# Using as-if random around the cutoff point- RD Design

## The vote is cast: The effect of corporate governance on the shareholder value

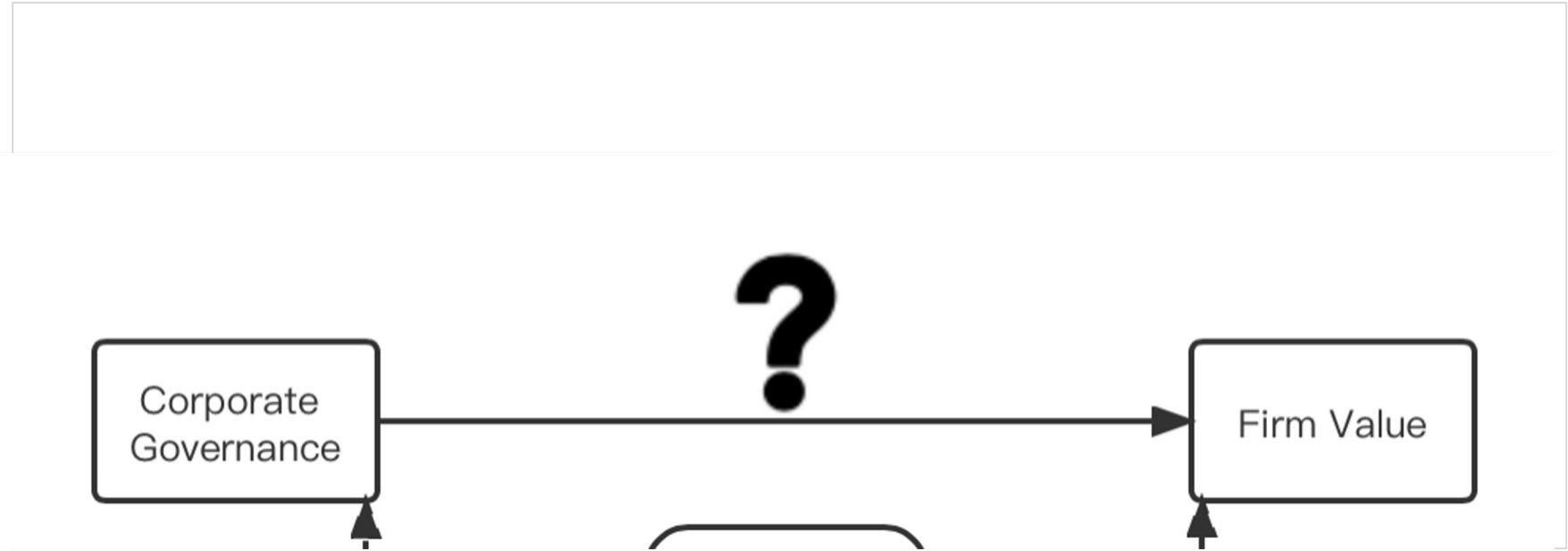
**Huan Yang 2027931**

Cunat V., Gine M., Guadalupe M. 2012. The vote is cast: The effect of corporate governance on shareholder value. Journal of Finance

1. Question
2. Why this question and  Difficulties
3. RD Design and identification
4. Research Design
5. Main Result
6. Discuss

# Main Empirical Question

Whether improved corporate governance can increase firm value? (Cunat et al., 2012) (proposal abnormal return)



