

How Do Equity Offerings Affect Firms? Evidence on Technology, Employees and Performance

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The Paper: Summary

- It uses regulatory shocks in China to construct an instrument for propensity to issue SEOs
- Analyzes how composition of workforce changes following SEOs
- Two main contributions:
 - ① Address endogeneity problems related to SEO decisions
 - ② Look not only at employment levels, but also at composition
- Main results: Following SEOs:
 - ① Number of high skill workers increases, number of low skill workers decreases
 - ② Total employment falls
 - ③ Expenditure in technology-related fixed- and intangible assets rises

The Financial Constraints Channel

- Model assumes that firms are subject to financial constraints
- Such constraints prevent firms from paying a fixed costs that will lead to a technological improvement
- Model is not specific to SEOs, but valid for any relaxation of financial constraints

Interpretation of the IV Results

- “Local average treatment effect” interpretation of the instrument (Angrist and Imbens, 1994)
- 2SLS informative only regarding behavior of firms around the payout threshold
- Hence, the instrument picks up variation in firms that are dividend payers
- Are they financially constrained? Dividend payer status often considered a proxy for *not* being financially constrained (Fazzari, Hubbard and Petersen, 1988)

Are Dividend Payers Financially Constrained? Cons

- DeAngelo, DeAngelo and Stulz (2010) assume dividend payout can proxy for the stage of the lifecycle
- SEO likelihood unrelated to M/B (growth opportunities), but strongly related to future returns
 - Dividend payers unlikely to issue equity to fund investment
 - Rather, they try to exploit mispricing

	Intercept	Market to book ratio	Prior stock return	Future stock return	Years listed
H. Top dividend payers					
Coefficient	-3.561	-0.103	0.004	-0.455	-
(Marginal probability)		(-0.002)	(0.001)	(-0.010)	
[t-statistic]	[-13.39]	[-1.13]	[0.040]	[-4.24]	
I. Other dividend payers					
Coefficient	-3.636	0.174	0.101	-0.281	-
(Marginal probability)		(0.005)	(0.003)	(-0.008)	
[t-statistic]	[-25.81]	[7.66]	[4.37]	[-4.76]	
J. Never paid dividends					
Coefficient	-3.183	0.082	0.077	-0.117	-
(Marginal probability)		(0.004)	(0.003)	(-0.005)	
[t-statistic]	[-33.15]	[4.26]	[3.42]	[-3.18]	

Source: DeAngelo, DeAngelo and Stulz (2010), Table 3

Are Dividend Payers Financially Constrained? Pros

- Nevertheless, many reasons to believe firms picked up by instrument may be financially constrained:
 - 1 Dividend payer status may not be a good proxy for financial constraints (Farre-Mensa and Ljungqvist, 2015)
 - 2 Dividends are ‘sticky’ and hard to cut, even for firms that may need liquidity
 - 3 Average payout in sample is 26%, versus about 10% in US; hence, Chinese companies may be more prone to pay dividends, independent of FC
(Caveat: Sample restrictions may explain part of the difference)

Testing the Financial Constraints Channel

- It would be helpful to show that firms that drive the relationship between SEO and employment choices are those more likely to be financially constrained
- Potential sorting variables are: size, age, credit rating, analyst coverage...
- Also, SEOs should not predict negative stock returns, at least in the firms likely to be constrained

- Firms become eligible for a SEO if achieve a certain threshold in terms of dividend payout
- Ideally, one could use a regression discontinuity design
- Unfortunately, sample size is too small
- However, include average three year payout as regressor
- Equivalent are relying on the hypothesis that relationship between payout and SEO, absent regulations, propensity is linear
- This hypothesis is testable, because sample include pre-regulations years
- One could run first stage regression over the period 2000-2006

Econometric Design (Cont'd)

- For example, in US some evidence of a negative relationship
- If similar evidence, it could be useful:
 - 1 to make treatment and control group more homogeneous (restriction only to dividend payers, matching)
 - 2 to include potential determinants of dividend payments (such as Tobin's Q)

	(1)	(2)
SEIneligible_1	-0.013 (0.010)	
SEIneligible_2		-0.022** (0.010)
P3_PR	-0.002 (0.003)	-0.001 (0.003)
P3_PR_D	-0.002 (0.011)	0.002 (0.011)
Ln(SALES)	0.015*** (0.004)	0.015*** (0.004)
Leverage	-0.093*** (0.017)	-0.093*** (0.017)
PPE/TA	-0.177*** (0.031)	-0.177*** (0.031)
Observations	22,219	22,219
R ²	0.546	0.546

- Almeida, Hsu and Li (2011) suggest that financial constraints may improve innovative efficiency (Jensen's (1986) free cash flow argument)
- Two suggestions:
 - 1 Evidence on workers composition and technology-related assets suggests potential effects on innovative output, i.e., patents
 - 2 Positive effect of SEOs on technology adoption may be weaker in firms with poor governance. One could look at firms characterized by different degrees of:
 - Perks (Gul, Cheng and Leung, 2011; Xu, Li, Yuan and Chan, 2014)
 - State ownership, ownership concentration, fraction of independent directors (Conyon and He, 2011)
 - Product market competition (Giroud and Mueller, 2010, 2011)

Minor Comments and Suggestions

- “We do not use a difference-in-differences (DID) approach because it provides estimates of the effects of regulatory changes instead of the effects of SEOs.”
 - However, estimating reduced form regression in an event-study fashion and plot coefficients could be very convincing in establishing causality:

$$Y_{i,t} = SEOIneligible_{i,t} \times \sum_{\tau} \beta_{\tau} \times \mathbb{1}(\tau = t) + \delta_t + \gamma_i + \varepsilon_{i,t}$$

- Chinese firms are required to have ROE greater than 10% in order to issue equity (Chen and Yuan, 2004; Chen and Wang, 2007)
 - Should firms not satisfying requirement be excluded from analysis?
- It would be interesting to see regression results with and without controls
 - It would validate the design
 - Some of the controls (leverage, tangibility, sales) may be “bad controls” (Angrist and Pischke, 2008) and bias the results (Gormley and Matsa, 2016)

Conclusion

- There is a lot to like in the paper
- Design and use of data are very careful
- Research question truly innovative
- Nicely puts together two important areas of research:
 - 1 Effects of technology on employment and wages (Labor)
 - 2 Financial constraints (Corporate Finance)
- It shows how the use of more detailed data can help make sense of potentially puzzling results