

Private Company Valuations by Mutual Funds

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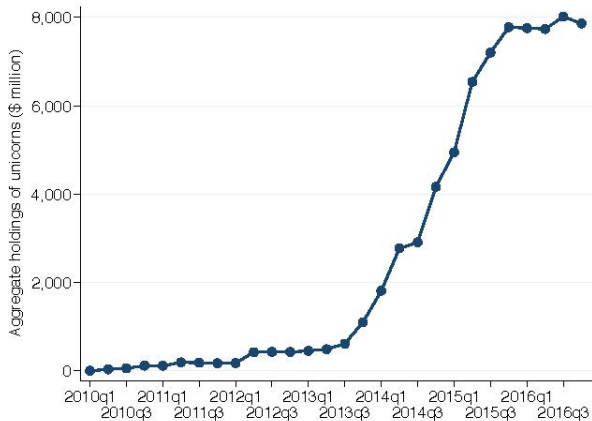
Discussed by Clemens Sialm

University of Texas at Austin, NBER, and ABFER

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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).

| Rank | Investor | Companies | | | | | | | | | | |
|------|-------------------------|-----------|--------|----------|-----------|-----------|------------|------------|------------|------------|-----------|--------------|
| 1 | Tiger Global Management | UBER | 凡凡 | airbnb | stripe | Grab | Palantir | coinbase | Instacart | 商通 | OLA | +32 unicorns |
| 2 | Tencent Holdings | 滴滴 | EPIC | GOJEK | 瓜子 | 满帮集团 | 链家 | BYJU'S | UBTECH | 美团 | OLA | +30 |
| 3 | SoftBank Group | ByteDance | UBER | 滴滴 | wework | Grab | 美团 | 瓜子 | coupang | slack | DOORDASH | +28 |
| 4 | Sequoia Capital China | ByteDance | airbnb | BITMAIN | dji | 瓜子 | 满帮集团 | easyhome | ZOOM | VIPKID | 快手 | +25 |
| 5 | Sequoia Capital | UBER | airbnb | stripe | coupang | instacart | DOORDASH | robinhood | hertz | ny bank | snowflake | +23 |
| 6 | Kleiner Perkins | UBER | airbnb | stripe | EPIC | dji | instacart | DOORDASH | slack | magic loop | robinhood | +20 |
| 7 | DST Global | airbnb | stripe | GOJEK | 瓜子 | slack | DOORDASH | robinhood | OLA | ny bank | hertz | +19 |
| 8 | Fidelity Investments | UBER | wework | airbnb | SPACEX | coupang | magic loop | Intero | 商通 | COMPASS | ps | +18 |
| 8 | Andreessen Horowitz | airbnb | stripe | coinbase | instacart | slack | TANIUM | magic loop | robinhood | Fanatics | Opendoor | +18 |
| 10 | Wellington Management | UBER | wework | airbnb | coupang | coinbase | slack | TANIUM | magic loop | Sofi | COMPASS | +16 |

CBINSIGHTS

Source: CBInsights (May 2019)

Largest Mutual Fund Investors in Uber (May 2019)

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

Source: Morningstar

Fund with Largest Uber Position Around IPO Date

Putnam Capital Spectrum Fund Class Y PVSYX | ★

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Quote **Chart** Fund Analysis Performance Ratings & Risk Management Stewardship Portfolio Expense Tax Purchase Filings

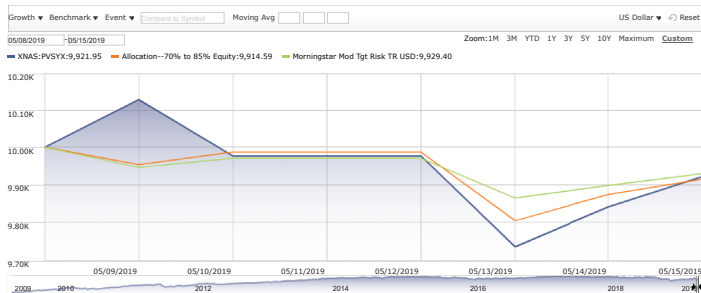
NAV **1-Day Total Return**

\$ **29.12** **↓ -1.25%**

USD | NAV as of 23 May 2019 | 1-Day Return as of 23 May 2019

| TTM Yield | Load | Total Assets | Expenses | Fee Level | Turnover | Status | Min. Inv. |
|-----------|------|--------------|----------|-----------|----------|--------|-----------|
| 0.00% | None | \$ 788.0 mil | 0.41% | Low | 2% | Open | \$ -- |

| 30-Day SEC Yield | Category | Investment Style | Credit Quality/Interest Rate Sensitivity |
|------------------|-------------------------------|------------------|--|
| -- | Allocation--70% to 85% Equity | Large Blend | -- |



Source: Morningstar

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.

