Short-Termist CEO Compensation in Speculative Markets: A Controlled Experiment

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Motivation

- ► Corporate short-termism is a long-standing debate.
  - ► 1980s: managers use short-term earnings to fend off takeover threats (Stein, 1988; Erickson and Wang, 1999).
  - ► 2001 dot-com bubble: insiders sell shares before stock crash.
  - ► Recent: excessive share repurchases to meet earnings targets (Hribar, Jenkins, and Johnson, 2006; Almeida, Fos, and Kronlund, 2016; Edmans, Fang, and Huang, 2018)

- ► Two observations:
  1. Extreme episodes of corporate short-termism coincided with high asset market speculation (Bolton, Scheinkman, and Xiong, 2005).
  2. Anecdotal evidence: short-termism the desire of shareholders: Carl Icahn vs. Time Warner & Motorola

Motivation

▶ Bolton, Scheinkman, and Xiong (2006) model (BSX):

  ▶ Classical Holmstrom and Tirole (1993) model with market speculation.

  ▶ **Disagreement** among stock market investors with **short-sale constraints** leads to speculative components in stock prices (Miller, 1977, Morris, 1996, Hong and Stein, 2007).

  ▶ Current shareholders design equity-based compensation contracts with short-term incentives, hoping to further boost stock price and sell to even more optimistic investors (Scheinkman and Xiong, 2003).

Empirical Implication 1: Short-Sale Constraints

▶ Short-selling promotes price efficiency and market quality (Diamond and Verrecchia, 1987; Beber and Pagano, 2013; Boehmer and Wu, 2013, etc.).

▶ Short-selling allows the market to include pessimistic views and makes short-termism less attractive to existing shareholders.

▶ Remove short-sale constraints ⇒ short-termist incentives in CEO compensation ↓.

Empirical Implication 2: Investor Disagreement

▶ Given short-sale constraints:

  ▶ Firms with high investor disagreement have speculative stock prices. Short-sale constraints binding for pessimists (Diether, Malloy, and Scherbina, 2002; Chen, Hong, and Stein, 2001, 2002).

    ⇒ High incentives for short-termist compensation

  ▶ Firms with low investor disagreement have little market speculation. Short-sale constraints less binding.

    ⇒ Low incentives for short-termist compensation

▶ Remove short-sale constraints ⇒ firms with high investor disagreement reduce short-termist incentives in CEO compensation more.

Identification Strategy

- **Regulation SHO**: a randomized experiment by the SEC. Relaxed short-sale constraints for a group of pilot stocks from 2005 to 2007.
    - Program lifted short-sale price tests for every third stock in the Russell 3000 sorted by trading volume.

- During the program, pilot stocks short-selling activities ↑ stock prices ↓ (Diether, Lee, and Werner, 2009; Grullon et al., 2015).

- Program has beginning and ending dates, allowing us to do DiD tests both during and after the pilot program.

Measuring Short-Termist Incentives: Compensation Duration

- CEO compensation duration (CPD): weighted average vesting periods of compensation components including salary, bonus, restricted stocks, and stock options (Gopolan et al., 2014).

- For each CEO-year, calculate CPD as follows:

$$CPD = \frac{(Salary + Bonus) \times 0 + \sum_{i=1}^{n_s} Restricted\ Stock_i \times t_i + \sum_{j=1}^{n_o} Option_j \times t_j}{Salary + Bonus + \sum_{i=1}^{n_s} Restricted\ Stock_i + \sum_{j=1}^{n_o} Option_j},$$

Data: Compensation Duration & Firm Characteristics

- Compensation data from Incentive Lab by Institutional Shareholder Services (Bettis et al., 2016; Huang, 2016).

  - Grant-by-grant equity compensation information including vesting schedules, vesting periods, and fair values.

  - Sample executives covered: S&P500 and S&P400 (midcap) firms.

- All other firm-year characteristics are computed using CRSP and Compustat.

