Private Company Valuations by Mutual Funds

by Vikas Agarwal, Brad Barber, Si Cheng, Allaudeen Hameed, and Ayako Yasuda

Discussed by Clemens Sialm

University of Texas at Austin, NBER, and ABFER

May 2019
Growth in Unicorn Investment by Mutual Funds

(b) Aggregate mutual fund holdings of unicorns

Source: Chernenko, Lerner, and Zeng (2018)
# Who are the Unicorn Hunters?

## TOP UNICORN HUNTERS: INVESTORS WITH THE MOST $1B+ PORTFOLIO COMPANIES

The top 10 unicorn investors and their 10 highest-valued portfolio companies (as of 5/5/2019).

<table>
<thead>
<tr>
<th>Rank</th>
<th>Investor</th>
<th>Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tiger Global Management</td>
<td>Uber, Juul, Airbnb, Stripe, Grab, Palantir, Coinbase, Instacart, Ola, Ola, +32 unicorns</td>
</tr>
<tr>
<td>2</td>
<td>Tencent Holdings</td>
<td>滴滴, 微信, GoJek, 美团, 满帮集团, 邮票, LinkedIn, BYD, Ubtech, Ola, +30 unicorns</td>
</tr>
<tr>
<td>3</td>
<td>SoftBank Group</td>
<td>Bytedance, Uber, 滴滴, WeWork, Grab, Meituan, Coupang, Slack, DoorDash, +28 unicorns</td>
</tr>
<tr>
<td>4</td>
<td>Sequoia Capital China</td>
<td>Bytedance, Airbnb, Bitmain, DJI, 美团, 满帮集团, Easyhome, Zoom, Yodel, +25 unicorns</td>
</tr>
<tr>
<td>5</td>
<td>Sequoia Capital</td>
<td>Uber, Airbnb, Stripe, Coupang, Instacart, DoorDash, Robinhood, +23 unicorns</td>
</tr>
<tr>
<td>6</td>
<td>Kleiner Perkins</td>
<td>Uber, Airbnb, Stripe, DJI, Instacart, DoorDash, Slack, Magic Leap, Robinhood, +20 unicorns</td>
</tr>
<tr>
<td>7</td>
<td>DST Global</td>
<td>Airbnb, Stripe, GoJek, 美团, Slack, DoorDash, Robinhood, Ola, +19 unicorns</td>
</tr>
<tr>
<td>8</td>
<td>Fidelity Investments</td>
<td>Uber, WeWork, Airbnb, SpaceX, Coupang, Magic Leap, Intercom, Compass, +18 unicorns</td>
</tr>
<tr>
<td>8</td>
<td>Andreessen Horowitz</td>
<td>Airbnb, Stripe, Coinbase, Instacart, Slack, Tanium, Magic Leap, Robinhood, Fanatics, OpenDoor, +18 unicorns</td>
</tr>
<tr>
<td>10</td>
<td>Wellington Management</td>
<td>Uber, WeWork, Airbnb, Coupang, Coinbase, Slack, Tanium, Magic Leap, Compass, +16 unicorns</td>
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</table>

Source: CBInsights (May 2019)
### Largest Mutual Fund Investors in Uber (May 2019)