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.
- 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.

Main Questions

- 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 there 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

| | No. Firm | No. Security | Security-Quarter Obs. | Mean | Std. Dev. | 10% | 25% | Median | 75% | 90% |
|---|----------|--------------|-----------------------|--------|-----------|-------|-------|--------|--------|--------|
| <i>Panel D: Across Families, Security-Quarters (with the same ending month)</i> | | | | | | | | | | |
| NumFam | 50 | 84 | 860 | 3.103 | 1.510 | 2 | 2 | 2 | 4 | 5 |
| DispPrc_Avg | 50 | 84 | 860 | 0.100 | 0.133 | 0.000 | 0.002 | 0.060 | 0.143 | 0.246 |
| DispPrc_Med | 50 | 84 | 860 | 0.103 | 0.155 | 0.000 | 0.002 | 0.058 | 0.143 | 0.251 |
| StdPrc | 50 | 84 | 860 | 1.895 | 3.600 | 0.000 | 0.028 | 0.705 | 2.046 | 4.817 |
| AvgPrc | 50 | 84 | 860 | 21.937 | 27.808 | 3.299 | 5.991 | 14.000 | 22.737 | 47.149 |
| MedPrc | 50 | 84 | 860 | 22.064 | 28.311 | 3.298 | 5.991 | 14.000 | 22.698 | 48.772 |

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 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
|---|-------------------|--------------------|----------------------|--------------------|--------------------|----------------------|
| <i>Panel A: Coefficient Estimates and Regression Statistics</i> | | | | | | |
| Alpha | 0.029** (2.23) | 0.005 (0.38) | 0.014 (0.94) | 0.009 (0.73) | -0.015 (-1.22) | -0.005 (-0.33) |
| Follow-on Dummy | | | | 0.351*** (4.94) | 0.350*** (5.18) | 0.333*** (5.01) |
| MKTRET | 0.317 (1.62) | 0.440** (2.21) | 0.567** (2.61) | 0.403** (2.11) | 0.525*** (2.94) | 0.562*** (2.78) |
| MKTRET _{t-1} | | 0.604*** (3.33) | 0.663** (2.41) | | 0.601*** (3.99) | 0.630*** (2.80) |
| MKTRET _{t-2} | | 0.467* (1.88) | 0.252 (1.09) | | 0.455** (2.17) | 0.282 (1.44) |
| HML | | | -0.700*** (-5.29) | | | -0.596*** (-4.30) |
| HML _{t-1} | | | -0.038 (-0.15) | | | -0.012 (-0.05) |
| HML _{t-2} | | | -0.360 (-1.04) | | | -0.158 (-0.54) |
| SMB | | | 0.530** (2.31) | | | 0.506** (2.24) |
| SMB _{t-1} | | | 0.119 (0.37) | | | 0.097 (0.35) |
| SMB _{t-2} | | | 1.067*** (3.25) | | | 0.796*** (2.86) |
| R-squared | 0.004 | 0.025 | 0.051 | 0.092 | 0.112 | 0.129 |
| Observations | 4,322 | 4,322 | 4,322 | 4,322 | 4,322 | 4,322 |

Comments: Performance of Private Companies

- 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

| | 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] |
| <i>Panel A: Benchmark-adjusted CAR (CAR - BMK) around Follow On Round</i> | | | | | | | | | | | | |
| All Funds | 59 | 135 | 8 | 476 | 0.095 (0.73) | 0.043 (0.55) | 0.037 (0.62) | 0.141* (1.95) | 0.311*** (2.70) | 0.429** (2.62) | -0.129 (-1.43) | -0.042 (-0.54) |
| Big 5 | 47 | 50 | 5 | 241 | 0.187 (1.32) | 0.095 (0.95) | 0.037 (0.47) | 0.123 (1.48) | 0.197** (2.56) | 0.300*** (2.84) | -0.055 (-0.67) | 0.009 (0.09) |
| Non-Big 5 | 32 | 85 | 7 | 235 | 0.000 (0.00) | -0.011 (-0.11) | 0.036 (0.49) | 0.159 (1.56) | 0.428*** (2.33) | 0.561* (1.95) | -0.205 (-1.41) | -0.093 (-0.96) |

