The Effect of Mandatory Information Disclosure on Financial Constraints

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Should information disclosure be mandatory or voluntary?

- Literature: mandatory INCREASE of information disclosure.
- This paper: mandatory disclosure of SAME PIECE of information.

Advantage of voluntary disclosure:

- Signaling

  (Akerlof (1978), Grossman (1981), Verrecchia (1983), Dye (1985), etc)

Advantage of mandatory disclosure:

- Future disclosure is guaranteed

  (Diamond (1985), Ben-Porath, Dekel, and Lipman (2017))

Effects on firm's ability to raise external finance

- Financial constraints are very sensitive to asymmetries of information.
  - Signaling reduces adverse selection.
  - Permanent disclosure reduces agency problems.

$$\text{Voluntary} \Rightarrow \text{Mandatory} \begin{cases} \Delta^{+}\text{Adverse Selection} & \text{(signaling is shut down)} \\ \Delta^{-}\text{Agency problem} & \text{(permanent disclosure)} \end{cases}$$

- **This paper:** natural experiment that changed the same piece of disclosed information from voluntary to mandatory.
  - **Effect on firm's financial constraints.**

Quasi-natural Experiment

SEC's New Disclosure Rules

- In February of 2008, the SEC eliminated the "small business" reporting form: 10-KSB
- 10-KSB versus regular 10-K:
  - different disclosure system
  - reduced disclosure requirements

"Eliminating the 'SB' forms will mitigate any perceived notion that smaller companies are currently reporting under a completely different and inferior disclosure framework."

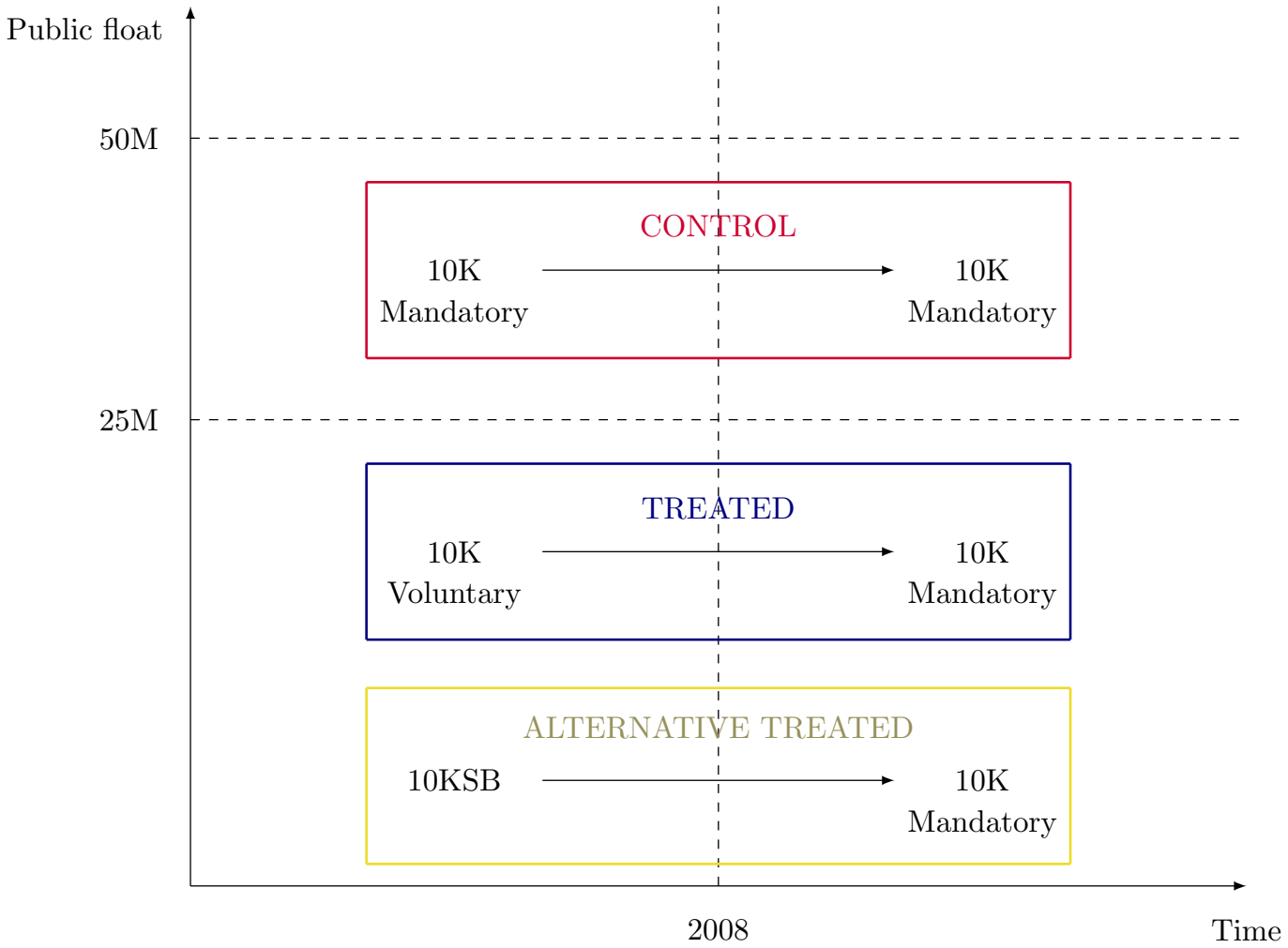
(Smaller Reporting Company Regulatory Relief and Simplification; Final Rule)