DiD Validity: Pre-event Differences

Panel A: Full Sample

	Pilot Group		Control Group		Diff	T-stat	Diff	T-stat
	Level (03')	Growth Rate (01'-03')	Level (03')	Growth Rate (01'-03')				
	(1)	(2)	(3)	(4)	(1)-(3)		(2)-(4)	
CPD	17.73	0.17	17.61	0.18	0.13	0.14	-0.01	-0.05
SIZE	8.17	0.02	8.15	0.02	0.02	0.22	0.00	0.18
LEV	0.29	4.02	0.38	1.72	-0.08	-0.90	2.30	0.85
MB	2.15	0.09	1.90	0.06	0.25	1.40	0.03	0.44
LTASSET	0.76	0.40	0.75	0.36	0.01	0.42	0.04	0.32
R&D	0.03	0.03	0.03	0.00	0.00	0.29	0.02	0.32
ROA	0.15	-0.04	0.15	-0.98	0.01	1.09	0.93	0.79
SPREAD	0.40	-0.55	0.39	-0.56	0.01	0.32	0.01	0.38
VOLATILITY	2.35	-0.23	2.38	-0.25	-0.03	-0.37	0.02	0.93
S.D. CF	0.06	0.35	0.06	0.44	-0.01	-1.05	-0.09	-0.68
S.D. SALES	0.30	0.48	0.27	0.38	0.03	0.70	0.11	1.07
VEGA	203.7	2461	196.1	32.4	7.62	0.38	2,429	1.35
DELTA	1051	0.68	905.6	0.50	145.8	0.83	0.18	0.71
CEO TURN	0.16	-0.79	0.16	-0.79	0.01	0.18	0.00	0.00
RET	-0.05	-3.47	-0.04	-1.03	-0.01	-0.16	-2.43	-0.85

Baseline DiD Regression

▶ We run the following DiD regression:

$$Log(CPD)_{i,t} = \beta_0 + \beta_1 PILOT_i \times DURING_t + \beta_2 PILOT_i \times POST_t +$$
$$\beta_3 PILOT_i + \delta_t + \lambda_t + \mathbf{X}_{i,t}\beta + \epsilon_{i,t},$$

PRE: firm-years before Regulation SHO.
$DURING$: program years.
$POST$: post-program years.
$PILOT$: pilot firms in the program.
δ_t: year fixed effects.
λ_t: industry fixed effects.
$\mathbf{X}_{i,t}$: firm-year characteristics control variables.

Baseline DiD Results

	Full Sample			Balanced Sample		
	(1)	(2)	(3)	(4)	(5)	(6)
PILOT×DURING	0.084*	0.089*	0.087*	0.096*	0.101*	0.101*
	(2.21)	(2.40)	(2.35)	(1.97)	(2.12)	(2.12)
PILOT×POST	0.048	0.061	0.057	0.079	0.083	0.082
	(1.16)	(1.50)	(1.41)	(1.50)	(1.59)	(1.59)
PILOT	-0.030	-0.049	-0.046	-0.057	-0.067	-0.065
	(-1.02)	(-1.70)	(-1.59)	(-1.53)	(-1.81)	(-1.76)
SIZE		0.073**	0.077**		0.068**	0.073**
		(10.44)	(10.74)		(6.46)	(6.78)
MB		0.045**	0.044**		0.051**	0.050**
		(8.02)	(7.80)		(5.68)	(5.60)
LEV		-0.023	-0.024		-0.086	-0.091
		(-0.63)	(-0.67)		(-1.59)	(-1.67)
RET		-0.017	-0.017		-0.058**	-0.059**
		(-1.45)	(-1.45)		(-3.36)	(-3.38)
SPREAD		-0.122**	-0.131**		-0.097**	-0.110**
		(-6.04)	(-6.26)		(-3.35)	(-3.69)
LTASSET		0.037	0.043		0.020	0.030
		(1.13)	(1.33)		(0.43)	(0.63)
R&D		0.224	0.181		0.808**	0.717**
		(1.51)	(1.22)		(2.98)	(2.62)
VOLATILITY			0.012			0.017
			(1.55)			(1.56)
S.D. CF			0.213*			0.228
			(2.30)			(1.08)
S.D. SALES			-0.009			-0.002
			(-1.11)			(-0.16)
INTERCEPT	3.047**	2.333**	2.259**	2.744**	2.221**	2.087**
	(10.70)	(8.04)	(7.75)	(18.60)	(12.34)	(10.96)
Year Effect	YES	YES	YES	YES	YES	YES
Industry Effect	YES	YES	YES	YES	YES	YES
No. of Obs.	5,600	5,600	5,600	2,999	2,999	2,999
Adjusted R^2	0.11	0.15	0.15	0.16	0.19	0.19