<table>
<thead>
<tr>
<th>Fund</th>
<th>Ticker</th>
<th>Percentage of Assets</th>
<th>Market Value ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Putnam Capital Spectrum</td>
<td>PVSYX</td>
<td>6.56</td>
<td>59,458,823</td>
</tr>
<tr>
<td>Putnam Equity Spectrum</td>
<td>PYSYX</td>
<td>5.67</td>
<td>26,088,682</td>
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<tr>
<td>Fidelity Series Blue Chip Growth</td>
<td>FSBDX</td>
<td>2.10</td>
<td>126,847,112</td>
</tr>
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<td>Hartford Growth Opportunities HLS</td>
<td>HGOYX</td>
<td>2.05</td>
<td>101,700,389</td>
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<tr>
<td>Hartford Growth Opportunities</td>
<td>HAGOX</td>
<td>2.04</td>
<td>33,030,961</td>
</tr>
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<td>John Hancock Funds II Mid-Cap Stocks</td>
<td>JHMSX</td>
<td>2.01</td>
<td>35,154,700</td>
</tr>
<tr>
<td>BlackRock Focus Growth</td>
<td>MAFOX</td>
<td>1.62</td>
<td>3,007,667</td>
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<td>BlackRock Global Allocation</td>
<td>MALOX</td>
<td>0.99</td>
<td>283,864,062</td>
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<tr>
<td>Fidelity Blue Chip Growth</td>
<td>FBGRX</td>
<td>0.97</td>
<td>254,074,825</td>
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<tr>
<td>Morgan Stanley Institutional Growth</td>
<td>MSEQX</td>
<td>0.96</td>
<td>51,237,929</td>
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</tbody>
</table>

Source: Morningstar
Fund with Largest Uber Position Around IPO Date

**Putnam Capital Spectrum Fund Class Y** PVSYX | ★

<table>
<thead>
<tr>
<th>NAV</th>
<th>1-Day Total Return</th>
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<tr>
<td>$ 29.12</td>
<td><strong>-1.25%</strong></td>
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USD | NAV as of 23 May 2019 | 1-Day Return as of 23 May 2019

<table>
<thead>
<tr>
<th>TTM Yield</th>
<th>Load</th>
<th>Total Assets</th>
<th>Expenses</th>
<th>Fee Level</th>
<th>Turnover</th>
<th>Status</th>
<th>Min. Inv.</th>
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</thead>
<tbody>
<tr>
<td>0.00%</td>
<td>None</td>
<td>$ 788.0 mil</td>
<td>0.41%</td>
<td>Low</td>
<td>2%</td>
<td>Open</td>
<td>$ --</td>
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**30-Day SEC Yield** --

**Category**
Allocation--70% to 85% Equity

**Investment Style**
Large Blend

**Credit Quality/Interest Rate Sensitivity**
--

Source: Morningstar

Discussed by Clemens Sialm
Private Company Valuations by Mutual Funds
A Mismatch Between Mutual Funds and Unicorns?

- Mutual funds investments in unicorns “democratize” investments in promising private companies to the general investment public.
  - These investments were previously reserved for high-net worth investors in venture capital, private equity, and hedge funds.

Discussed by Clemens Sialm

Private Company Valuations by Mutual Funds
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- Mutual funds investments in unicorns “democratize” investments in promising private companies to the general investment public.
  - These investments were previously reserved for high-net worth investors in venture capital, private equity, and hedge funds.
- Mutual funds might not be the “natural” investors in unicorns for various reasons:
  - Open-end mutual funds allow investors to redeem their shares on a daily basis, which is at odds with the illiquid nature of private firms (issue of Putnam Funds).
  - Daily pricing of private companies is problematic.
  - Mutual funds might not have the expertise to evaluate these firms.
  - Mutual funds might not have sufficient resources to add value to the private firms.
The authors study various aspects of the valuations of private companies by mutual funds:

- Do valuations differ across funds and across fund families?
- What is the performance of the private company holdings?
- Are the profitable trading opportunities due to stale prices?
- Do fund investors trade to take advantage of stale prices?
- Do fund families strategically adjust prices of private firms?
### Price Dispersion Across Families

