Empirical evidence on the viability of positive information to augment environmental regulation

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Introduction

We investigate the impact of positive environment-related media releases on a firm's stock market value in order to understand the firm's motivation behind such announcements as well as the implications of such market interactions for real environmental improvements. We contend the mixed evidence of the financial impact of positive environmental news in past literature is due to lack of comprehensively discriminating between event types. We consider four types of events and analyze these events jointly and separately. We also investigate confounding events, and address the endogeneity in the announcement decision via a model of selection.

Objectives

- Stock market reaction to positive environmental announcements
  - Study announcements by type
  - Deal with selection bias
- Policy implications of firm-investor interactions
  - Assess the potential to influence environmental quality
  - Environmental performance vs. disclosure

Types of Environmental Announcements

- **Action** - a current or completed action that demonstrates environmental responsibility
- **Announcement** - a future activity that demonstrates environmental responsibility
- **Recognition** - environmental performance being recognized by a third party
- **Report** - release of an environmental report, or a corporate social responsibility report that highlights its environmental activities

Methodology

- Stock market reaction
  - Event study
    - Immediate impact of an event on firm value
  - Determinants of investor reaction magnitude
    - Regressions
      - Conditional mean, conditional quantile, nonlinear least squares
      - Financial characteristics; environmental characteristics; industry effects; event type effects

Results

- Event study

Event Window	Type	Sample Size	$\overline{CAR}$	θ	Z_G	T_{std-CS}
[-1, 2]	All (incl. 08)	345	0.37	2.30**	4.16***	2.19**
	All	326	0.40	2.58**	4.35***	2.29**
	Action	46	0.37	0.75	0.27	0.32
	Announcement	43	0.98	2.25**	1.93**	2.56**
	Recognition	116	0.39	1.52	3.51***	1.78*
	Report	121	0.23	0.95	2.40**	0.38
[-1, 3]	All (incl. 08)	345	0.47	2.61***	3.62***	2.37**
	All	326	0.51	2.89***	3.79***	2.55**
	Action	46	0.42	0.76	0.27	0.41
	Announcement	43	1.05	2.16**	1.31	2.27**
	Recognition	116	0.54	1.92*	3.51***	2.10**
	Report	121	0.31	1.13	1.85*	0.57

- Conditional mean regression

	[-1, 2]			[-1, 3]		
	(1)	(2)	(3)	(4)	(5)	(6)
Size	0.008***	0.008***	0.008**	0.011***	0.011***	0.011***
	(0.003)	(0.003)	(0.004)	(0.003)	(0.003)	(0.004)
Profit	0.178	0.214*	0.227**	0.207*	0.255**	0.265**
	(0.110)	(0.111)	(0.113)	(0.117)	(0.118)	(0.120)
MB	0.0003	0.0002	0.0002	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Lev	−0.009	−0.010	−0.017	−0.017	−0.019	−0.031
	(0.016)	(0.016)	(0.018)	(0.017)	(0.017)	(0.019)
ME	−0.009***	−0.009***	−0.010**	−0.013***	−0.013***	−0.014***
	(0.003)	(0.003)	(0.004)	(0.003)	(0.003)	(0.004)
eqPerf	0.0004*	0.0003*	0.0003	0.0004**	0.0004*	0.0004*
	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Discl	−0.0002	−0.0001	−0.0002	−0.0002*	−0.0002*	−0.0003*
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Perf	−0.0002	−0.0002	−0.0002	−0.0002	−0.0002	−0.0002
	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Announcement		0.011*	0.013*		0.011	0.013*
		(0.006)	(0.007)		(0.007)	(0.007)
Recognition		0.002	0.002		0.007	0.008
		(0.005)	(0.005)		(0.006)	(0.006)
Report		−0.002	−0.002		−0.002	−0.001

Conclusions

- Stock market reaction
  - Overall significantly positive stock market reaction to positive environmental news
  - Self-made announcements of future activities bear the largest increase in stock value
    - Environmental quality not warranted
- Confounding events
  - Reduce magnitude of market reaction
  - Cannot rule out strategic announcement
- Determinants of investor reaction magnitude
  - Firm size, profitability, and growth prospect affect investor reaction
  - Investors benchmark firm past environmental characteristics

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