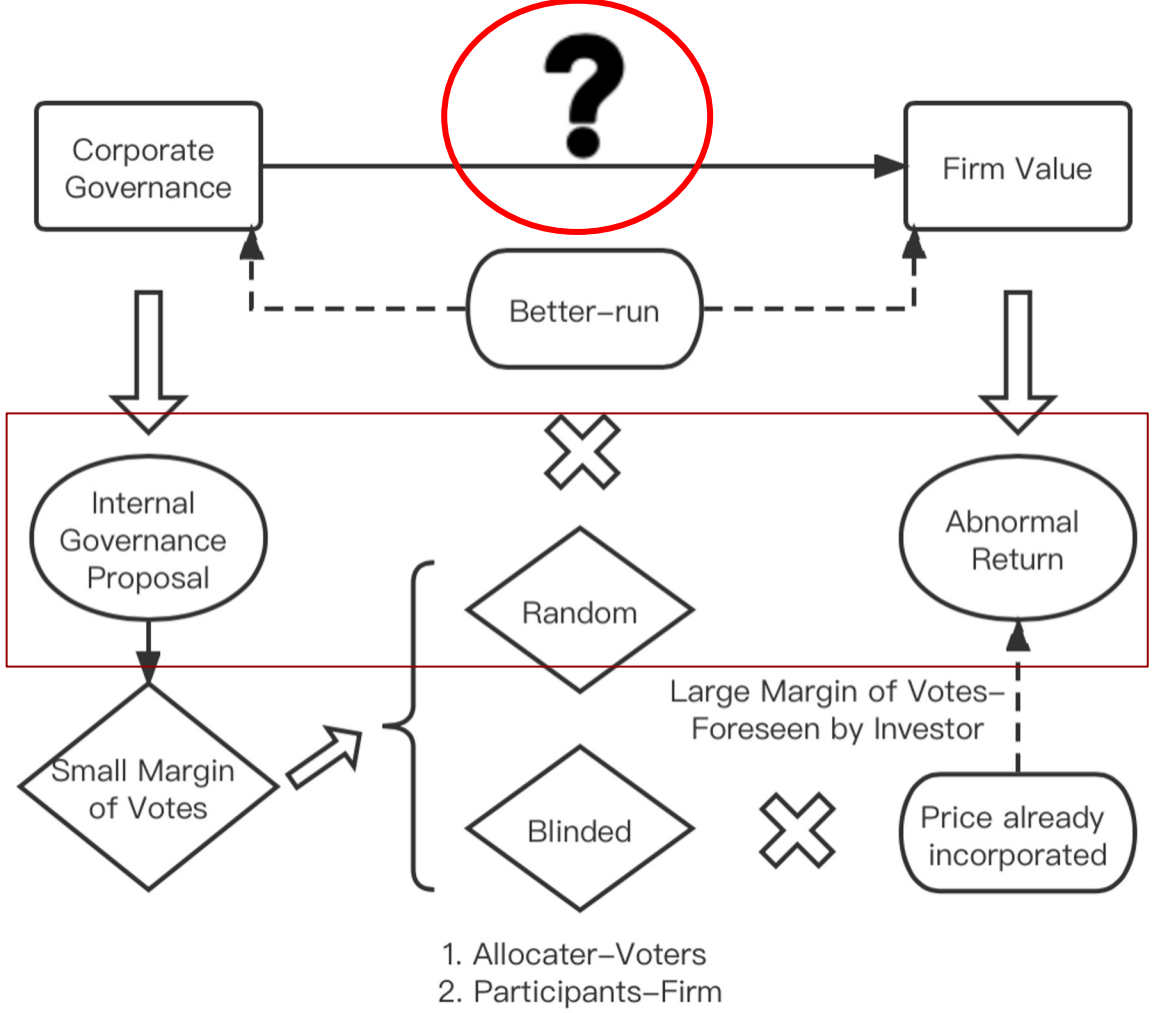
# Why this question?

Prior research just show correlations, not causal effect.

Result is mixed: (-)increased shareholder rights(e.g.proposal);

(+)firm performance(e.g. abnormal return)

(Garvey and Hanka, 1999; Bertrand and Mullainathan, 2003; Giroud and Mueller, 2010)



