Trade-offs between employment and wages in recessions: Evidence from labour market reforms

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Aims of the event

- ‘Enrich and complement the in-house knowledge about the *tools to measure the impact of structural reforms on income inequality’*
- *‘Understanding how policies can be better designed* to enhance equality while fostering growth’

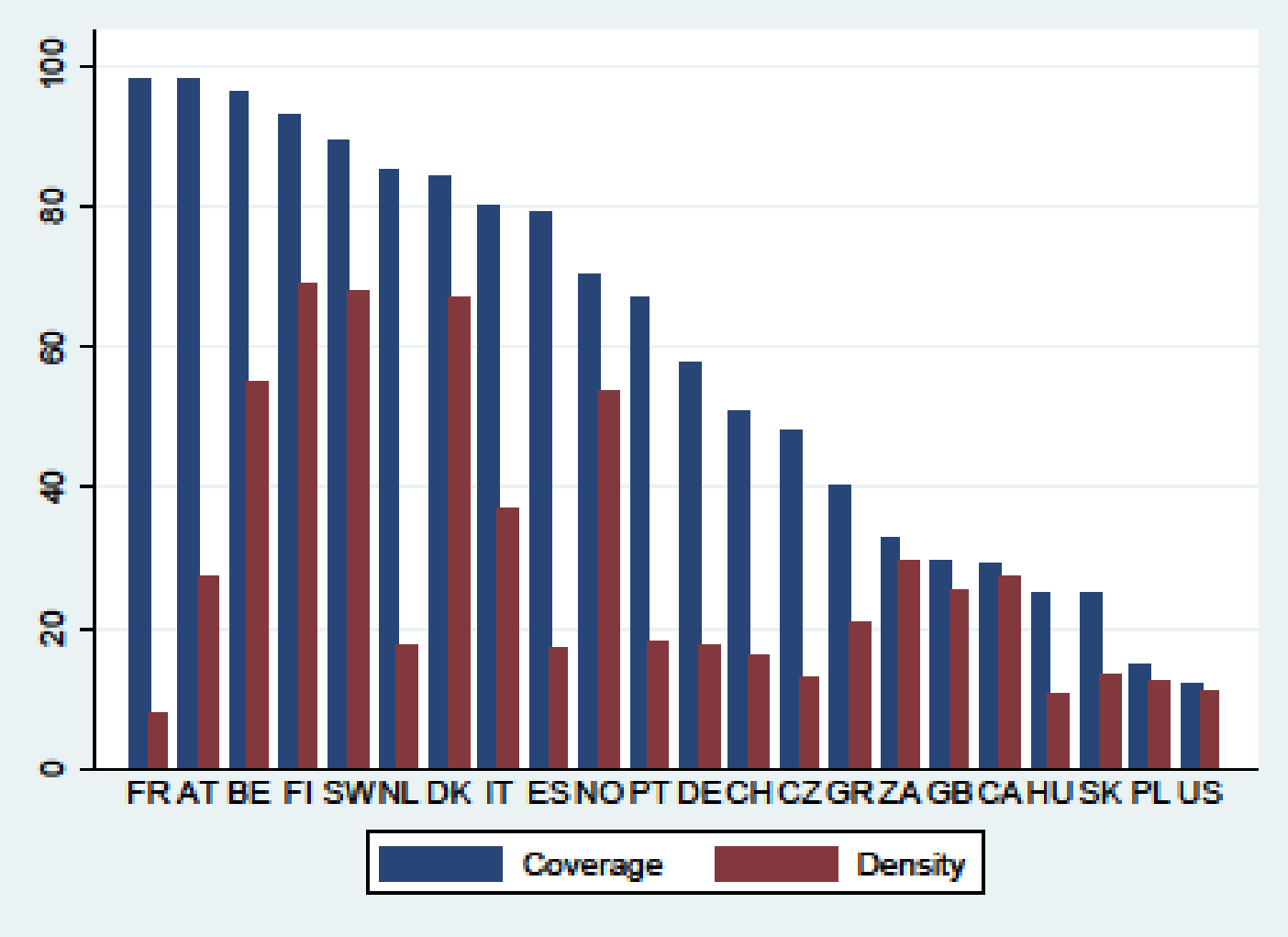
Labour market reforms in PT, 2011-13

- More flexible permanent employment contracts
- Reduction of severance pay
- More generous unemployment benefits
- Reduction of bank holidays and overtime pay
- Increase of max duration of fixed-term contracts
- Modernisation of the Public Employment Services
- Introduction of new Active Labour Market Programmes
- *Decentralisation of collective bargaining*