Quasi-natural Experiment

- Form 10-KSB: public float $<$ \$25 million
- Some firms below \$25M reported regular 10-K
  - voluntary report of a more informative form
- In 2008 the SEC eliminated SB forms: all firms report 10-K
- Voluntary disclosure became mandatory

Diff-in-Diff estimation

- Treated: firms below \$25 million that reported 10-K in 2007
- Control: firms above \$25 in 2007 (always reported 10-K)



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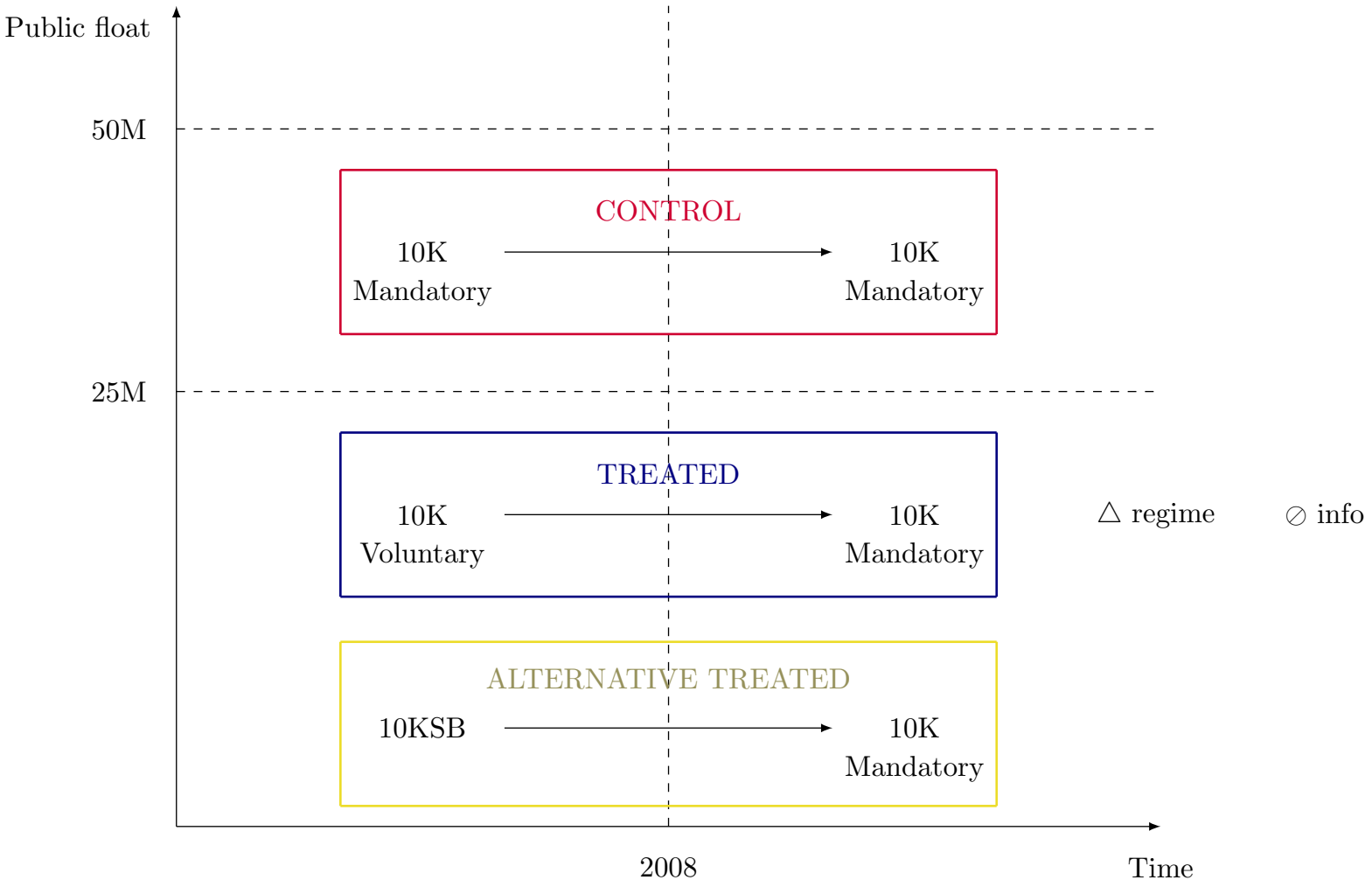