Mutual Fund Flows Around Follow-On Financing

| No. Security | No. Fund | Funds per Security | Fund-Security Obs. | [-30, -1] | [-20, -1] | [-10, -1] | [-5, -1] | [-3, -1] | [0, 3] | [0, 5] | [0, 10] | [0, 20] | [0, 30] |
|--|----------|--------------------|--------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------------|-------------------|-------------------|-------------------|--------------------|
| <i>Panel A: Benchmark-adjusted Flow around Follow On Round</i> | | | | | | | | | | | | | |
| 31 | 22 | 2 | 75 | 0.098 (1.42) | 0.095 (1.36) | 0.086 (1.30) | 0.059 (1.57) | 0.048 (1.35) | -0.033 (-0.64) | -0.002 (-0.06) | -0.026 (-0.40) | -0.025 (-0.52) | -0.049 (-1.07) |
| <i>Panel B: Z-Score on Flow around Follow On Round</i> | | | | | | | | | | | | | |
| 31 | 22 | 2 | 75 | 0.010 (0.63) | 0.017 (0.86) | 0.014 (0.62) | 0.045 (1.22) | 0.039 (0.95) | 0.025 (0.54) | -0.002 (-0.04) | -0.025 (-0.46) | -0.026 (-0.91) | -0.036* (-1.87) |

Comments: Fund Returns and Flows Around Follow-On Financing

- 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

| Dep. Var. = | <i>PctShr</i> : PE Allocation (in %) | | | |
|--------------------------------|--------------------------------------|---------------------|--------------------|--------------------|
| | Model 1 | Model 2 | Model 3 | Model 4 |
| RETBMK | 0.094*** (3.11) | 0.096*** (3.18) | 0.011 (0.73) | 0.004 (0.27) |
| Dollar Fee | 28.802*** (2.85) | 26.515*** (2.66) | -2.084 (-0.21) | 4.065 (0.39) |
| PE | 5.228*** (4.96) | | 3.383*** (3.48) | |
| Ln(PE Experience) | | 1.547*** (4.50) | | 1.062*** (3.80) |
| RETBMK × PE | | | 0.489*** (2.87) | |
| RETBMK × Ln(PE Experience) | | | | 0.176*** (3.18) |
| Dollar Fee × PE | | | 35.235** (2.23) | |
| Dollar Fee × Ln(PE Experience) | | | | 6.894* (1.66) |
| Controls | Yes | Yes | Yes | Yes |
| Family-Quarter FE | Yes | Yes | Yes | Yes |
| R-squared | 0.115 | 0.111 | 0.126 | 0.123 |
| Obs | 18,145 | 18,145 | 18,145 | 18,145 |

*, **, *** - significant at the 10, 5, and 1% level (respectively).

Comments: Within Family Allocation

- 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 $\log(\text{size})$ 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.

