



## Political shocks, share prices and business investment: regression-discontinuity evidence from OECD elections

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I gratefully acknowledge a travel grant from the the IAAE.

- ▶ **Research question:** what is the effect of left-wing pro-labor electoral victories on the subsequent trajectory of business investment?
- ▶ 215 elections in 14 OECD countries in the period 1960-2013;
- ▶ **Identification problems:**
  - 1) the state of the economy influences electoral outcomes;
  - 2) not all nominally left-wing parties are pro-labor (post-1992 New Labor, US Democrats, ...);
- ▶ **regression-discontinuity design** to avoid simultaneity bias;
- ▶ available **estimates of policy positions** to divide the sample in two bins, on the basis of how interventionist was the economic platform of the main Left party ('interventionist Left' and 'neoliberal Left' subsamples).

## 2 - Political shocks and business investment

### Regression discontinuity design (a brief recap)

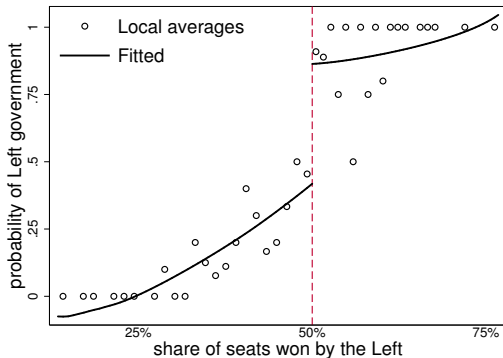
- ▶ evaluation of the effect of a non-randomly assigned treatment:  
**selection bias**
- ▶ however we know the rule determining treatment and we can exploit it: treatment is assigned when an observable **running variable** reaches a known **threshold**.
- ▶ while overall the treated and untreated are not comparable, we can **compare units just above and just below the threshold**.
- ▶ implemented by testing for a discontinuity in the expected value of the outcome, conditional on the running variable, at the threshold. (in graphical terms: plot the outcome against the running variable; test for a discontinuity at the threshold.)

**This paper** - Regression-Discontinuity to uncover the average treatment effect of the Left being in power on private investment:

- ▶ when a political side reaches a **Parliamentary majority**, its political power 'jumps'.
- ▶ In Parliamentary countries (13/14 of our sample) this leads to an **higher probability of forming a Government**. But also in the US a Parliamentary majority implies higher political power.
- ▶ **Regression-Discontinuity design:**  
**treatment:** Left parliamentary majority  
**running variable:** share of Parliamentary seats won by the Left  
**threshold:** 50%  
**outcome of interest:** business investment growth after the election
- ▶ We also estimate the effect of Left Parliamentary majority on the **probability of a Left-led Government** (interpretable as first stage of a FRD)

## Baseline results

## First Stage: jump in probability of left-wing Gov. at the threshold



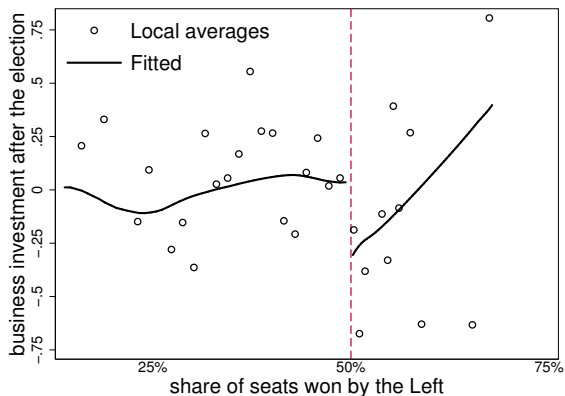
*[kernel-weighted local regression; bandwidth 3.5%]*

⇒ **Strong and significant** across different specifications and bandwidths and in both sub-samples. **At the threshold, probability that a Left-wing Government is formed jumps by at least 50%** across different specifications.