Change in CPD Differences (%)
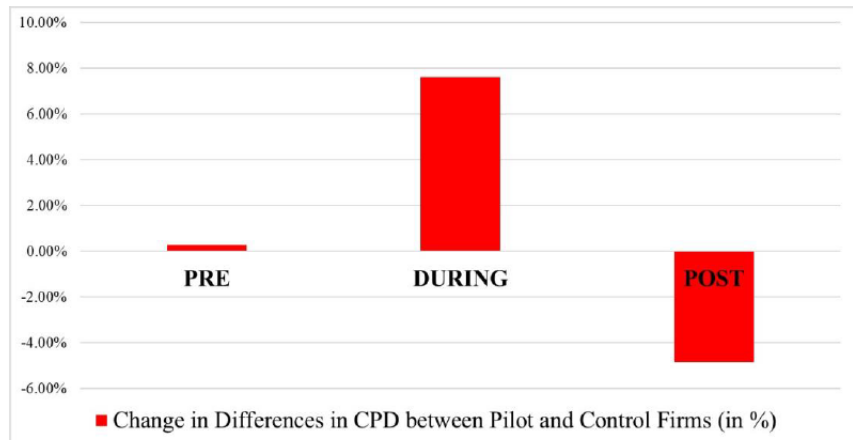
Baseline DiD Results: Additional Controls