Evaluations

- Reemployment and Substitution Effects from Increased Activation: Evidence from Times of Crisis (2014), IZA DP 8600, with S. Pessoa e Costa link
- Should the Maximum Duration of Fixed-Term Contracts Increase in Recessions? Evidence from a Law Reform (2016), IZA DP 10206, link
- The Third Worker: Assessing the Trade-off between Employees and Contractors (2016), IZA DP 10222, link
- *No Extension without Representation? Evidence from a Natural Experiment in Collective Bargaining (2016), IMF WP 16/143, with A. Hijzen link*
- Working to Get Fired? Regression Discontinuity Effects of Unemployment Benefit Eligibility on Prior Employment Duration (2016), IZA DP 10262, link
- Do wages increase when severance pay drops? Not in recessions (2016), CGR WP 77, link
- Labour market reforms in Portugal: A preliminary assessment, OECD, 2017, link

Union density and *collective bargaining* coverage, selected countries



Source: ILO (2013)

Background

- Renewed interest in *collective bargaining* since the financial crisis
  - Affects the responsiveness of wages and working hours to aggregate shocks
  - Affects consumption and aggregate demand
- Policy debate focused on the degree of centralization of bargaining
  - Common view that centralised/decentralised systems dominate sector-level bargaining
  - However, experiences diverge, including among countries where sector-level bargaining is widespread
- To improve our understanding of collective bargaining more attention needs to be paid to the specifics -> go micro
  - E.g. scope for flexibility at the firm level, effectiveness of coordination between bargaining units, reach of sector-level collective agreements

Sector-level bargaining and the role of extensions

- Macro-economic importance of collective bargaining systems hinges crucially on the degree of coverage
  - Extensions are key tool for achieving high coverage
- Extensions widen the coverage of collective agreements beyond the membership of the social partners to all workers in a sector
  - limit scope of competition based on working conditions
  - ensure minimum standards and reduce inequality
  - reduce transaction costs of individual negotiations