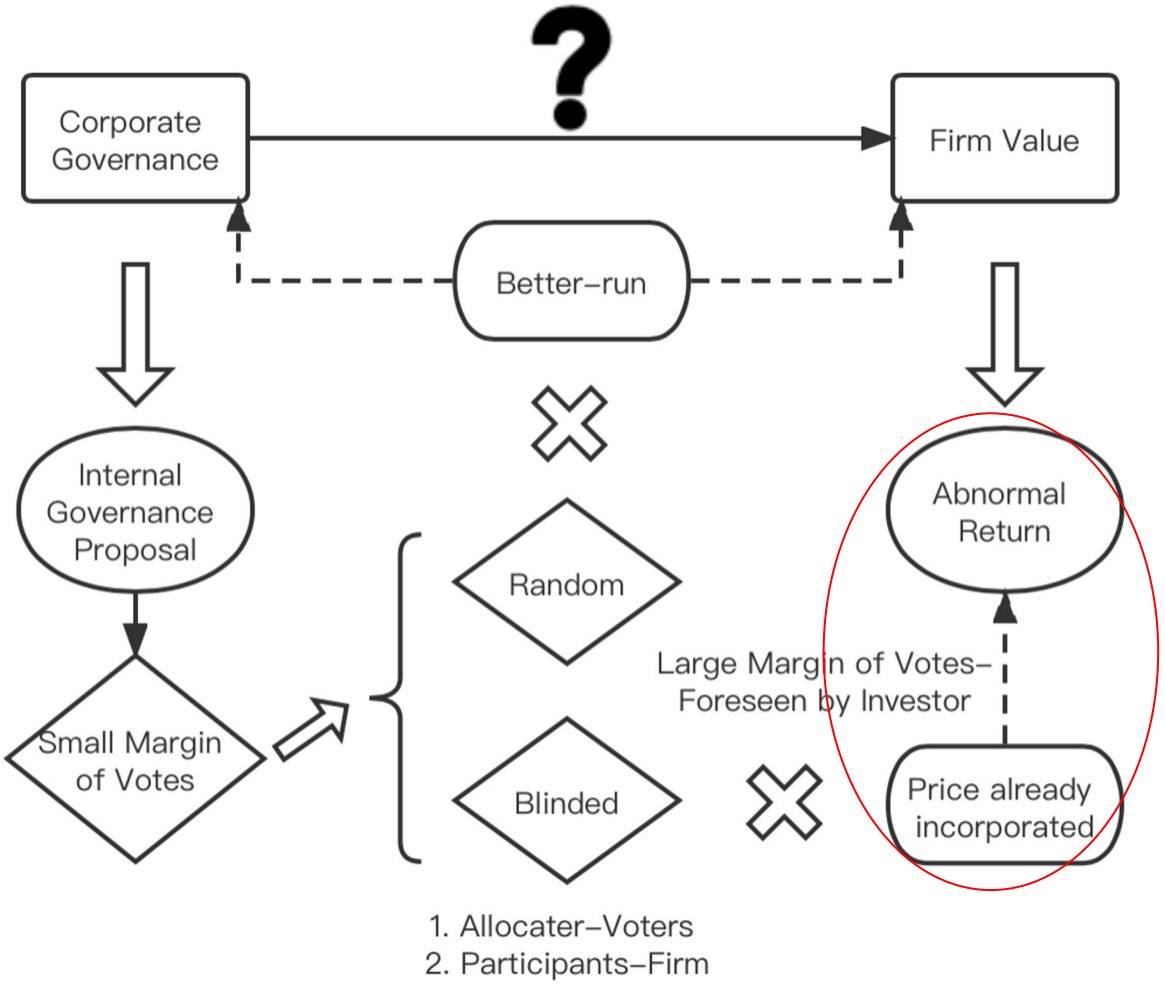
# Difficulties to tackle

Information is well known

“Foreseen the proposal outcome----information is captured and processed into price by market”