<table>
<thead>
<tr>
<th></th>
<th>No. Firm</th>
<th>No. Security</th>
<th>Security-Quarter Obs.</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>10%</th>
<th>25%</th>
<th>Median</th>
<th>75%</th>
<th>90%</th>
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<tr>
<td><strong>Panel D:</strong> Across Families, Security-Quarters (with the same ending month)</td>
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<tr>
<td>NumFam</td>
<td>50</td>
<td>84</td>
<td>860</td>
<td>3.103</td>
<td>1.510</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>DispPrc_Avg</td>
<td>50</td>
<td>84</td>
<td>860</td>
<td>0.100</td>
<td>0.133</td>
<td>0.000</td>
<td>0.002</td>
<td>0.060</td>
<td>0.143</td>
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<tr>
<td>DispPrc_Med</td>
<td>50</td>
<td>84</td>
<td>860</td>
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<td>0.000</td>
<td>0.002</td>
<td>0.058</td>
<td>0.143</td>
<td>0.251</td>
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<tr>
<td>StdPrc</td>
<td>50</td>
<td>84</td>
<td>860</td>
<td>1.895</td>
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<td>0.028</td>
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<tr>
<td>AvgPrc</td>
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<td>84</td>
<td>860</td>
<td>21.937</td>
<td>27.808</td>
<td>3.299</td>
<td>5.991</td>
<td>14.000</td>
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<tr>
<td>MedPrc</td>
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<td>84</td>
<td>860</td>
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<td>28.311</td>
<td>3.298</td>
<td>5.991</td>
<td>14.000</td>
<td>22.698</td>
<td>48.772</td>
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</table>

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Private Company Valuations by Mutual Funds
Comments on Price Dispersion

- Unicorn investments account for a very small portion of total mutual fund investments.
  - Unicorn investments account for only 0.1% of the domestic equity mutual funds of $6.4 trillion in 2016.
  - The SEC constrains funds to invest less than 15% in private equity investments. In practice, holdings of individual funds are much smaller.

- Is the within-family variation in valuations driven by outsourced funds?
## Quarterly Alphas of Private Companies

### Model 1

<table>
<thead>
<tr>
<th>Term</th>
<th>Coefficient Estimates and Regression Statistics</th>
<th>Observations</th>
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<tbody>
<tr>
<td>Alpha</td>
<td>0.029**</td>
<td>4,322</td>
</tr>
<tr>
<td></td>
<td>(2.23)</td>
<td></td>
</tr>
<tr>
<td>Follow-on Dummy</td>
<td>0.351***</td>
<td>4,322</td>
</tr>
<tr>
<td></td>
<td>(4.94)</td>
<td></td>
</tr>
<tr>
<td>MKTRET</td>
<td>0.317</td>
<td>4,322</td>
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<tr>
<td></td>
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<tr>
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<tr>
<td></td>
<td>(3.33)</td>
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<tr>
<td>MKTRET_{t-2}</td>
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<td></td>
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<td>HML</td>
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<td>SMB_{t-2}</td>
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<td>R-squared</td>
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### Model 2

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<td></td>
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<tr>
<td></td>
<td>(1.09)</td>
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<td>SMB_{t-2}</td>
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### Model 3

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<td></td>
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<td>MKTRET</td>
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<td></td>
<td>(0.35)</td>
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<td>SMB_{t-2}</td>
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<td>R-squared</td>
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### Model 4

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<td>(0.73)</td>
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<tr>
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### Model 6