Collective bargaining reform in PT

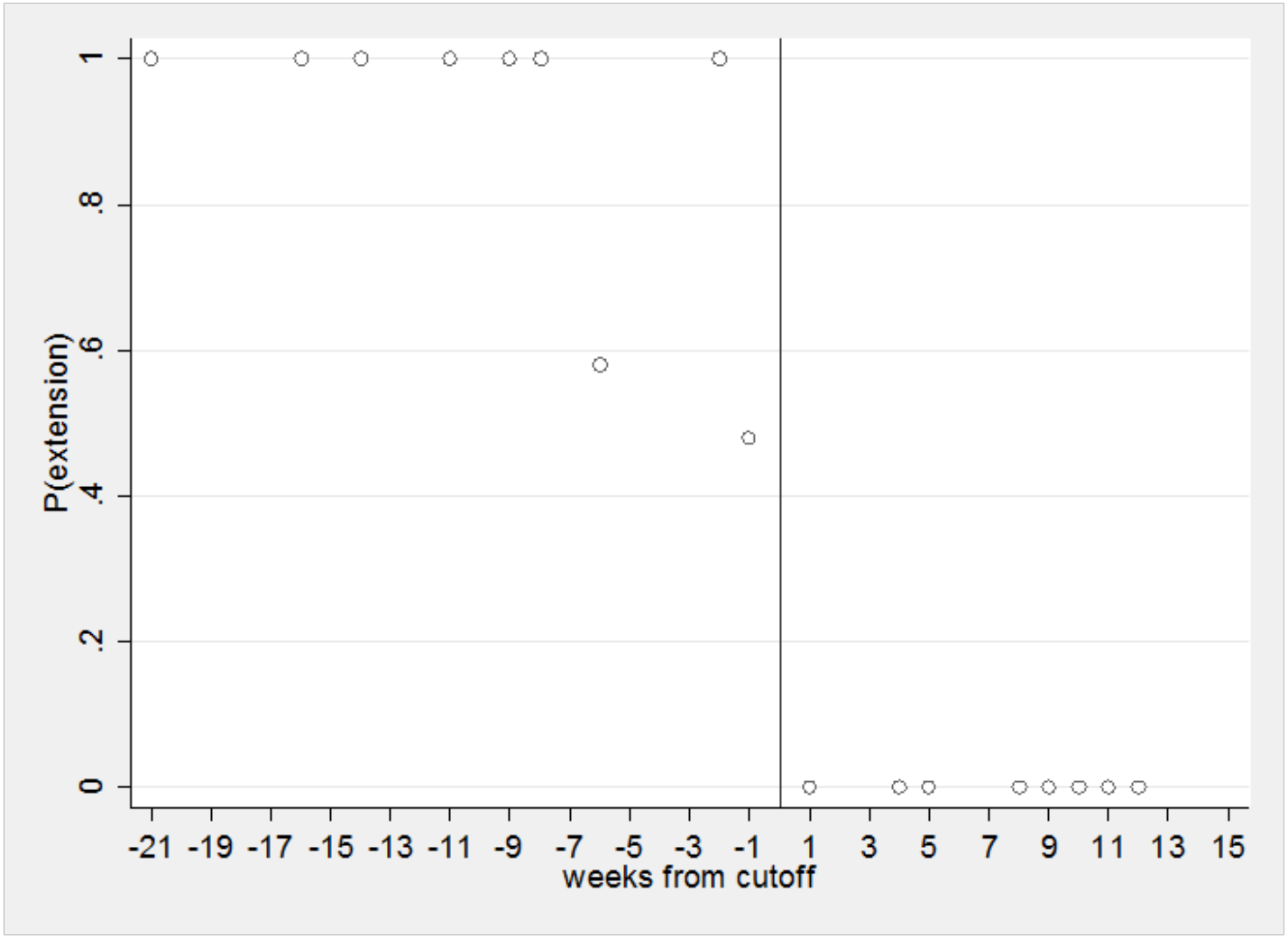
- Until May 2011: sectoral agreements were virtually always extended
- June 2011: the new government suspended extensions with immediate effect
- In 2012, the labour reform revised extension procedures
  - Subject to representativeness criteria (workers of employer association firms > 50% sector workforce)
  - Extensions no longer entered into force retroactively at the date of the collective agreement
- In 2014, extensions procedures were again revised
  - Representative criteria only apply when less than 30% of firms are small -> largely a return to the pre-2011
- In 2017, representativeness criteria were dropped completely

Counterfactual evaluation approach

In 21 June 2011, the new government suspended extensions with immediate effect:

- Delay between the signing of sector agreements and their extension -> sharp drop in the probability of extension from March 2011 (publication date; see next slide)
- The suspension was not anticipated (or announced) -> in principle, agreements published just before and after 1 March 2011 should be similar in terms of their constituency and contents (but see results on balancing)

The probability of extension drops to zero in first week of March 2011



Methodology

- Use regression discontinuity design (RDD) that focuses on the sharp decline in the probability of extension around 1 March 2011

- More specifically, we use the following model ("sharp RDD")

$$y_i = \alpha + \delta D_i + \gamma f(t_i - T) + v_i$$

  - Y: change in the growth rate (employment)
  - D: dummy that equals if treated, i.e. agreements is extended
  - f(.): a function that controls for the independent effect of relative time