but we want isolate whole AR-Market Reaction

**Not blinded** for the investor(compliance before treat)



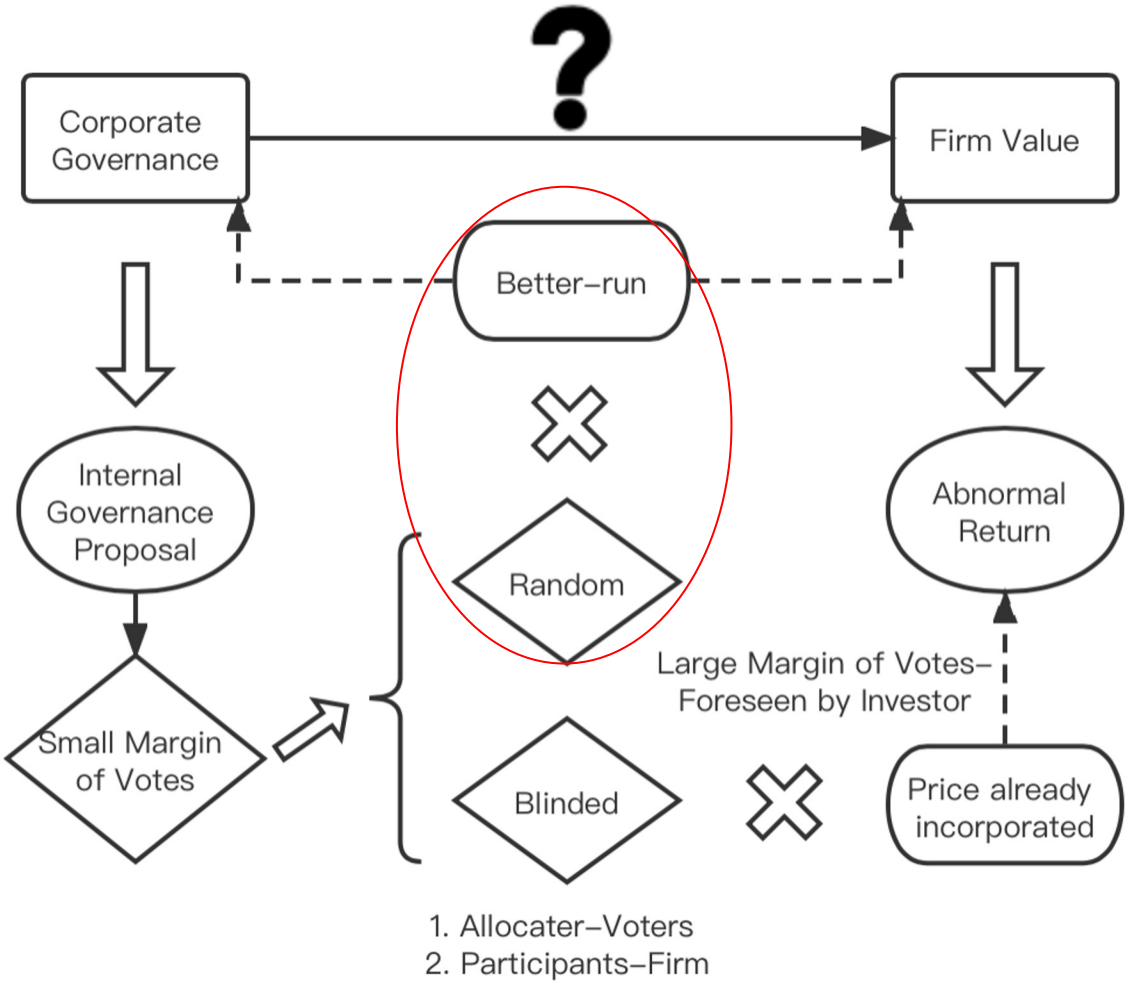
# Difficulties to tackle

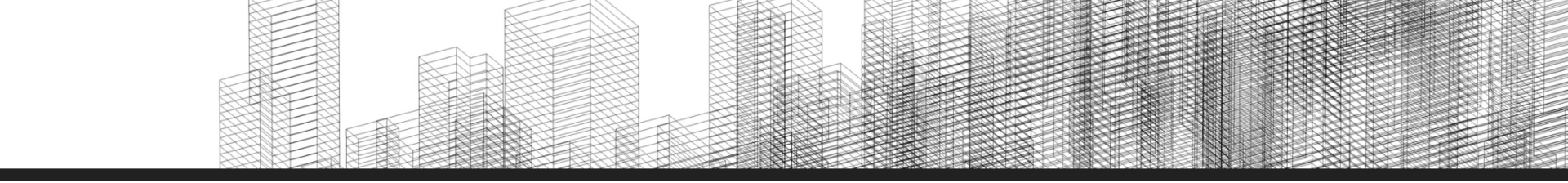
**Selection bias**

Firm Characteristics----

Better run firm will have both more chance to pass and higher firm value

Sample not ***random***

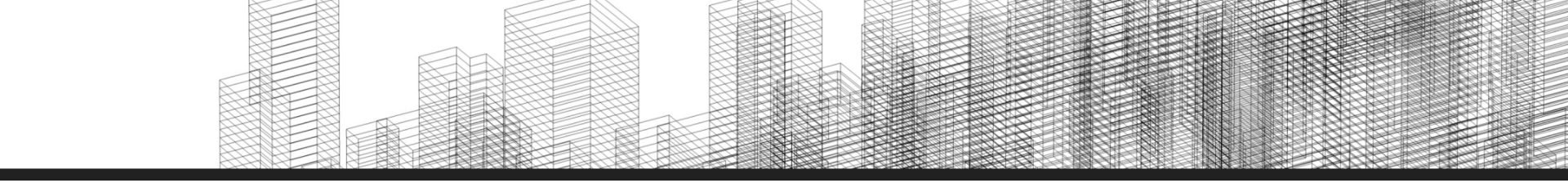




## Intuitively, how to tackle?

Treatment and control group may not have systematic difference. – random assignment