## Baseline results

- ▶ RD: Left parliamentary seats and investment after the election

Main result ('interventionist Left' subsample):



<i>Kernel-weighted local regression estimates</i>	
Reduced form	-0.48 (0.24)
First stage	0.67 (0.26)
2SLS	-0.74 (0.57)

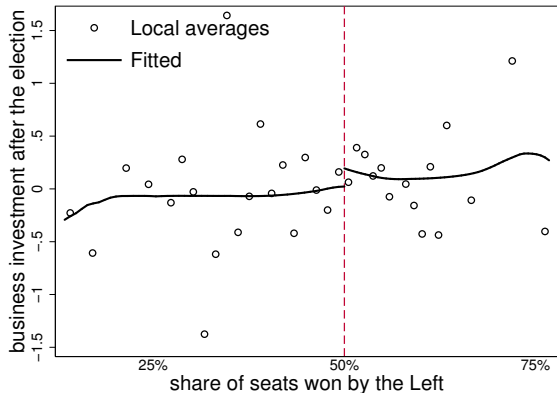
*wild-bootstrap p-value = 0.005*  
*optimal bandwidth (7.9%);*  
*S.E. clustered by countries in parenthesis.*

- ▶ a Left Parliamentary majority is associated with a decrease in post-election investment growth by 0.48 standard deviations.

## Baseline results

- ▶ RD: Left parliamentary seats and investment after the election

Control group ('neoliberal Left' subsample):

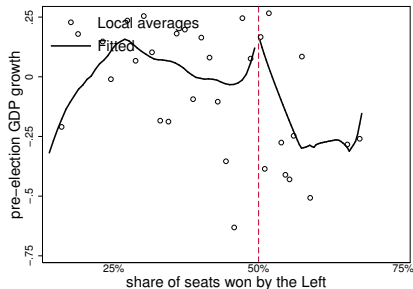


<i>Kernel-weighted local regression estimates</i>	
Reduced form	0.16 (0.37)
First stage	0.68 (0.28)
2SLS	0.26 (0.52)
<i>wild-bootstrap p-value = 0.83</i>	
<i>optimal bandwidth (9.0%); S.E. clustered by countries in parenthesis</i>	

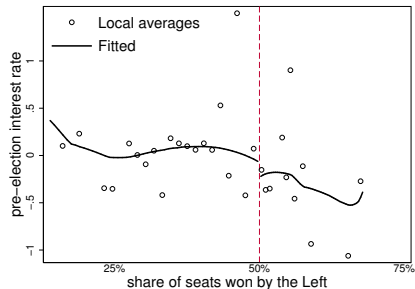
- ▶ there is no effect in the 'neo-liberal Left' subsample;

# Covariate balance

## Testing covariate balance: pre-election distribution of covariates



(a) GDP growth (p-value=0.78)

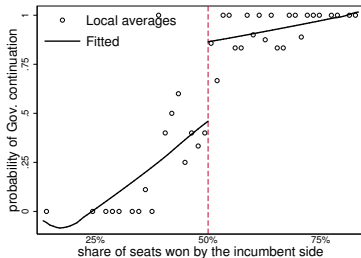


(b) Interest rate (p-value=0.52)

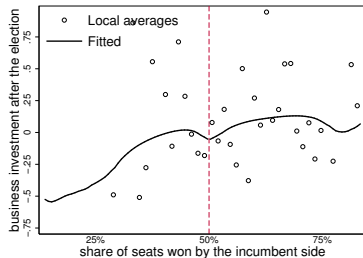
[p-value = wild-bootstrap p-value for the null hypothesis of no discontinuity at the 50% threshold]



## Test for a confounding Government-continuation effect



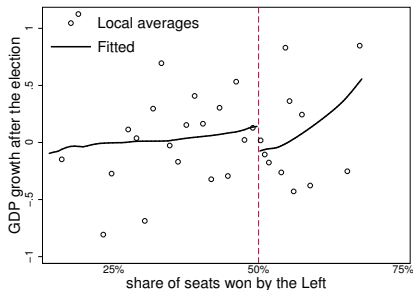
(c) First stage

(d) Jump in  $E(I|X)$ 

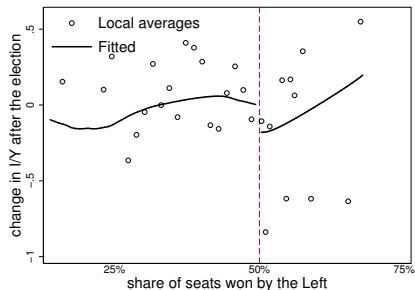
<i>Kernel-weighted local regression estimates</i>	Reduced form	0.05 (0.25)	First stage	0.67 (0.25)	2SLS	0.11 (0.33)
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wild bootstrap p-value = 0.99  
optimal bandwidth 9.6%;  
S.E. clustered by countries in parenthesis