  -> drop the two agreements pre-March 2011 that were not extended

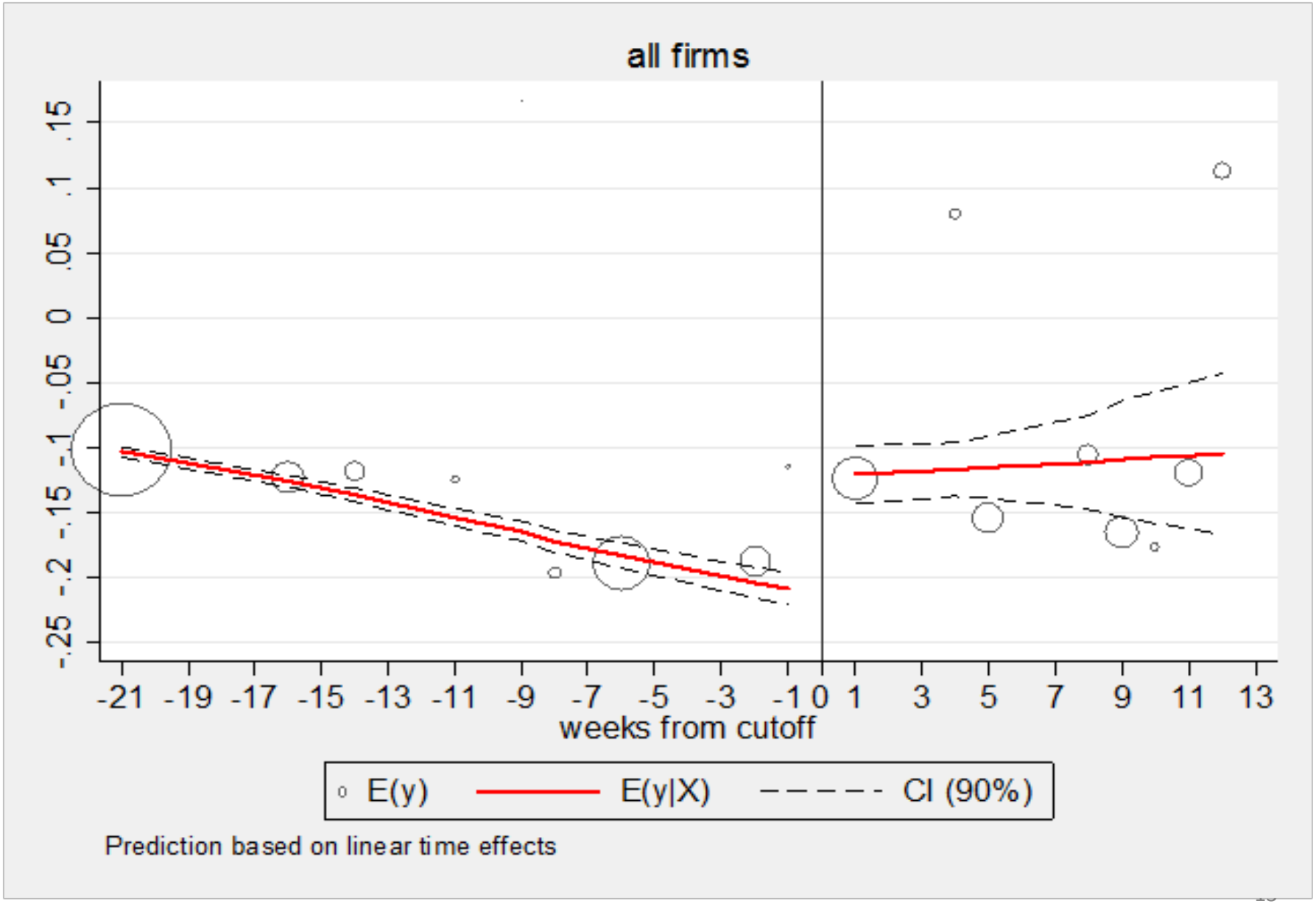
- Alternatively, use Fuzzy RDD to take account of the gradual decline in treatment probability by using the cutoff date as an instrument for the signature date

Data sources

- Personnel Records *(Quadros de Pessoal)*
  - Matched employer-employee panel (incl. 2009-2013)
  - Info on employer association affiliation in 2010
  - Info on collective agreements of each worker (incl. following extension)
  - Info relates to October of each year