Passing or not will not be expected. No preparation, no expectation have been captured by the price. – blinded

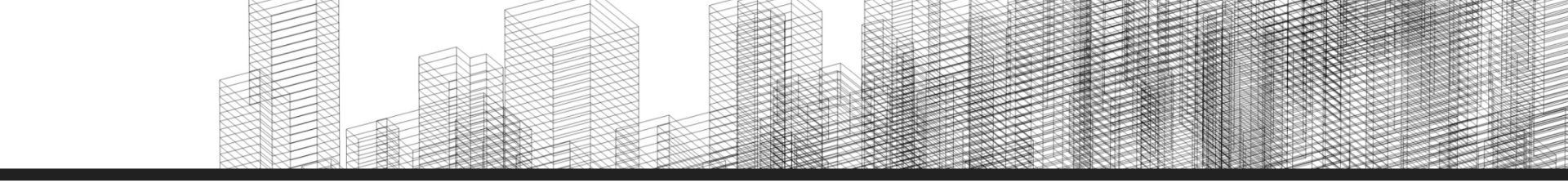


# Regression Discontinuity Design

We cannot find control group due to selection bias.

RDD can be applied when only treatment group exists. (Ivan Week 7 Slides, 2023)

So, Cunat et al. (2012) choose vote around 50% as cutoff to conduct RD Design. (random component)



## Why they can choose?
## Regression Discontinuity Design

We know passing the proposal does not represent the implementation of this proposal

According to Ertimur et al. (2010), 31.1 % passed are implemented; 3.2% not-passed are implemented. —-outcome of vote not binding.

But Lee (2008) proves that as long as it has a random component, assignment around cutoff is random. Also, Lee and Lemieux (2010) said it is valid as long as there is a discrete jump.

# Smooth around cutoff-Identification

Even if no treatment are really implemented, it should be continuous around the cutoff point selected.

They check the density of proposal, there is no jump. So we can be more confident we are not discussing number of proposal effect. No potential manipulation.

polynomials capture continuous part



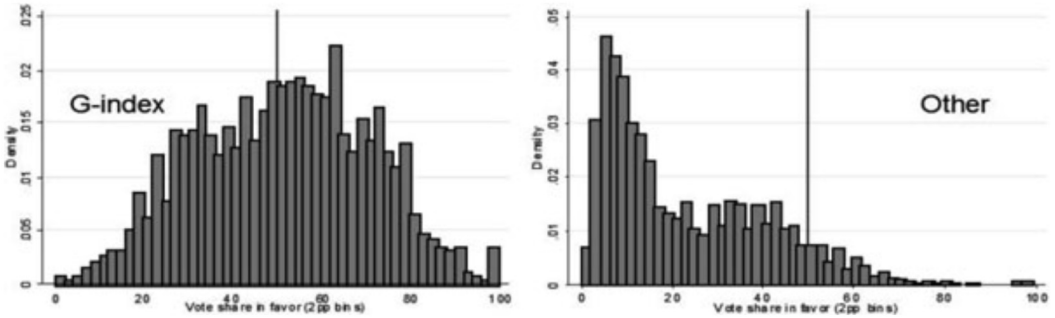



**Figure 3. Distribution of vote shares for other shareholder governance proposals.** The left panel includes G-index proposals ($N = 1{,}558$) and the right panel includes all "Other" shareholder proposals ($N = 2{,}426$) from 1997 to 2007.

# Research Design

Panel Data (Ivan Week 5 Slides, 2023)

Single proposal model

Full sample to validate

Order 4

Is it suitable?