Conclusions

- 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

CAR around Follow On Round Filing Date Sorted by Fund Performance

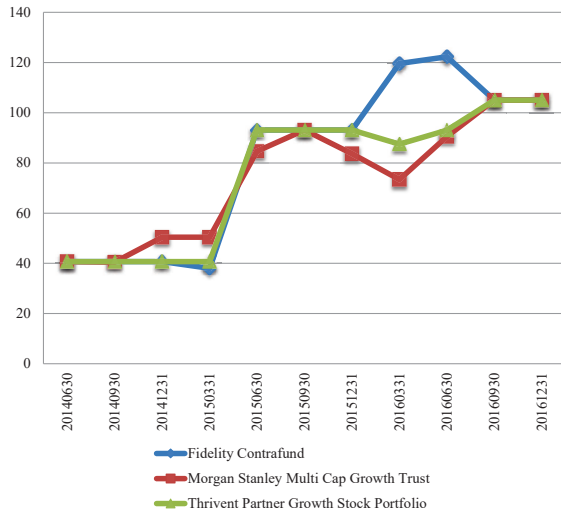
| Rank of Fund Performance | No. Fund | Fund-Year Obs. | [0, 3] | | | [0, 5] | | |
|--|----------|----------------|--------------------|--------------------|----------------------|--------------------|--------------------|---------------------|
| | | | Q1-3 | Q4 | Q4 – Q1-3 | Q1-3 | Q4 | Q4 – Q1-3 |
| <i>Panel A: Benchmark-adjusted CAR (CAR_BMK)</i> | | | | | | | | |
| Bottom 80% | 36 | 51 | 0.260*** (2.94) | -0.059 (-0.95) | -0.319*** (-2.84) | 0.315*** (4.05) | 0.025 (0.31) | -0.290** (-2.54) |
| Top 20% | 25 | 33 | 0.106 (1.60) | 0.536*** (6.93) | 0.430*** (4.23) | 0.269*** (3.94) | 0.492*** (5.80) | 0.223* (2.03) |
| Top – Bottom | | | -0.154 (-1.39) | 0.595*** (6.02) | 0.749*** (4.95) | -0.046 (-0.44) | 0.467*** (4.00) | 0.513*** (3.23) |

Decomposition of Valuation Change

| Rank of Fund Performance | No. Funds | Fund-Year Obs. | Q1-3 | Q4 | Q4 - Q1-3 | Q1-3 | Q4 | Q4 - Q1-3 | Q1-3 | Q4 | Q4 - Q1-3 |
|---|-----------|----------------|---------------------------------|----------------------|--------------------|--------------------------------------|---------------------|--------------------|---------------------------------------|--------------------|----------------------|
| <i>Panel A: Weighted Valuation Changes in Q4 v. Q1-3</i> | | | | | | | | | | | |
| | | | $(V_q/V_{q-1} - 1) \times WTPE$ | | | $\ln(V_q/V_{q-1}) \times WTPE$ | | | WTPE | | |
| Bottom 80% | 36 | 51 | 0.104** (2.23) | 0.121*** (8.10) | 0.017 (0.43) | 0.076** (2.41) | 0.099*** (8.27) | 0.023 (0.88) | 0.291*** (6.07) | 0.375*** (9.75) | 0.084** (2.26) |
| Top 20% | 25 | 33 | 0.154*** (4.40) | 0.280*** (5.83) | 0.126*** (2.74) | 0.120*** (4.27) | 0.217*** (5.96) | 0.097*** (2.96) | 0.629*** (5.18) | 0.715*** (5.78) | 0.086 (1.57) |
| Top - Bottom | | | 0.050 (0.86) | 0.159*** (3.16) | 0.109* (1.79) | 0.044 (1.05) | 0.118*** (3.08) | 0.074* (1.75) | 0.338** (2.59) | 0.341** (2.63) | 0.002 (0.03) |
| <i>Panel B: Log Decomposition of Weighted Valuation Changes</i> | | | | | | | | | | | |
| | | | $\ln(V_q/DEAL_q) \times WTPE$ | | | $\ln(DEAL_q/DEAL_{q-1}) \times WTPE$ | | | $\ln(V_{q-1}/DEAL_{q-1}) \times WTPE$ | | |
| Bottom 80% | 36 | 51 | -0.022*** (-4.85) | -0.024*** (-4.51) | -0.002 (-0.32) | 0.101*** (3.23) | 0.130*** (11.63) | 0.029 (1.07) | 0.003 (0.63) | 0.007 (0.68) | 0.003 (0.33) |
| Top 20% | 25 | 33 | -0.029** (-2.72) | -0.015 (-1.48) | 0.014 (0.89) | 0.197*** (6.34) | 0.219*** (7.05) | 0.022 (0.66) | 0.048*** (3.08) | -0.013 (-0.71) | -0.061*** (-2.91) |
| Top - Bottom | | | -0.007 (-0.58) | 0.010 (0.86) | 0.016 (0.95) | 0.095** (2.16) | 0.089** (2.70) | -0.006 (-0.15) | 0.045*** (2.71) | -0.019 (-0.95) | -0.064*** (-2.77) |

*, **, *** - significant at the 10, 5, and 1% level (respectively).

Airbnb Series D Valuations by Three Funds



Related Literature

- 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.