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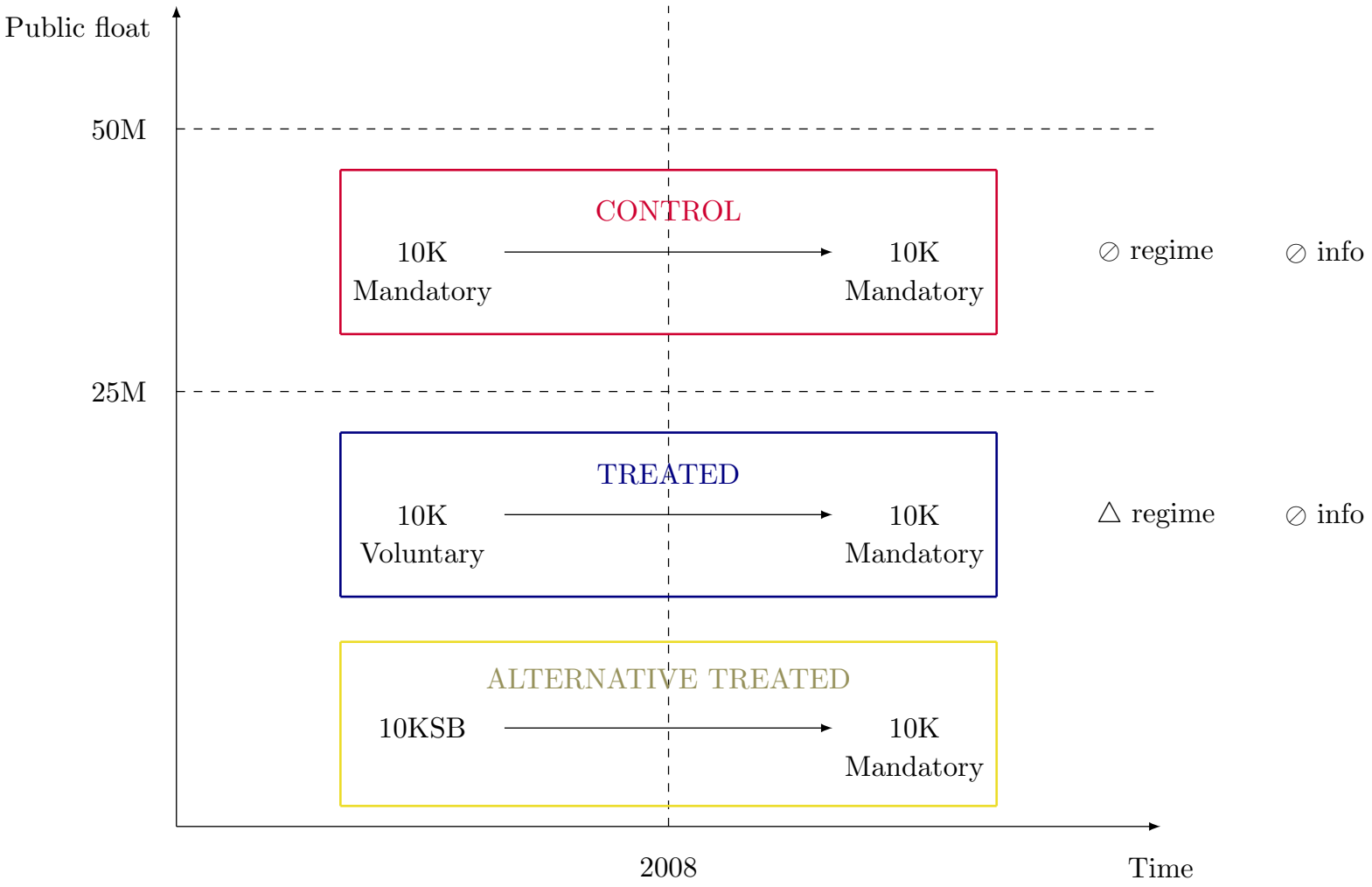