Abnormal Return:

FFM MM

*Cellini, Ferreira, and Rothstein (2010)*

Fixed Effect Around

Pass or not in firm at t

meeting date

year fixed effect

firm fixed effet

$$y_{f,t+\tau} = D_{ft}\theta^{\tau} + P_r(v_{ft}, \gamma_{\tau}^{r}) + P_l(v_{ft}, \gamma_{\tau}^{l}) + \alpha_{\tau} + \eta_c + \lambda_{ft} + e_{ft\tau}.$$

Our interest coefficient, if passing, how much they give on abnormal return

Polynomials capture continuous effect around left and right

# Data

3,984 shareholder proposals

Extracted From Riskmetrics

Time Period 1997-2007

Panel Data (Ivan Week 5 Slides, 2023)

*Cellini, Ferreira, and Rothstein (2010)*

Fixed Effect Around

Pass or not in firm at t

outcome time

year fixed effect

firm fixed effect

$$y_{f,t+\tau} = D_{ft}\theta^{\tau} + P_r(v_{ft}, \gamma_{\tau}^{r}) + P_l(v_{ft}, \gamma_{\tau}^{l}) + \alpha_{\tau} + \eta_c + \lambda_{ft} + e_{ft\tau}.$$

Our interest coefficient, if passing, how much they give on abnormal return

Polynominals capture continuous effect around left and right

# Main Result

It proves that passing can lead to 1.3% increase of abnormal return

Carhart (1997) model (risk,b to m, size, stock momentum)/CAPM

| | Abnormal Returns | | |
|---|---|---|---|
| | FFM (1) | MM (2) | FFM (3) |
| Day of vote, $t$ | 0.013** | 0.014*** | |
| | (0.005) | (0.005) | |

# Main Result-How we know the implementation and following effect?

Use number of antitakeover provision(Management Entrenchment)—G index—as proxy to represent if the passing comes into effect.

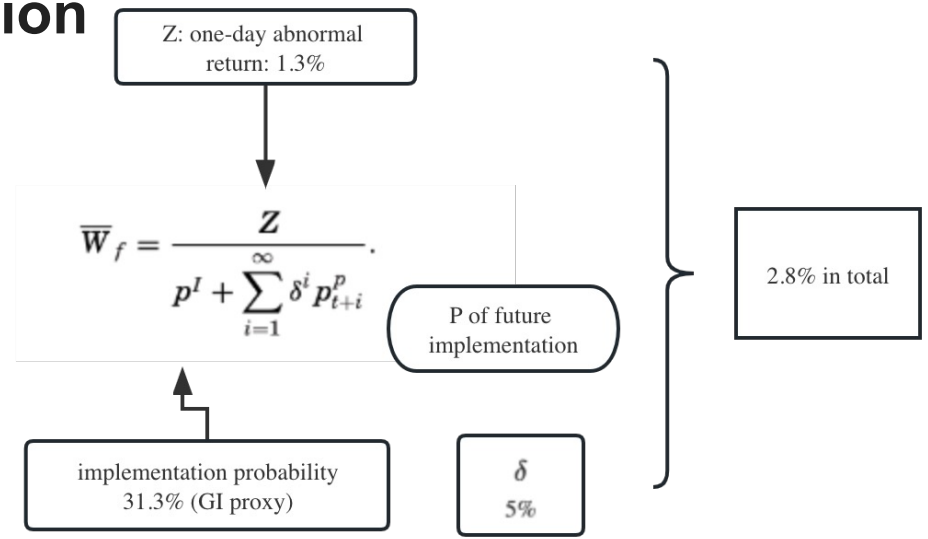
31.3% antitakeover provision has been dropped at the passing point

50.3% within 4 years

| | G-index |
|---|---|
| | (1) |
| Year of vote, $t$ | −0.313*** |
| | (0.102) |
| Two years later, $t$+2 | −0.329** |
| | (0.150) |
| Four years later, $t$+4 | −0.503** |
| | (0.229) |

