028]</td>
<td></td>
<td>[0.013]</td>
</tr>
<tr>
<td>LN(TOTAL_ASSETS)</td>
<td>-0.032***</td>
<td>-0.032***</td>
<td>-0.016***</td>
<td>-0.021***</td>
</tr>
<tr>
<td></td>
<td>[0.010]</td>
<td>[0.010]</td>
<td>[0.005]</td>
<td>[0.004]</td>
</tr>
<tr>
<td>LEVERAGE</td>
<td>-0.261***</td>
<td>-0.254***</td>
<td>-0.478***</td>
<td>-0.468***</td>
</tr>
<tr>
<td></td>
<td>[0.091]</td>
<td>[0.092]</td>
<td>[0.040]</td>
<td>[0.040]</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>1.331***</td>
<td>1.324***</td>
<td>1.552***</td>
<td>1.569***</td>
</tr>
<tr>
<td></td>
<td>[0.114]</td>
<td>[0.114]</td>
<td>[0.151]</td>
<td>[0.152]</td>
</tr>
<tr>
<td>TANGIBILITY</td>
<td>-0.297***</td>
<td>-0.296***</td>
<td>-0.299***</td>
<td>-0.304***</td>
</tr>
<tr>
<td></td>
<td>[0.067]</td>
<td>[0.068]</td>
<td>[0.027]</td>
<td>[0.027]</td>
</tr>
<tr>
<td>SALES_GROWTH</td>
<td>0.005***</td>
<td>0.004***</td>
<td>0.001***</td>
<td>0.001***</td>
</tr>
<tr>
<td></td>
<td>[0.000]</td>
<td>[0.000]</td>
<td>[0.000]</td>
<td>[0.000]</td>
</tr>
<tr>
<td>ROA</td>
<td>0.027***</td>
<td>0.027***</td>
<td>0.035***</td>
<td>0.036***</td>
</tr>
<tr>
<td></td>
<td>[0.002]</td>
<td>[0.002]</td>
<td>[0.002]</td>
<td>[0.002]</td>
</tr>
<tr>
<td>DIVIDEND_YIELD</td>
<td>-0.006</td>
<td>-0.005</td>
<td>-0.078***</td>
<td>-0.079***</td>
</tr>
<tr>
<td></td>
<td>[0.007]</td>
<td>[0.007]</td>
<td>[0.003]</td>
<td>[0.003]</td>
</tr>
<tr>
<td>Country FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Industry-Year FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Observations</td>
<td>35,044</td>
<td>35,044</td>
<td>150,913</td>
<td>150,913</td>
</tr>
<tr>
<td>R²</td>
<td>0.216</td>
<td>0.217</td>
<td>0.265</td>
<td>0.264</td>
</tr>
</tbody>
</table>
Age vs. listing age: matters outside of the U.S.

Valuation premium by age vs listing age quintile: U.S. and non-U.S.
Age vs. listing age: matters outside of the U.S.

Valuation premium by age vs listing age quintile: U.S. and non-U.S.

- Would like to see more discussion on age vs listing age. Show robustness to using age.
Comment 2: A tale of two types of DCF?

Are there two types of dual-class firms?

- Group 1: Initial premium, subsequent discount
- Group 2: Discount throughout

Would like to know more about these two types of DCFs:
  - Is group 1 more prevalent in recent years?
  - Is group 1 tech and group 2 old family firms (tobacco, media...)?
  - Is group 1 younger than group 2 at IPO?
Are there two types of dual-class firms?

- Group 1: Initial premium, subsequent discount
- Group 2: Discount throughout

Would like to know more about these two groups of DCFs:

- Is group 1 more prevalent in recent years?
- Is group 1 tech and group 2 old family firms (tobacco, media…)?
- Is group 1 younger than group 2 at IPO?
Comment 2: A tale of two types of DCF?

• A cohort effect?

<table>
<thead>
<tr>
<th></th>
<th>All</th>
<th>1-3</th>
<th>4-5</th>
<th>6-8</th>
<th>9+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dual dummy</td>
<td>-0.012</td>
<td>0.22**</td>
<td>0.21</td>
<td>-0.15</td>
<td>-0.17*</td>
</tr>
<tr>
<td></td>
<td>(-0.18)</td>
<td>(2.08)</td>
<td>(1.60)</td>
<td>(-1.18)</td>
<td>(-1.67)</td>
</tr>
</tbody>
</table>

More tech firms here? More family firms here?

• Suggestions:
  • Use firm fixed effects
  • Separate tech and non-tech firms
  • Separate by IPO cohorts
Comment 3: Identification

• Need to match on
  • Inside ownership: DCFs typically have higher inside ownership
  • Owner type: DCFs typically are founder or family controlled

• Make sure not driven by managerial ownership or owners’ identity

• Still, could be driven by selection on unobservables
  • More likely to adopt dual-class if initial rent is high
  • Rent declines faster for these firms

• Use firm fixed effect?
Comment 4: Policy-making — not easy

- Forced sunset:
  - On Oct 24, 2018, CII petitions NYSE and NASDAQ to require sunset of dual-class shares within 7 years of IPO, citing this paper.
  - One size fits all? Is 7 years the optimal point for all firms?
    - Again, age at IPO matters
    - Should examine heterogeneity across industries

- Index exclusion:
  - FTSE, S&P 1500 will exclude firms with limited-voting shares starting July 2017. MSCI stayed put after a 10-month consultation.
  - If dual-class firms are priced correctly (examine returns!), why not let investors self-sort?
  - Adverse impact on entrepreneurs’ incentives and investor diversification – need to think about general equilibrium effect.
Additional tests:

- How does the likelihood of unification/multiplication vary with firm age?
- Examine how the valuation effect of unification/multiplication depends on firm age?
- Use IPO as a setting to test life-cycle theory? Prediction: firms more likely to adopt dual-class if going IPO at a younger age.
Summary

• Great paper with huge policy relevance (already cited by BlackRock, SEC, CII, CFA)

• Nicely executed
  • Identification can be improved further

• Would like to see more discussion on
  • age vs listing age
  • potentially two distinct types of dual-class firm
”The advantage of a dual-class share structure is that it protects entrepreneurial management from the demands of shareholders. The disadvantage of a dual-class share structure is that it protects entrepreneurial management from the demands of shareholders.”

-- Financial Times, July 18, 2011

Thank you!