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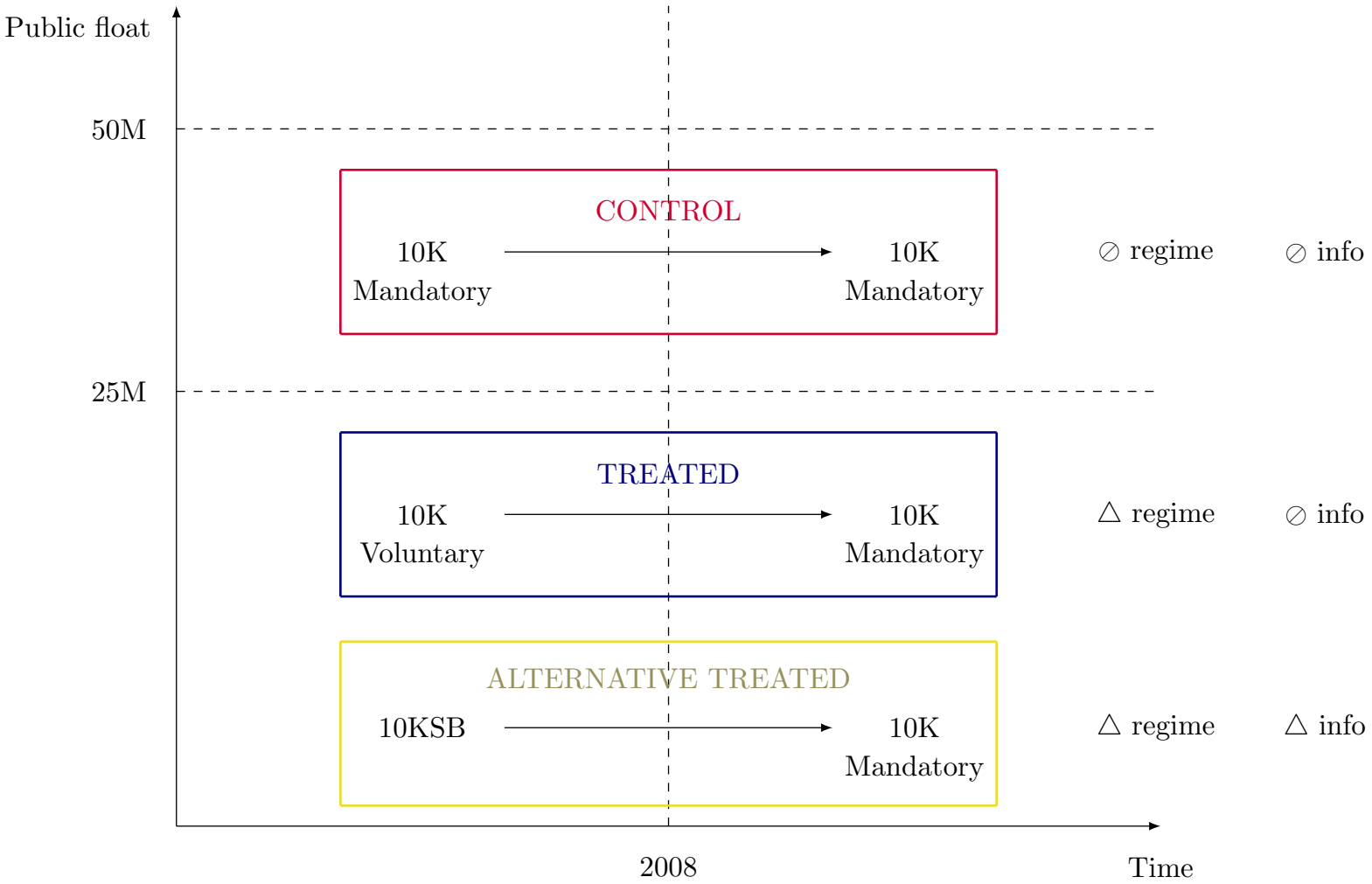


Specification

$$\text{FC}_{it} = \alpha + \beta\ \text{TREATEDxPOST2008}_{it} + \delta_1\ \text{CONTROLS}_{it-1} + \mu_i + \gamma_t + \epsilon_{it}$$

- Financial Constraints Index: Hoberg and Maksimovic (2015)
  - Debt constraints
  - Equity constraints
- Treated group: 140 firms
  Control group: 144 firms
- Controls: size, age, market to book, profitability, tangibility.