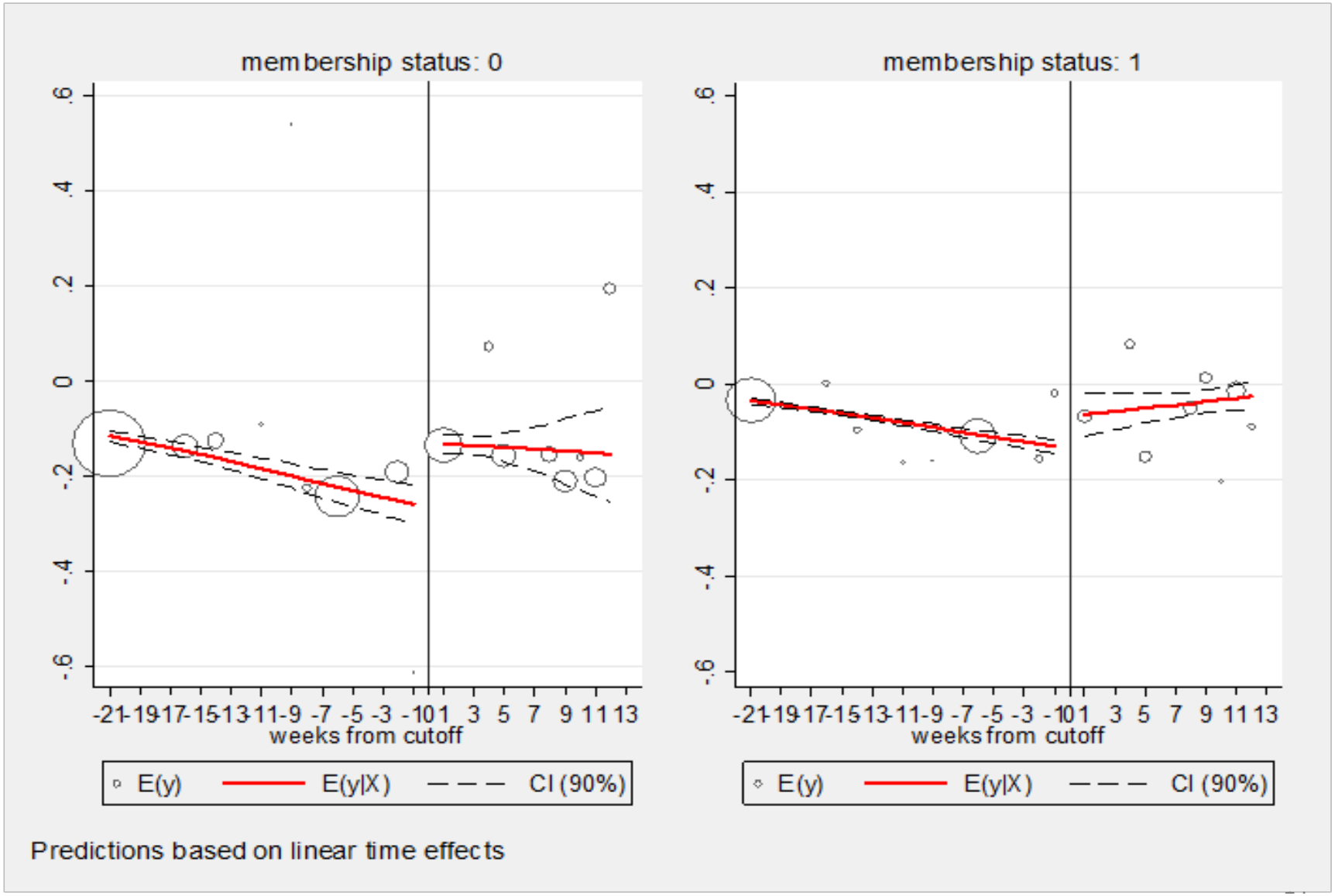
- Ministry of Labour (DGERT)
  - Public info on collective agreements, including timing and, if applicable, their extensions (but different code than in QP)
  - Initial focus on (sectoral) agreements published between Sept 2010 and Aug 2011 (40 in total covering about 20% of the workforce)

Main results: Change in empl growth, 2010-2011



The effects of extensions by affiliation status

Change in employment growth, 2010-2011



Results on inequality

Δp5 denotes the change in the 5th percentile (of the cell's log base wage residual) between 2010 and 2011,

	(1) Δp5	(3) Δp10	(5) Δp15	(7) Δp20
Treatment effect	0.0493	0.0494	0.0519	0.0184
	(0.0232)	(0.0213)	(0.0296)	(0.0147)
	**	**	*	
Constant	-0.0310	-0.0087	-0.0266	-0.0109
	(0.0213)	(0.0185)	(0.0298)	(0.0155)
Relative time effects	Linear	Linear	Linear	Linear
Observations	58	58	58	58
R-squared	0.1019	0.2675	0.2170	0.0756

Weighted by 2010 employment. Robust standard errors clustered.