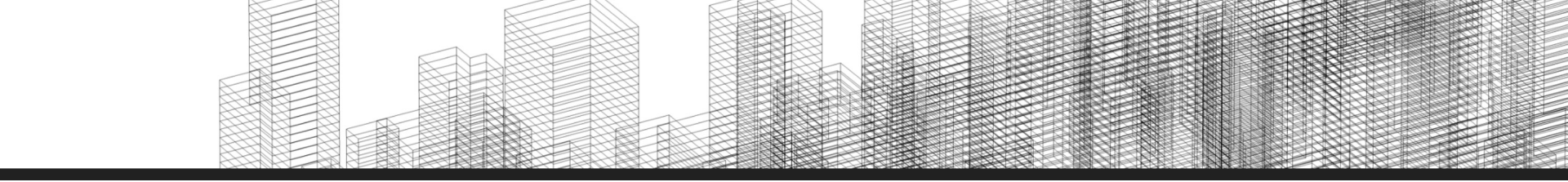
# Main Result-Calculate the total effect of proposal on market reaction

Since it is fuzzy RD,the probability of jump isn't from 0 to 1, it is just a portion of the whole effect.
Hence they divide the jump probability to recover the whole effect of implementation on firm value




Against 8.5%

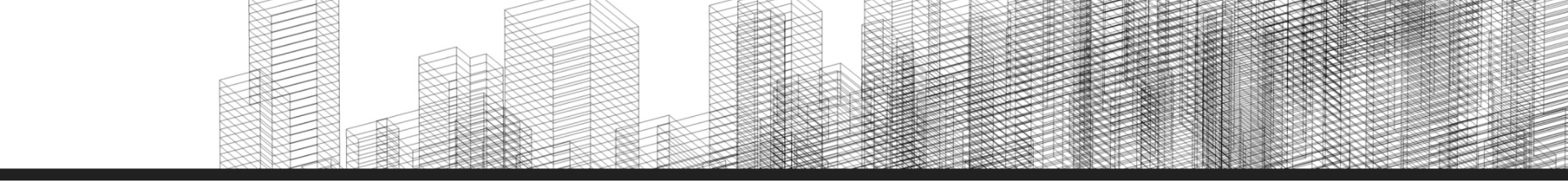
Gompers, Paul A., Joy L. Ishii, and Andrew Metrick, 2003, Corporate governance and equity prices, Quarterly Journal of Economics 118, 107–155.



# Robustness Discussion

Conduct a placebo cutoff point? If other points don’t have the effect, it proves this cutoff indeed have the effect.

Is the distribution of type of proposal well balanced?  Or How we can balanced? We can now estimate more effect in antitakeover as this paper shows.