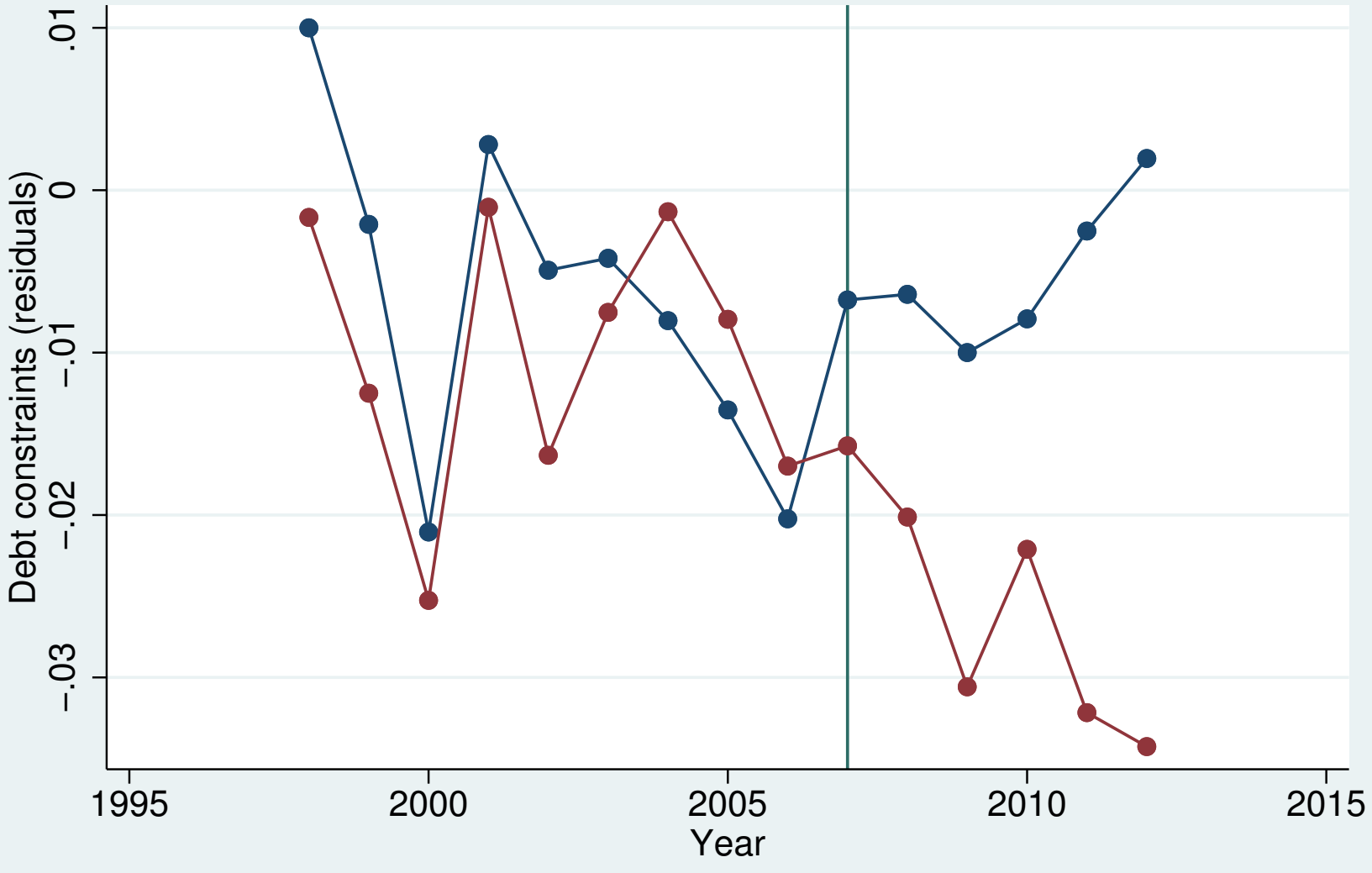
Main Results

Financial Constraints

$$FC_{it} = \alpha + \beta \text{ TREATEDxPOST2008}_{it} + \delta_1 \text{ CONTROLS}_{it-1} + \mu_i + \gamma_t + \epsilon_{it}$$

	Debt Constraints			Equity Constraints		
TREATEDxPOST2008	-0.013**	-0.016**	-0.018**	0.019**	0.021**	0.018*
	(0.050)	(0.022)	(0.017)	(0.037)	(0.023)	(0.065)
Observations	1,650	1,586	1,555	1,650	1,586	1,555
R-squared	0.036	0.054	0.067	0.028	0.042	0.055
Controls	NO	YES	YES	NO	YES	YES
Firm FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Entropy balance	NO	NO	YES	NO	NO	YES

Debt Constraints



Equity Constraints

Issuance (Leary and Roberts (2005))

- Debt issuance: 1 if firm issues debt.
- Equity issuance: 1 if firm issues equity.

$$\text{Isuance}_{it} = \alpha + \beta\ \text{TREATEDxPOST2008}_{it} + \delta_1\ \text{CONTROLS}_{it-1} + \mu_i + \gamma_t + \epsilon_{it}$$

	Total debt		
TREATEDxPOST2008	0.130***	0.130***	0.140***
	(0.004)	(0.004)	(0.003)
Observations	1,769	1,767	1,738
R-squared	0.016	0.024	0.026
Controls	NO	YES	YES
Firm FE	YES	YES	YES
Year FE	YES	YES	YES
Entropy balance	NO	NO	YES