	Full Sample			Balanced Sample		
	(1)	(2)	(3)	(4)	(5)	(6)
PILOT×DURING	0.086*	0.099**	0.160*	0.100*	0.119*	0.159
	(2.31)	(2.65)	(2.44)	(2.09)	(2.47)	(1.91)
PILOT×POST	0.056	0.062	0.109	0.084	0.069	0.063
	(1.38)	(1.51)	(0.83)	(1.63)	(1.32)	(0.38)
PILOT	-0.046	-0.054		-0.067	-0.083*	
	(-1.59)	(-1.88)		(-1.80)	(-2.25)	
SIZE	0.072**	0.083**	0.083**	0.068**	0.073**	0.073**
	(9.68)	(11.01)	(11.00)	(6.12)	(6.53)	(6.52)
MB	0.042**	0.034**	0.034**	0.048**	0.034**	0.034**
	(7.23)	(5.82)	(5.82)	(5.25)	(3.67)	(3.66)
LEV	-0.021	-0.047	-0.045	-0.091	-0.107*	-0.106
	(-0.57)	(-1.28)	(-1.22)	(-1.67)	(-1.96)	(-1.94)
RET	-0.017	0.004	0.004	-0.056**	-0.032	-0.032
	(-1.45)	(0.34)	(0.33)	(-3.22)	(-1.82)	(-1.83)
SPREAD	-0.133**	-0.157**	-0.157**	-0.109**	-0.107**	-0.107**
	(-6.35)	(-7.40)	(-7.41)	(-3.65)	(-3.53)	(-3.55)
LTASSET	0.045	0.034	0.035	0.028	0.013	0.013
	(1.39)	(1.04)	(1.05)	(0.58)	(0.27)	(0.26)
R&D	0.179	0.307*	0.311*	0.751**	0.862**	0.866**
	(1.19)	(2.04)	(2.07)	(2.73)	(3.14)	(3.15)
VOLATILITY	0.011	0.005	0.005	0.016	0.017	0.017
	(1.50)	(0.63)	(0.65)	(1.46)	(1.55)	(1.55)
S.D. CF	0.213*	0.221*	0.217*	0.214	0.242	0.241
	(2.29)	(2.36)	(2.32)	(1.01)	(1.14)	(1.13)
S.D. SALES	-0.010	-0.014	-0.014	-0.002	-0.008	-0.008
	(-1.18)	(-1.65)	(-1.63)	(-0.15)	(-0.87)	(-0.87)
CEO TURN	0.041*	0.035	0.034	0.060*	0.066*	0.065*
	(2.00)	(1.71)	(1.65)	(1.99)	(2.20)	(2.17)
Log(DELTA)	0.014*	0.001	0.001	0.012	0.006	0.006
	(2.21)	(0.18)	(0.14)	(1.36)	(0.67)	(0.64)
Log(VEGA)	0.002	0.002	0.002	-0.000	0.001	0.001
	(1.24)	(1.13)	(1.16)	(-0.04)	(0.21)	(0.26)
INTERCEPT	2.198**	2.295**	2.291**	2.057**	2.022**	2.019**
	(7.51)	(7.80)	(7.77)	(10.73)	(10.56)	(10.51)
Year Effect	YES	YES	YES	YES	YES	YES
Industry Effect	YES	YES	YES	YES	YES	YES
No. of Obs.	5,600	5,568	5,568	2,999	2,994	2,994
Adjusted R²	0.15	0.14	0.14	0.19	0.17	0.17

Investor Disagreement

- The effect of short-sale constraints on *CPD* should be stronger for firms with high market speculation due to disagreement.

    - Partition sample firms into high (low) disagreement group if fall above (below) the CRSP universe median.

    - Two measures of investor disagreement: analysts forecast dispersion, abnormal turnover

    - Both measures use five years of data **before** Regulation SHO.

Investor Disagreement

Panel A	Full Sample				Balanced Sample			
	Low *DISPERSION*		High *DISPERSION*		Low *DISPERSION*		High *DISPERSION*	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
PILOT×DURING	0.055	0.071	0.163*	0.150*	0.011	0.043	0.269*	0.222
	(1.55)	(1.91)	(2.50)	(2.38)	(0.28)	(1.05)	(2.15)	(1.89)
PILOT×POST	0.060	0.072	0.051	0.058	0.039	0.068	0.127	0.077
	(1.45)	(1.75)	(0.69)	(0.80)	(0.56)	(0.96)	(0.99)	(0.59)
PILOT	-0.009	-0.033	-0.096	-0.102	0.005	-0.038	-0.178	-0.154
	(-0.22)	(-0.83)	(-1.47)	(-1.51)	(0.08)	(-0.80)	(-1.35)	(-1.21)
SIZE		0.080**		0.076**		0.085**		0.068*
		(5.43)		(4.92)		(3.81)		(2.23)
MB		0.044**		0.037**		0.060**		0.020
		(5.07)		(3.65)		(4.89)		(0.98)
LEV		0.032		-0.134		-0.131		0.075
		(0.37)		(-1.72)		(-1.45)		(0.59)
LTASSET		0.107		-0.012		0.092		-0.026
		(1.87)		(-0.21)		(0.86)		(-0.30)
R&D		0.266		-0.004		0.174		1.639**
		(1.23)		(-0.02)		(0.42)		(5.56)
RET		-0.011		-0.021		-0.078		-0.037
		(-0.38)		(-1.46)		(-1.83)		(-1.28)
SPREAD		-0.080**		-0.120**		-0.081		-0.117**
		(-3.12)		(-7.02)		(-1.88)		(-3.56)
VOLATILITY		0.000		0.025		-0.008		0.058*
		(-0.02)		(1.18)		(-0.31)		(2.12)
S.D. CF		0.571*		0.091		1.050		0.199
		(2.32)		(1.23)		(1.70)		(0.49)
S.D. SALES		-0.004		-0.027		0.003		-0.110
		(-0.50)		(-1.23)		(0.68)		(-1.62)
INTERCEPT	3.106**	2.290**	3.060**	2.352**	2.982**	2.209**	2.726**	2.049**
	(27.09)	(18.68)	(78.53)	(10.94)	(24.58)	(7.47)	(12.61)	(5.13)
Year Effect	YES	YES	YES	YES	YES	YES	YES	YES
Industry Effect	YES	YES	YES	YES	YES	YES	YES	YES
No. of Obs.	3,380	3,380	2,097	2,097	1,948	1,948	1,034	1,034
Adjusted R²	0.14	0.17	0.12	0.16	0.19	0.22	0.19	0.22