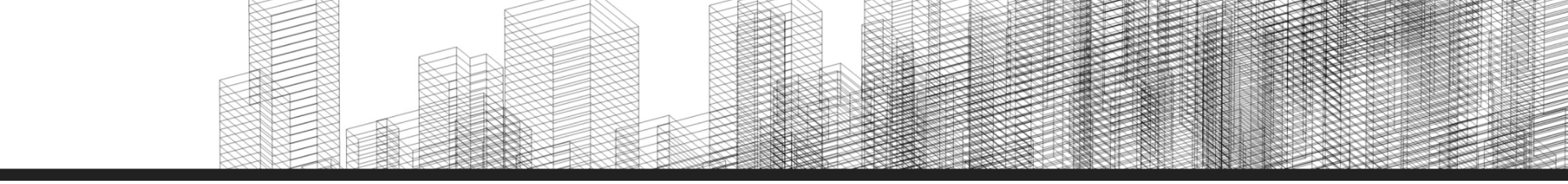


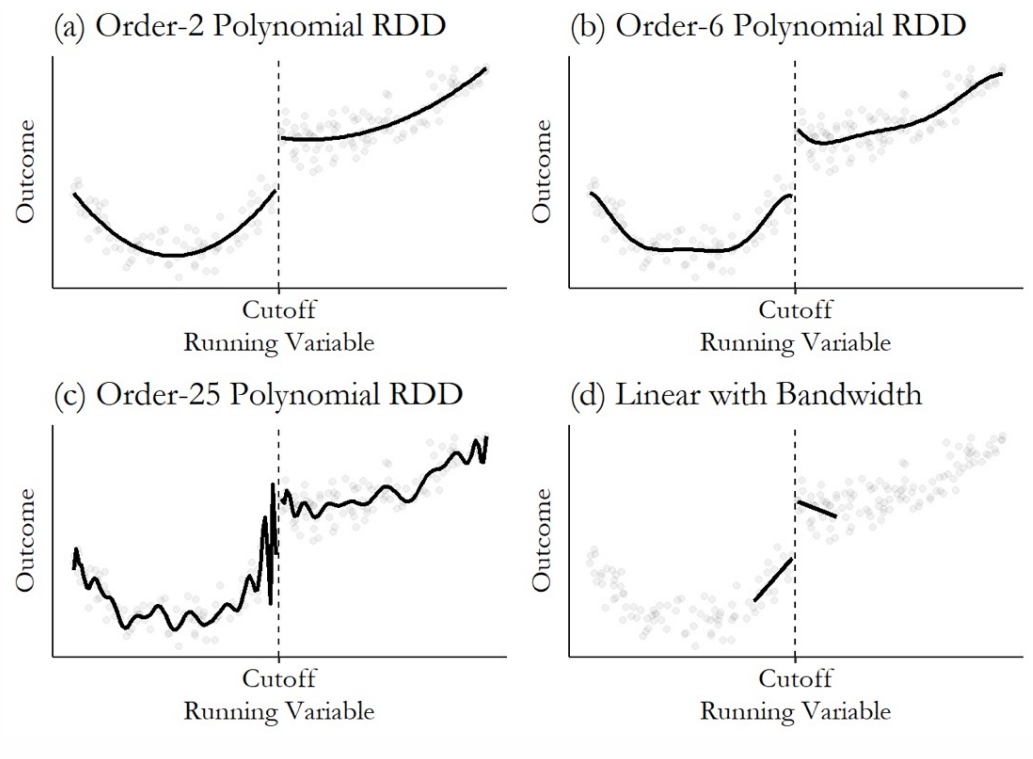
# Robustness Discussion

They use full sample, so they also introduce high order (4) polynomial, Can they tradeoff for selecting a better bandwidth?

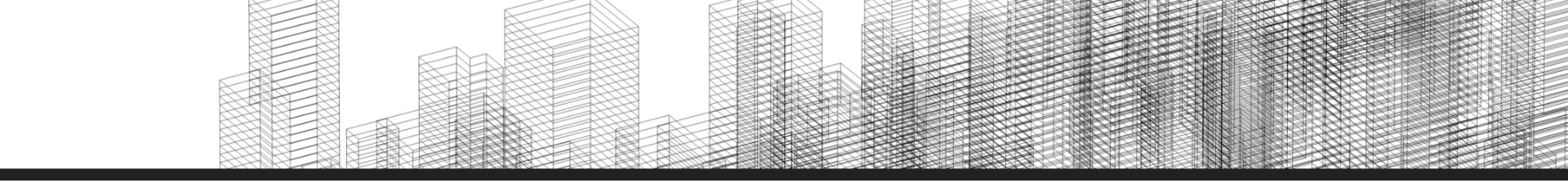
All Shareholders Proposals

| | (1) All Votes | (2) Nonclose | (3) −10; +10 | (4) −5; +5 | (5) −2; +2 | (6) −1; +1 | (7) Full Model |
|---|---|---|---|---|---|---|---|
| Pass | 0.000922 | −0.000071 | 0.00230 | 0.00761*** | 0.0105** | 0.0139* | 0.0131*** |
| | (0.000924) | (0.0012) | (0.00163) | (0.00256) | (0.00502) | (0.00756) | (0.00494) |
| Observations | 3904 | 2990 | 909 | 450 | 183 | 91 | 3904 |
| $R^2$ | 0.000 | 0.000 | 0.002 | 0.024 | 0.032 | 0.039 | 0.014 |






- Trade-off between order of polynomial and bandwidth may have benefits in more accurate estimates.



# Q

1. We may limit the inference, that is, the effect of passing a new governance rule on firm value
2. Especially, most of proposals around are about antitakeover provisions, we doubt if they can realize the general governance impact on firm value.
3. For order 4, over-fit may exist as Gelman and Imbens (2019) said(fluctuate around edge; just lucky and random trend generated), but we may use asymptotic mean squared error to ensure what is the appropriate order (Pei et al., 2022). Look further if you are interested in: Pei, Z., Lee, D.S., Card, D. and Weber, A., 2022. Local polynomial order in regression discontinuity designs. Journal of Business & Economic Statistics, 40(3), pp.1259-1267
4. Can check further how good governance practices create value and investigate the impact of each type governance proppsal on shareholder value.

# Reference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Thanks and Any Constructive Feedback are welcomed