- Increase in debt issuance
- No effect on equity issuance

Investment

- CAPX/sales
- XRD/sales

$$\text{INV}_{it} = \alpha + \beta\ \text{TREATEDxPOST2008}_{it} + \delta_1\ \text{CONTROLS}_{it-1} + \mu_i + \gamma_t + \epsilon_{it}$$

	CAPX/sales			R&D		
TREATEDxPOST2008	0.047*	0.042**	0.086*	0.065	0.063	0.146
	(0.058)	(0.050)	(0.055)	(0.653)	(0.676)	(0.659)
Observations	1,843	1,780	1,744	1,843	1,780	1,744
R-squared	0.005	0.010	0.039	0.012	0.024	0.071
Controls	NO	YES	YES	NO	YES	YES
Firm FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Entropy balance	NO	NO	YES	NO	NO	YES

- Increase of investment in capital, plant, and equipment.
- No effect on R&D

Interpretation

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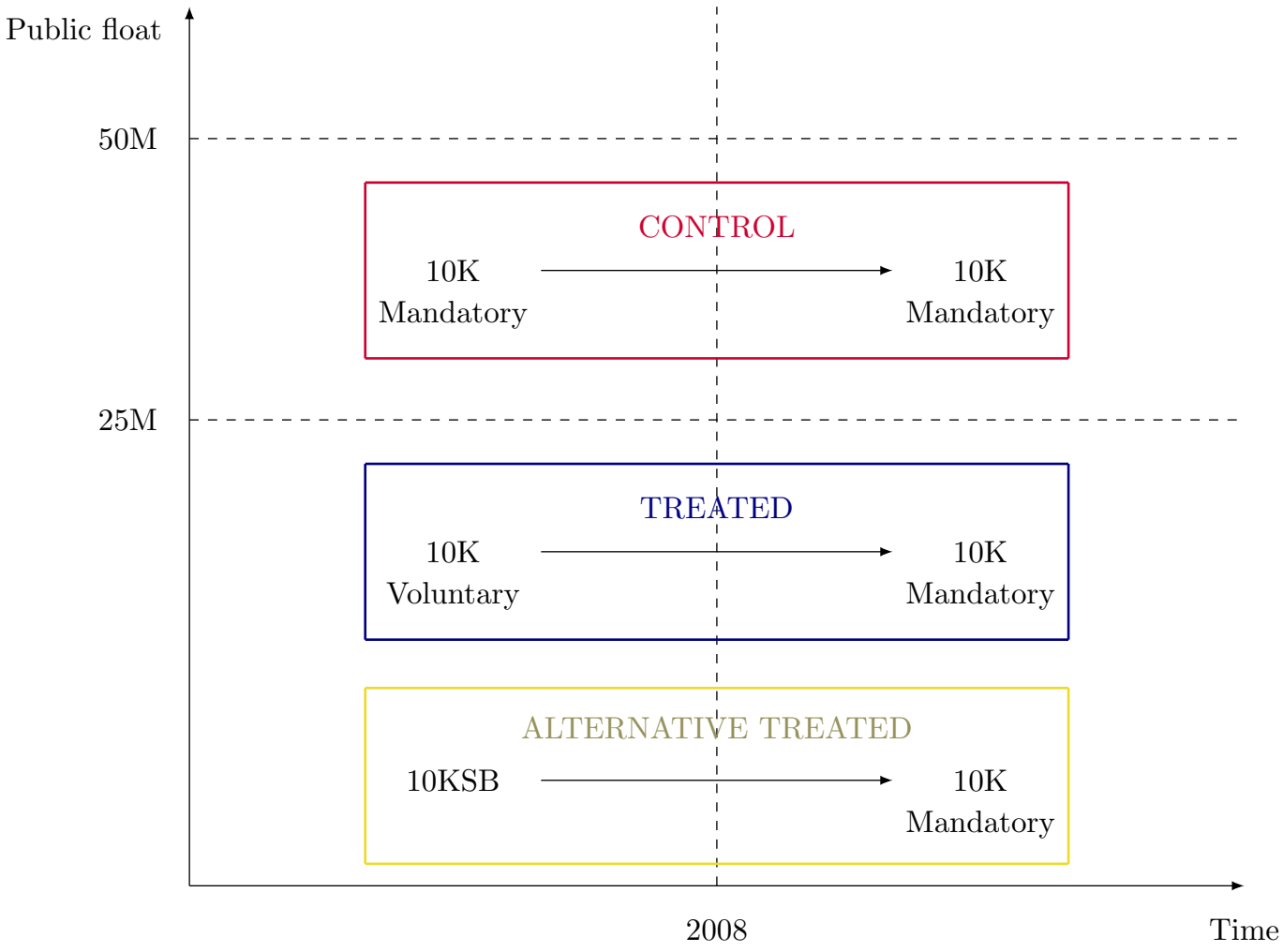