Investor Disagreement

Panel B	Full Sample				Balanced Sample			
	Low *TURNOVER*		High *TURNOVER*		Low *TURNOVER*		High *TURNOVER*	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
PILOT×DURING	-0.018	-0.008	0.142*	0.139*	-0.095	-0.052	0.208*	0.201*
	(-0.29)	(-0.13)	(2.12)	(2.13)	(-1.29)	(-0.73)	(2.20)	(2.22)
PILOT×POST	-0.016	0.005	0.088	0.088	-0.014	0.013	0.136	0.131
	(-0.21)	(0.07)	(1.27)	(1.27)	(-0.17)	(0.16)	(1.47)	(1.45)
PILOT	0.076	0.068	-0.102	-0.111	0.113	0.119	-0.175	-0.184*
	(1.28)	(1.24)	(-1.53)	(-1.72)	(1.59)	(1.81)	(-1.81)	(-1.96)
SIZE		0.086**		0.075**		0.064**		0.082**
		(6.14)		(5.16)		(2.96)		(4.27)
MB		0.071**		0.033**		0.105**		0.044**
		(5.10)		(3.37)		(5.06)		(2.70)
LEV		-0.197**		0.026		-0.216		-0.030
		(-2.79)		(0.40)		(-1.82)		(-0.32)
LTASSET		0.040		0.064		-0.115		0.096
		(0.56)		(0.91)		(-1.32)		(1.15)
R&D		0.175		0.199		0.304		0.628*
		(0.63)		(0.92)		(0.44)		(1.98)
RET		-0.004		-0.020		-0.070*		-0.052
		(-0.21)		(-0.86)		(-1.99)		(-1.35)
SPREAD		-0.083*		-0.158**		-0.067		-0.133*
		(-2.14)		(-3.45)		(-1.07)		(-2.46)
VOLATILITY		0.001		0.015		-0.017		0.030
		(0.07)		(1.42)		(-0.70)		(1.48)
S.D. CF		0.408		0.109		1.125*		-0.002
		(1.83)		(1.04)		(2.14)		(-0.00)
S.D. SALES		0.078		-0.015		0.099		-0.004
		(1.10)		(-1.06)		(1.25)		(-0.62)
INTERCEPT	3.056**	2.281**	3.072**	2.334**	3.042**	2.477**	2.744**	1.970**
	(54.42)	(13.78)	(54.40)	(13.27)	(45.67)	(11.14)	(11.74)	(6.87)
Year Effect	YES	YES	YES	YES	YES	YES	YES	YES
Industry Effect	YES	YES	YES	YES	YES	YES	YES	YES
No. of Obs.	1,988	1,988	3,606	3,606	1,081	1,081	1,905	1,905
Adjusted R²	0.14	0.20	0.13	0.16	0.20	0.24	0.19	0.21

Mechanism: Short-Term-Oriented Institutional Ownership

- ▶ Institutional investors have considerable influence over CEO compensation (Shleier and Vishny, 1986; Black, 1992), leading to more incentive-compatible compensation designs (Hartzell and Starks, 2003).