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<td>-0.005</td>
<td>4,322</td>
</tr>
<tr>
<td></td>
<td>(-0.33)</td>
<td></td>
</tr>
<tr>
<td>Follow-on Dummy</td>
<td>0.333***</td>
<td>4,322</td>
</tr>
<tr>
<td></td>
<td>(5.01)</td>
<td></td>
</tr>
<tr>
<td>MKTRET</td>
<td>0.562**</td>
<td>4,322</td>
</tr>
<tr>
<td></td>
<td>(2.78)</td>
<td></td>
</tr>
<tr>
<td>MKTRET_{t-1}</td>
<td>0.630**</td>
<td>4,322</td>
</tr>
<tr>
<td></td>
<td>(2.80)</td>
<td></td>
</tr>
<tr>
<td>MKTRET_{t-2}</td>
<td>0.282</td>
<td>4,322</td>
</tr>
<tr>
<td></td>
<td>(1.44)</td>
<td></td>
</tr>
<tr>
<td>HML</td>
<td>-0.548</td>
<td>4,322</td>
</tr>
<tr>
<td></td>
<td>(-1.04)</td>
<td></td>
</tr>
<tr>
<td>SMB</td>
<td>0.097</td>
<td>4,322</td>
</tr>
<tr>
<td></td>
<td>(0.35)</td>
<td></td>
</tr>
<tr>
<td>SMB_{t-1}</td>
<td>0.097</td>
<td>4,322</td>
</tr>
<tr>
<td></td>
<td>(0.35)</td>
<td></td>
</tr>
<tr>
<td>SMB_{t-2}</td>
<td>0.796***</td>
<td>4,322</td>
</tr>
<tr>
<td></td>
<td>(2.86)</td>
<td></td>
</tr>
<tr>
<td>R-squared</td>
<td>0.129</td>
<td>4,322</td>
</tr>
<tr>
<td>Observations</td>
<td>4,322</td>
<td></td>
</tr>
</tbody>
</table>
Performance results might be biased since successful firms participate in new rounds of financing that result in higher valuations, whereas the valuations of unsuccessful firms are not adjusted downwards.

The aggregate stock market performance was very strong over the sample period 2010-2016. Performance might not generalize over other market environments due to a “peso problem.”

Sample selection might have a selection bias since private holdings are partially identified by firms that recently went public.

Authors should include additional performance lags since prices change every 2.5 quarters.
Mutual Fund Returns Around Follow-On Financing

| Panel A: Benchmark-adjusted CAR (CAR_BMK) around Follow On Round |
|------------------|------------------|------------------|------------------|------------------|
| No. Security     | No. Fund         | Funds per Security | Fund-Security Obs. | CAR             |
|                  |                  |                  | [−10, −1]          | [−5, −1]          | [−3, −1]          | [0, 3]          | [0, 5]          | [0, 10]          | [11, 15]          | [16, 20]          |
| All Funds        | 59               | 135              | 8                  | 476              | 0.095           | 0.043           | 0.037           | 0.141*           | 0.311***          | 0.429**           | -0.129          |
|                  |                  |                  |                    |                  | (0.73)          | (0.55)          | (0.62)          | (1.95)           | (2.70)           | (2.62)           | (-1.43)         |
| Big 5            | 47               | 50               | 5                  | 241              | 0.187           | 0.095           | 0.037           | 0.123           | 0.197**          | 0.300***          | -0.055          |
|                  |                  |                  |                    |                  | (1.32)          | (0.95)          | (0.47)          | (1.48)           | (2.56)           | (2.84)           | (-0.67)         |
| Non-Big 5        | 32               | 85               | 7                  | 235              | 0.000           | -0.011          | 0.036           | 0.159           | 0.428**          | 0.561*           | -0.205          |
|                  |                  |                  |                    |                  | (0.00)          | (-0.11)         | (0.49)          | (1.56)           | (2.33)           | (1.95)           | (-1.41)         |

Discussed by Clemens Sialm
Private Company Valuations by Mutual Funds
## Mutual Fund Flows Around Follow-On Financing

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>[-30, -1]</td>
</tr>
<tr>
<td>31</td>
<td>22</td>
<td>2</td>
<td>75</td>
<td>0.098</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(1.42)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Panel B: Z-Score on Flow around Follow On Round</th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
The magnitude of the mutual fund performance after follow-on financing is relatively small (42.9bp over next ten days).

Individual investors likely do not have the necessary information to execute these trades and potential gains are too limited for institutional investors.