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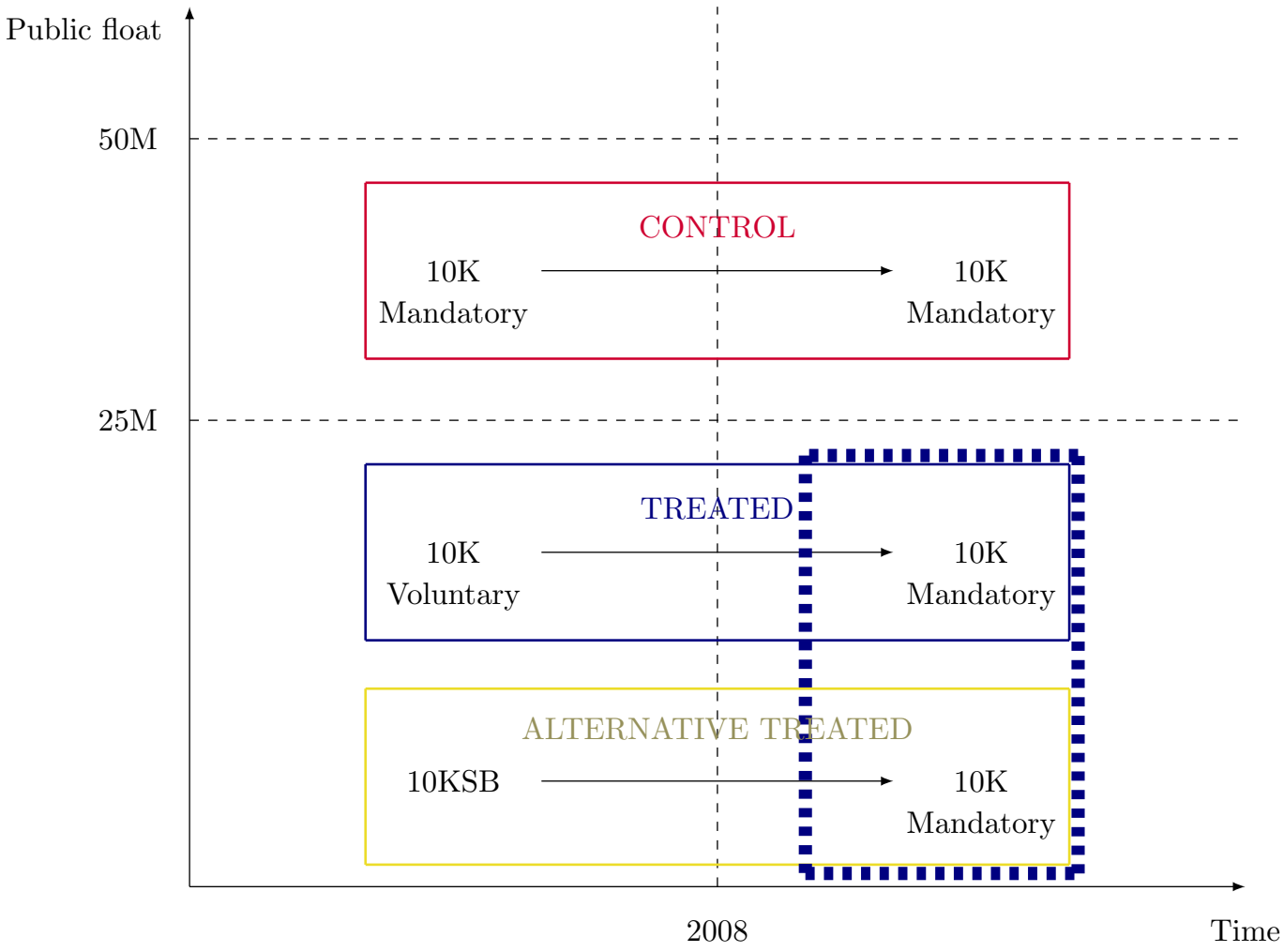