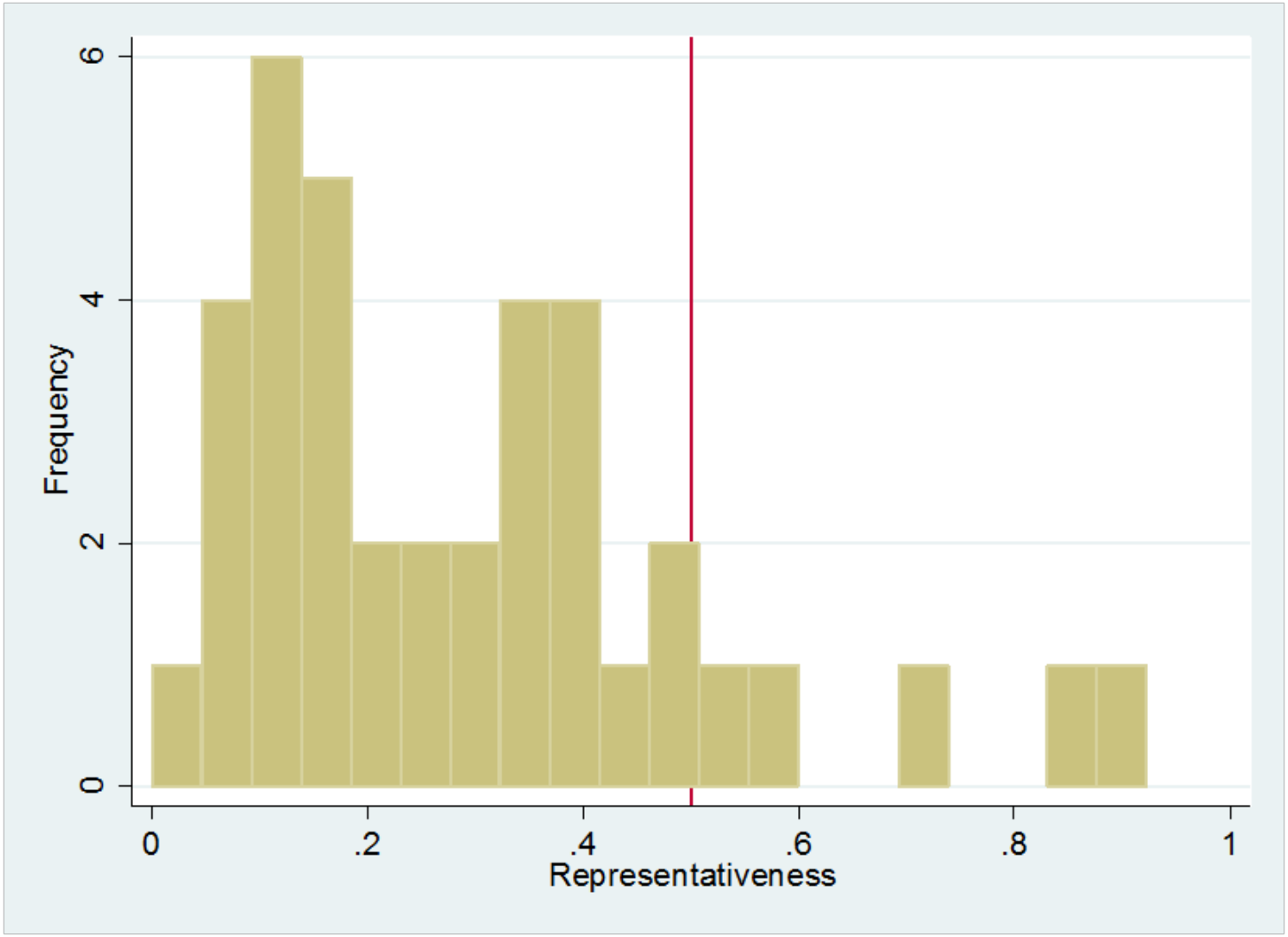
Conclusions

- Illustration of counterfactual micro approach in structural reform evaluation
- By reducing employment, extensions can amplify the effects of the economic crisis
  - The adverse effects of extensions appear strongest for non-affiliated firms
  - Representativeness criteria may have limited job losses – and created incentive for filiation
- In a trade-off with employment, extensions appear to reduce wage inequality
- Important lessons for PT but also for other MSs with large gaps between union density and coverage (eg FR)

