Public Market Staging: The Timing of Capital Infusions in Newly Public Firms

Michael Hertzel *(ASU)*
Mark Huson *(Alberta)*
Robert Parrino *(UT Austin)*

The Larry Y. Dann is Awesome™ Conference
@ University of Oregon

Discussion brought to you by
Jonathan Reuter
(Boston College and NBER)

“Oh, What’s Going On?”
The Setting

- Firm wants to raise capital to fund future investments and operations
- CEO must decide how much cash to raise in IPO
- There are **benefits** to raising more cash in IPO...
  - Extra cash allows the firm to fund more of its investments and daily operations before the next (costly) capital infusion
  - Extra cash is valuable in industry downturns and liquidity shocks
- ... but there are also **costs** to raising more cash in IPO...
  - Extra cash increases agency conflict with investors when it increases likelihood CEO will undertake “crappy” projects
  - May be cheaper to raise more cash after uncertainty resolves
- **Prediction:** firm-level heterogeneity in relative benefits and costs generates firm-level variation in amount of cash raised in IPO
- Without agency conflicts and uncertainty, there would be no tradeoff and firms would raise all the cash they need in IPO

“What’s Going On?”
The Tradeoff

- **This paper views the tradeoff from a different perspective**
- Rather than focus on variation in cash raised in IPO, **focuses on variation in length of time from IPO to next capital infusion**
- Intuition comes from world of venture capital, where information asymmetry and uncertainty lead VCs to invest in stages
  - “Round staging provides control benefits for investors because requiring managers to periodically raise additional capital increases the ability of investors to monitor and to liquidate a firm if performance and/or investment prospects are unsatisfactory” (p. 8)
- Also, the less cash raised in IPO, less you worry about payout policy
  - “Without effective staging in the public capital market, managers might be able to obtain sufficiently large capital infusions so as to render useless the control aspects of payout” (p. 2)
- *Explicitly ties literatures on cash & payout policy & optimal debt maturity in public firms together with literature on staging by VCs*

"Ya, What's Going On?"
The Data and Predictions

- 4,054 firms that conducted IPO during 1990-2005
- For each firm, identify all capital infusions in 5 years after the IPO
- **62%** of firms return to capital market at least once
  - For these firms: mean "spell length" is **1.42** years; median is **1.04** years
- **18%** do not return; **12%** are acquired; **8%** are delisted
- "The staging hypothesis predicts that important determinants of the time to the first post-IPO financing are known prior to the ... IPO"

1. More (pre-IPO) tangible assets ➔ longer spell length
2. Greater (pre-IPO) R&D intensity ➔ shorter spell length
3. Faster (pre-IPO) cash burn rate ➔ shorter spell length

- Staging ➔ "in the absence of proper due diligence investors will provide less capital in order to get to take a second look at the firm in a later round"

4. High IPO Activity ➔ shorter spell length if staging **substitutes** for diligence
5. Low IPO Activity ➔ shorter spell length if staging reflects supply constraint

“What’s Going On?”
The Results

- To test these predictions, break out
  - **univariate** comparisons
  - **hazard model** ➔ predict time to next capital infusion
  - **probit** ➔ predict any capital infusion | not merging or delisting
  - **multinominal logit** ➔ outcomes: any capital infusion, merged, or delisted; baseline: 18% still listed with no capital infusion
- Results are generally consistent with Gompers (1995)
- **My favorites?**
  - Firms that return to capital market most quickly look the most like firms that are delisted ➔ *staging provides rational for delisting*
  - Firms that go public during period of low IPO activity have shorter spell length ➔ *very interesting, but is this evidence against staging as a substitute for diligence?*

“What’s (Really) Going On?”
Mechanism?

- What is the **mechanism** behind staging in public capital market?
- Because VC holds the investment ➔ VC bears all of the downside risk ➔ strong incentive for VC to offer stage financing ➔ story is about VC constraining **supply** of capital
- In public capital market, investment bank advises firm on how much of the firm to sell and sets the offer price
  - Because investment bank places shares with institutional investors, it bears little downside risk from IPO that is “too big”
  - Moreover, because investment bank earns larger underwriting fee on IPO versus SEO (because 7% > 3%), bank will prefer big IPO
- To what extent does road show help firms understand the tradeoff between costs and benefits of raising more cash in IPO?
- To what extent does the offer price internalize this tradeoff?

"What's (Really) Going On?"
Mechanism? *(cont.)*

- Can you shed light on low IPO activity result by defining IPO activity at industry-by-year level?
- Do VC-backed firms learn good habits from VCs?
  - Is there more evidence of staging among VC-backed firms? Does this explain better long-run performance of VC-backed IPOs?
    - *Brav and Gompers (JF 1997)*
- Does it matter who is selling shares at the IPO?
  - Does the CEO use the IPO to reduce his ownership stake? If so, CEO may be willing to accept lower offer price to increase diversification
    - *Bodnaruk, Kandel, Massa, Simonov (RFS 2008)*
  - Does the firm have a "Friends and Family" plan? If so, CEO may be willing to sell at an artifically low offer price to benefit outsiders.
    - *Ljungqvist and Wilhelm (JF 2003)*
  - *While underpricing may harm firm, cash paid out to CEO and others should not cause **future** agency concerns about how to spend the **$***

“What’s (Really) Going On?”
Economic Significance?

- “If it takes longer to determine success or failure of drug trials than of oil exploration projects, spell lengths for pharma firms should be longer than for petroleum firms” ➔ predict cross-industry variation
- Cross-industry variation is statistically significant, but is it economically significant?
- Std. dev. ex post spell length seems small **(< 3 mo.)**
- Correlation of expected mean spell length with ex post mean spell length is small

	# Years to Next Capital Infusion			
	EXPECTED		***EX POST***	
Fama-French Industry	**Mean**	**Median**	**Mean**	**Median**
13 Pharma	1.79	1.75	1.51	1.13
12 Medical Equip	1.47	1.50	1.79	1.58
40 Transportation	1.37	1.00	1.52	1.08
41 Wholesale	1.34	1.00	1.28	0.98
32 Communication	1.29	1.00	1.12	0.88
42 Retail	1.22	1.00	1.25	0.87
34 Business Services	1.12	1.00	1.40	0.95
43 Restaurants, Hotels	1.11	1.00	1.22	0.84
35 Computers	1.10	1.00	1.58	1.12
36 Electronic Equipment	1.10	1.00	1.57	1.11
Correlation			**0.26**	**0.61**

- Do variables that explain spell length also explain cross-industry variation in age firms go public? (E.g., “Retail” older at IPO **&** less need for staging)

“What’s (Really) Going On?”
Random Stuff I Wanna Know

- Is there a systematic relationship between the amount raised in the IPO and the amount raised in the SEO (or other capital infusion)?
- Would we expect less evidence of staging if you examined a sample of firms that went public with debt issuance instead of IPO?
- Are there predictions about the terms on which firms are acquired?
  - Staging might lower cost of borrowing today but might reduce bargaining power with potential acquirer if initial signals are negative
- While cross-industry variation is smaller than I expected, plausible that (another paper) would find large cross-country differences
  - “round staging of public equity investments might be preferable when the validity of market prices is suspect because managers can manipulate public signals or when managers are unable to effectively convey information about their firms to investors” ➔ Do weaker investor protections and less mandatory disclosure result in more staging?