Fund flows are noisy reducing the power of the tests.
### Within Family Allocation of Private Equity Shares

<table>
<thead>
<tr>
<th>Dep. Var. =</th>
<th>PctShr: PE Allocation (in %)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1</td>
</tr>
<tr>
<td>RETBMK</td>
<td></td>
</tr>
<tr>
<td>RETBMK</td>
<td>0.094***</td>
</tr>
<tr>
<td></td>
<td>(3.11)</td>
</tr>
<tr>
<td>Dollar Fee</td>
<td>28.802***</td>
</tr>
<tr>
<td></td>
<td>(2.85)</td>
</tr>
<tr>
<td>PE</td>
<td>5.228***</td>
</tr>
<tr>
<td></td>
<td>(4.96)</td>
</tr>
<tr>
<td>Ln(PE Experience)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>RETBMK \times PE</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>RETBMK \times Ln(PE Experience)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Dollar Fee \times PE</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Dollar Fee \times Ln(PE Experience)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Controls</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family-Quarter FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.115</td>
<td>0.111</td>
<td>0.126</td>
<td>0.123</td>
</tr>
<tr>
<td>Obs</td>
<td>18,145</td>
<td>18,145</td>
<td>18,145</td>
<td>18,145</td>
</tr>
</tbody>
</table>

*, **, *** - significant at the 10, 5, and 1% level (respectively).
Authors should also report results on fund age and fund size.

- Cross-subsidization is more effective for younger funds with shorter track records and for smaller funds which are less affected by capacity constraints.

Dollar Fee should be replaced with percentage fee.

- It is difficult to interpret the coefficient on the dollar fee since the authors include log(size) and percentage fee as control variables.
- Dollar Fee might proxy for dollar size.

Prior experience variable should be excluded (in some specifications). It does not explain the economics of the allocations.
Additional Questions

- Study performance and flows around IPOs of unicorns. Funds with different valuations should experience different returns around IPOs.
- Quality of unicorns that obtain funding from mutual funds (cream skimming or adverse selection).
- Long-term performance effects of unicorns for mutual funds after adjusting for valuation biases.
- Holding unicorns might primarily be a marketing strategy to attract new fund flows.
The paper makes a great contribution to the private equity and mutual fund literatures by analyzing the valuation, performance, and flows of private holdings.

Although the area is becoming crowded, there are still several exciting research ideas.
CARs After Follow-On Rounds Sorted by Q1-Q3 Fund Performance

<table>
<thead>
<tr>
<th>Rank of Fund Performance</th>
<th>No. Fund</th>
<th>Fund-Year Obs.</th>
<th>[0, 3] Q1-3</th>
<th>Q4</th>
<th>Q4 – Q1-3</th>
<th>[0, 3] Q1-3</th>
<th>Q4</th>
<th>Q4 – Q1-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bottom 80%</td>
<td>36</td>
<td>51</td>
<td>0.260***</td>
<td>-0.059</td>
<td>-0.319***</td>
<td>0.315***</td>
<td>0.025</td>
<td>-0.290**</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(2.94)</td>
<td>(-0.95)</td>
<td>(-2.84)</td>
<td>(4.05)</td>
<td>(0.31)</td>
<td>(-2.54)</td>
</tr>
<tr>
<td>Top 20%</td>
<td>25</td>
<td>33</td>
<td>0.106</td>
<td>0.536***</td>
<td>0.430***</td>
<td>0.269***</td>
<td>0.492***</td>
<td>0.223*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(1.60)</td>
<td>(6.93)</td>
<td>(4.23)</td>
<td>(3.94)</td>
<td>(5.80)</td>
<td>(2.03)</td>
</tr>
<tr>
<td>Top – Bottom</td>
<td></td>
<td></td>
<td>-0.154</td>
<td>0.595***</td>
<td>0.749***</td>
<td>-0.046</td>
<td>0.467***</td>
<td>0.513***</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(-1.39)</td>
<td>(6.02)</td>
<td>(4.95)</td>
<td>(-0.44)</td>
<td>(4.00)</td>
<td>(3.23)</td>
</tr>
</tbody>
</table>

Panel A: Benchmark-adjusted CAR (CAR_BMK)