## RD: Left parliamentary seats and other outcome variables



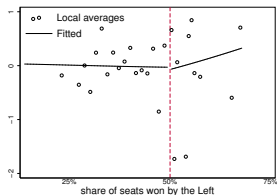
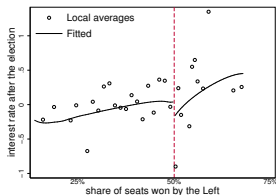
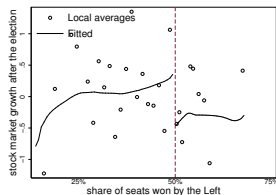
(e) GDP growth (-0.36; p-value=0.18)



(f) Change in  $I/Y$  (-0.22; p-value=0.40)

[p-value = wild-bootstrap p-value for the null hypothesis of no discontinuity at the 50% threshold]

## RD: Left parliamentary seats and potential determinants of investment

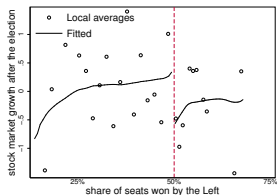

 (g) Profit share ( $p=0.99$ )

 (h) Real interest rate ( $p=0.35$ )

 (i) Stock market ( $p=0.005$ )

[ $p$  = wild-bootstrap  $p$ -value for the null hypothesis of no discontinuity at the 50% threshold]

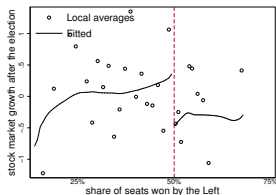
### Results:

- ▶ no effect on interest rate and profit share.
- ▶ significant and strong effect on stock market valuations: a Left victory causes a 1.1 standard deviations decrease in the growth rate of domestic share prices in the quarter of the election.
- ▶ consistent with previous findings from prediction markets and US Presidential elections (Snowberg, Wolfers and Zitzewitz, QJE 2007)

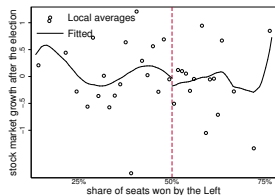
## RD: Left parliamentary seats and stock market growth



(j) Without controls ( $p=0.005$ )



(k) Controlling for decade f.e. ( $p=0.005$ )

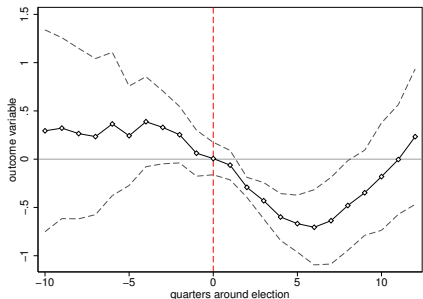


(l) Neoliberal Left subsample ( $p=0.91$ )

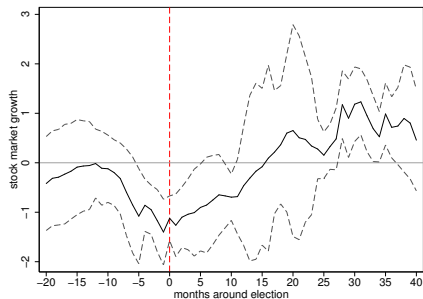
[ $p$  = wild-bootstrap  $p$ -value for the null hypothesis of no discontinuity at the 50% threshold]

Assessing the dynamics of the effect:  
a 'moving-average regression discontinuity'

$$l_{i,e,q} = \alpha_t + \gamma_t Z_{i,e} + f_t(x_{i,e}, m_{i,e,q}) + \epsilon_{i,e,q} \quad \text{for } t-7 \geq q \geq t \quad (1)$$



(m) Business investment growth



(n) Stock market growth

### Summing up results:

- ▶ Y-o-y business investment growth tends to be lower by **around 0.5 standard deviations (~ 5% of investment)** in the two years following a left-wing electoral victory;
- ▶ this is true only when the Left is relatively more radical: there is no effect of 'neoliberal Left' victories.
- ▶ there is **no Government-continuation effect**: private investment is not sensitive to incumbent re-election vs. Gov't change;
- ▶ negative but not significant effects of left-wing victories on both GDP growth and investment share; no effect on profit share and real interest rates; large effect on **stock market valuations**.
- ▶ the negative effect on investment is mainly felt in the six quarters after the election, then fades out; stock market growth decrease mainly concentrated in the three months around the election.