- ▶ Marginal effect of removing SS constraints is larger for firms with more institutional investors with short-term horizons.

- ▶ Remove short-sale constraints $\Rightarrow$ firms with more ST-oriented institutional shareholders increase their CEO compensation duration more.

Mechanism: Short-Term-Oriented Institutional Ownership

- Classify institutional shareholders into ST- or LT-oriented investors following Bushee (1998).

    - Transient institutional investors are ST-oriented.

    - Quasi-indexers and dedicated institutional investors are LT-oriented.

- Partition sample with the ratio of ST-oriented IO to LT-oriented IO ($STIO/LTIO$) and re-run DiD.

Mechanism: Short-Term-Oriented Institutional Ownership

	Full Sample				Balanced Sample			
	Low *STIO/LTIO*		High *STIO/LTIO*		Low *STIO/LTIO*		High *STIO/LTIO*	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
PILOT×DURING	-0.028	-0.026	0.171*	0.167*	-0.013	0.011	0.213*	0.191*
	(-0.42)	(-0.40)	(2.36)	(2.39)	(-0.15)	(0.13)	(2.09)	(1.97)
PILOT×POST	-0.023	-0.018	0.115	0.123	0.010	0.030	0.139	0.120
	(-0.30)	(-0.25)	(1.50)	(1.63)	(0.11)	(0.37)	(1.32)	(1.18)
PILOT	0.056	0.024	-0.070	-0.073	0.102	0.056	-0.187	-0.148
	(0.97)	(0.42)	(-0.93)	(-1.01)	(1.34)	(0.76)	(-1.62)	(-1.40)
SIZE		0.108**		0.069**		0.096**		0.075**
		(5.81)		(4.77)		(4.81)		(3.41)
MB		0.054**		0.041**		0.058*		0.035*
		(3.35)		(4.75)		(2.01)		(2.18)
LEV		-0.048		-0.083		-0.179		-0.035
		(-0.52)		(-1.26)		(-1.85)		(-0.32)
LTASSET		0.073		0.038		-0.006		0.098
		(0.87)		(0.61)		(-0.06)		(0.99)
R&D		1.005*		-0.059		1.359		0.473
		(2.25)		(-0.32)		(1.37)		(1.25)
RET		-0.021		-0.023		-0.034		-0.066
		(-0.68)		(-1.08)		(-0.75)		(-1.70)
SPREAD		-0.128		-0.127**		-0.054		-0.136**
		(1.81)		(-3.90)		(-0.78)		(-2.64)
VOLATILITY		0.044*		0.004		0.043*		0.019
		(2.47)		(0.45)		(1.99)		(1.00)
S.D. CF		0.471*		0.147		0.795		0.246
		(1.99)		(1.34)		(1.16)		(0.48)
S.D. SALES		-0.112		-0.002		-0.095		0.002
		(-1.80)		(-0.19)		(-1.09)		(0.66)
INTERCEPT	2.968**	1.728**	3.147**	2.620**	2.662**	1.614**	2.792**	2.091**
	(48.29)	(6.59)	(62.87)	(18.92)	(63.34)	(5.49)	(11.49)	(7.02)
Year Effect	YES	YES	YES	YES	YES	YES	YES	YES
Industry Effect	YES	YES	YES	YES	YES	YES	YES	YES
No. of Obs.	2,554	2,554	3,022	3,022	1,531	1,531	1,410	1,410
Adjusted R^2	0.15	0.20	0.12	0.16	0.21	0.25	0.14	0.17

- If a change in compensation duration is effective, should see changes in CEO behavior.
    - Longer *CPD* incentizes CEOs to take longer views.
    - CEOs willing to accept longer *CPD* have longer trading horizons in own companies' stocks.