Discussed by Clemens Sialm

Private Company Valuations by Mutual Funds
Decomposition of Valuation Change

<table>
<thead>
<tr>
<th>Rank of Fund Performance</th>
<th>No. Funds</th>
<th>Fund-Year Obs.</th>
<th>Q1-3</th>
<th>Q4</th>
<th>Q4 – Q1-3</th>
<th>Q1-3</th>
<th>Q4</th>
<th>Q4 – Q1-3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Panel A: Weighted Valuation Changes in Q4 v. Q1-3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bottom 80%</td>
<td>36</td>
<td>51</td>
<td>0.104**</td>
<td>0.121***</td>
<td>0.017</td>
<td>0.076**</td>
<td>0.099***</td>
<td>0.023</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(2.23)</td>
<td>(8.10)</td>
<td>(0.43)</td>
<td>(2.41)</td>
<td>(8.27)</td>
<td>(0.88)</td>
</tr>
<tr>
<td>Top 20%</td>
<td>25</td>
<td>33</td>
<td>0.154***</td>
<td>0.280***</td>
<td>0.126***</td>
<td>0.120***</td>
<td>0.217***</td>
<td>0.097***</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(4.40)</td>
<td>(5.83)</td>
<td>(2.74)</td>
<td>(4.27)</td>
<td>(5.96)</td>
<td>(2.96)</td>
</tr>
<tr>
<td>Top – Bottom</td>
<td></td>
<td></td>
<td>0.050</td>
<td>0.159***</td>
<td>0.109*</td>
<td>0.044</td>
<td>0.118***</td>
<td>0.074*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.86)</td>
<td>(3.16)</td>
<td>(1.79)</td>
<td>(1.05)</td>
<td>(3.08)</td>
<td>(1.75)</td>
</tr>
</tbody>
</table>

**Panel B: Log Decomposition of Weighted Valuation Changes**

<table>
<thead>
<tr>
<th>Rank of Fund Performance</th>
<th>No. Funds</th>
<th>Fund-Year Obs.</th>
<th>( \ln\left(\frac{V_{Q}/V_{Q-1}}{WTPE}\right) \times \text{WTPE} )</th>
<th>( \ln\left(\frac{\Delta E_{Q}/\Delta E_{Q-1}}{WTPE}\right) \times \text{WTPE} )</th>
<th>( \ln\left(\frac{V_{Q-1}/\Delta E_{Q-1}}{WTPE}\right) \times \text{WTPE} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bottom 80%</td>
<td>36</td>
<td>51</td>
<td>-0.024***</td>
<td>-0.023***</td>
<td>0.002</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(-4.51)</td>
<td>(-4.32)</td>
<td>(0.32)</td>
</tr>
<tr>
<td>Top 20%</td>
<td>25</td>
<td>33</td>
<td>-0.029**</td>
<td>-0.015</td>
<td>0.014</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(-2.72)</td>
<td>(-1.48)</td>
<td>(0.89)</td>
</tr>
<tr>
<td>Top – Bottom</td>
<td></td>
<td></td>
<td>-0.007</td>
<td>0.010</td>
<td>0.016</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(-0.58)</td>
<td>(0.86)</td>
<td>(0.95)</td>
</tr>
</tbody>
</table>

*, **, *** - significant at the 10, 5, and 1% level (respectively).
Airbnb Series D Valuations by Three Funds

Discussed by Clemens Sialm

Private Company Valuations by Mutual Funds
Chernenko, Lerner, and Zeng (2017)  
- Relation between mutual fund investments in unicorns and the unicorns’ corporate governance provisions from the Certificates of Incorporation (COI).

Gornall and Strebulaev (2018)  
- Unicorn valuations are often biased since contractual rights are typically ignored.

Huang, Mao, Wang, and Zhou (2017)  
- Presence of institutions certifies the value of entrepreneurial firms to the public.

Kwon, Lowry, and Qian (2017)  
- Mutual fund investments enable firms to stay private longer and funds generate high returns due to their unicorn investments.