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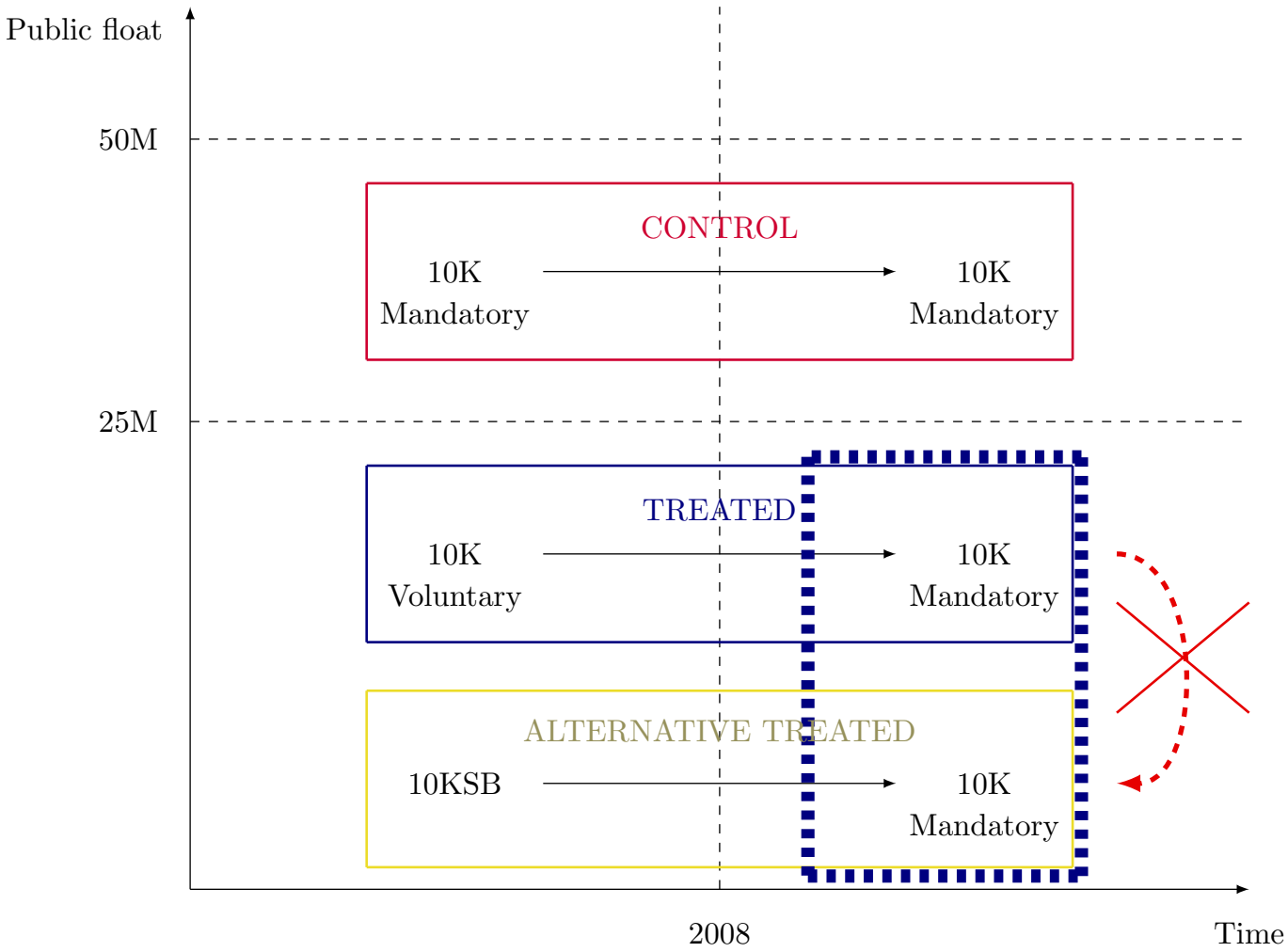

Interpretation

- Voluntary setting: signaling
  - Adverse selection problem
- Mandatory setting: credible long-term disclosure policy
  - Agency problem
- Empirical results:
  - Debt is more sensitive to agency problem (Jensen and Meckling (1976))
  - Equity is more sensitive to adverse selection (Myers and Majluf (1984))

Supporting evidence

- Effect on equity constraints (increase) is stronger when signaling seems to be more important.
  - Private information in stock prices is low (Chen, Goldstein and Jiang (2006))
  - Innovative firms
  - High product market similarity (Hoberg and Phillips (2016))
- Effect on debt constraints (decrease) is stronger when guaranteed future disclosure is more important.
  - Long-term debt
  - High proprietary cost of future disclosure

Conclusion

Voluntary Disclosure ⇒ Mandatory Disclosure

- Firms became more equity-constrained but less debt-constrained.
  - Effect on equity constraints: stronger when signaling is important.
  - Effect on debt constraints: stronger when commitment is important.
- A plausible interpretation:
  - equity-holders are more sensitive to adverse selection
  - debt-holders care primarily about moral hazard
- Public policy implications:
  - Innovative and opaque firms: voluntary regime
  - Firms investing in tangible capital: mandatory regime
- All these results only apply for small firms!