- Remove short-sale constraints $\Rightarrow$ CEO horizons $\uparrow$

- Measure CEO trading horizons following Akbas, Jiang, and Koch (2018):
    - If CEOs trade mostly all buys, or all sales $\rightarrow$ longer trading horizon
    - If CEOs trade on both sides $\rightarrow$ shorter trading horizon

Consequences: Overinvestment

- BSX: shareholders use short-termist compensation to induce CEOs to invest more in "castle-in-the-air" projects.

  - Inferior long-term values but have potential to be overvalued

- Remove short-sale constraints $\Rightarrow$ Overinvestment $\downarrow$

- A firm is overinvesting if investment level is above the industry-year median (Polk and Sapienza, 2009).

- ▶ BSX: shareholders' incentive to exploit market speculation drives earnings management.
    - ▶ Peng and Röell (2008): fast-vesting equity compensation $\Rightarrow$ earnings management incentives $\uparrow$

- ▶ Remove short-sale constraints $\Rightarrow$ Earnings management $\downarrow$

- ▶ Measures of earnings management:
    - ▶ Stock repurchase: Hribar, Jenkins, and Johnson (2006), Almeida, Fos, and Kronlund (2016), Edmans, Fang, and Huang (2018)
    - ▶ Meet & beat forecasts: Malmendier and Tate (2009)
    - ▶ Cutting R&D: Graham, Harvey, and Rajgopal (2005), Bushee (1998)

Consequences: 2SLS Regressions

Panel A: Full Sample

Dependent Variable	OVERINVEST		RD		ARP		EM		HOR	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Log(CPD) (fitted)	-0.907**		0.309		-0.030		-0.498**		-0.129*	
	(-2.66)		(1.86)		(-1.66)		(-2.65)		(-2.48)	
PILOT×DURING		-0.056**		0.020		-0.003**		-0.058**		-0.021*
		(-3.09)		(1.37)		(-2.88)		(-3.10)		(-2.09)
PILOT×POST		-0.014		0.003		-0.003*		-0.029		-0.011
		(-0.54)		(0.19)		(-2.08)		(-1.43)		(-0.90)
PILOT		-0.013		0.008		0.002		0.045**		0.014
		(-0.62)		(0.68)		(1.88)		(3.12)		(1.42)
Year Effect	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry Effect	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
No. of Obs.	5,510	5,510	5,612	5,612	2,458	2,458	5,526	5,526	2,389	2,389

Panel B: Balanced Sample

Dependent Variable	OVERINVEST		RD		ARP		EM		HOR	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Log(CPD) (fitted)	-0.817*		0.032		-0.020		-0.390		-0.018	
	(-2.35)		(0.21)		(-0.83)		(-1.81)		(-0.70)	
PILOT×DURING		-0.095**		0.024		-0.003*		-0.052*		-0.007
		(-3.16)		(1.35)		(-2.11)		(-2.06)		(-0.96)
PILOT×POST		-0.016		-0.005		0.000		-0.033		-0.009
		(-0.42)		(-0.26)		(0.16)		(-1.20)		(-1.03)
PILOT		0.018		0.014		-0.001		0.040*		0.004
		(0.48)		(1.05)		(-0.48)		(2.05)		(0.49)
Year Effect	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry Effect	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
No. of Obs.	2,846	2,846	2,948	2,948	1,188	1,188	2,908	2,908	1,209	1,209

Conclusion

▶ Use a random assignment of firms with no SS constraints to test and find supporting evidence for Bolton, Scheinkman, and Xiong (2006).

▶ Pilot firms have longer CEO compensation duration during the Regulation SHO program years, and this difference reverts back post-event.

▶ Effect is stronger among firms with higher investor disagreement, and with more short-term-oriented IO.

▶ Pilot firms also have longer CEO trading horizons, less overinvestments, and less earnings management.