Additional slides

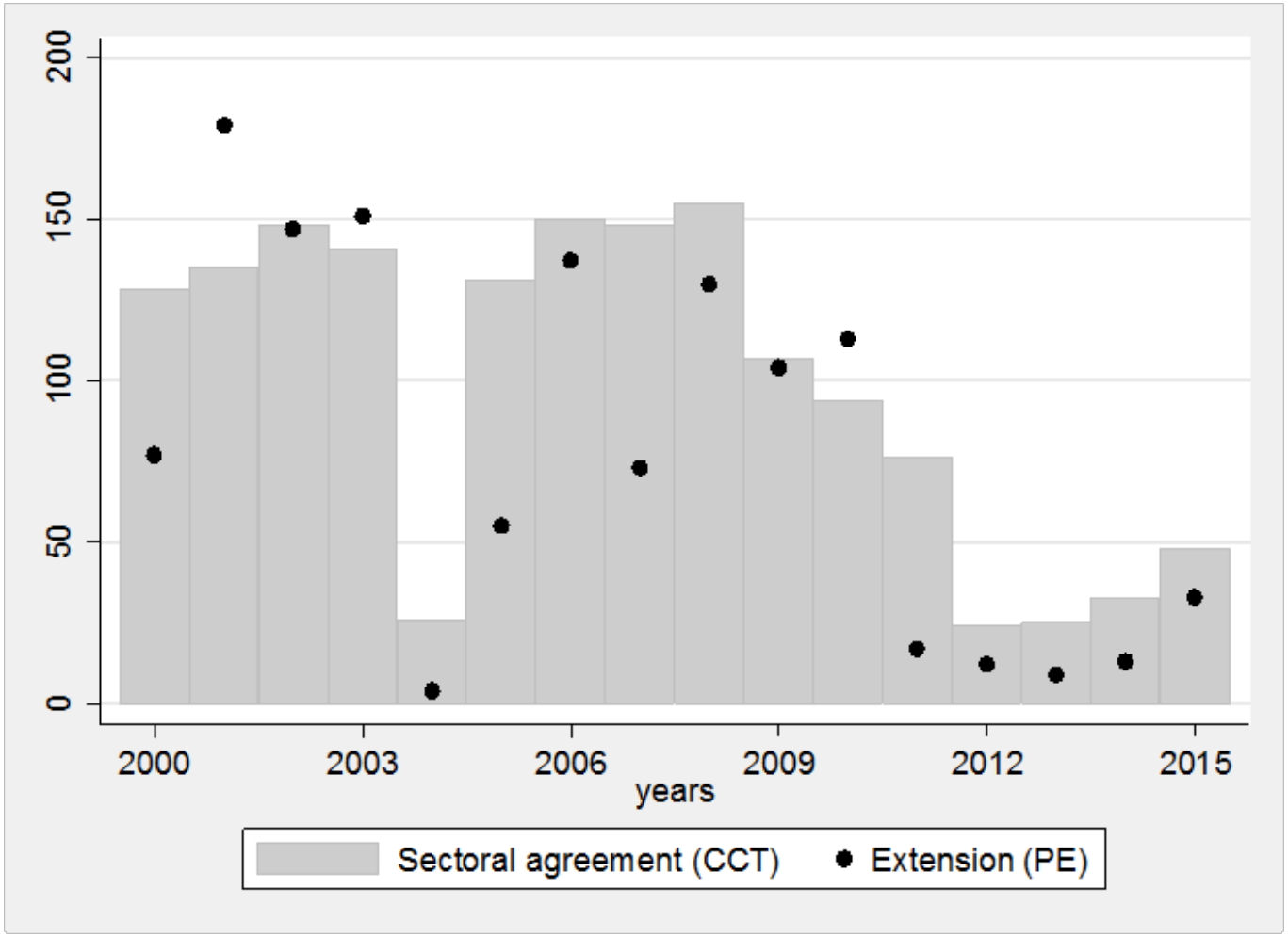
Representativeness tends to be well below 50%

of agreements by share of workers in affiliated firms



Sharp decline in number of *new* agreements & extensions from 2011

The number of sectoral collective agreements and extensions by year, 2000-2015



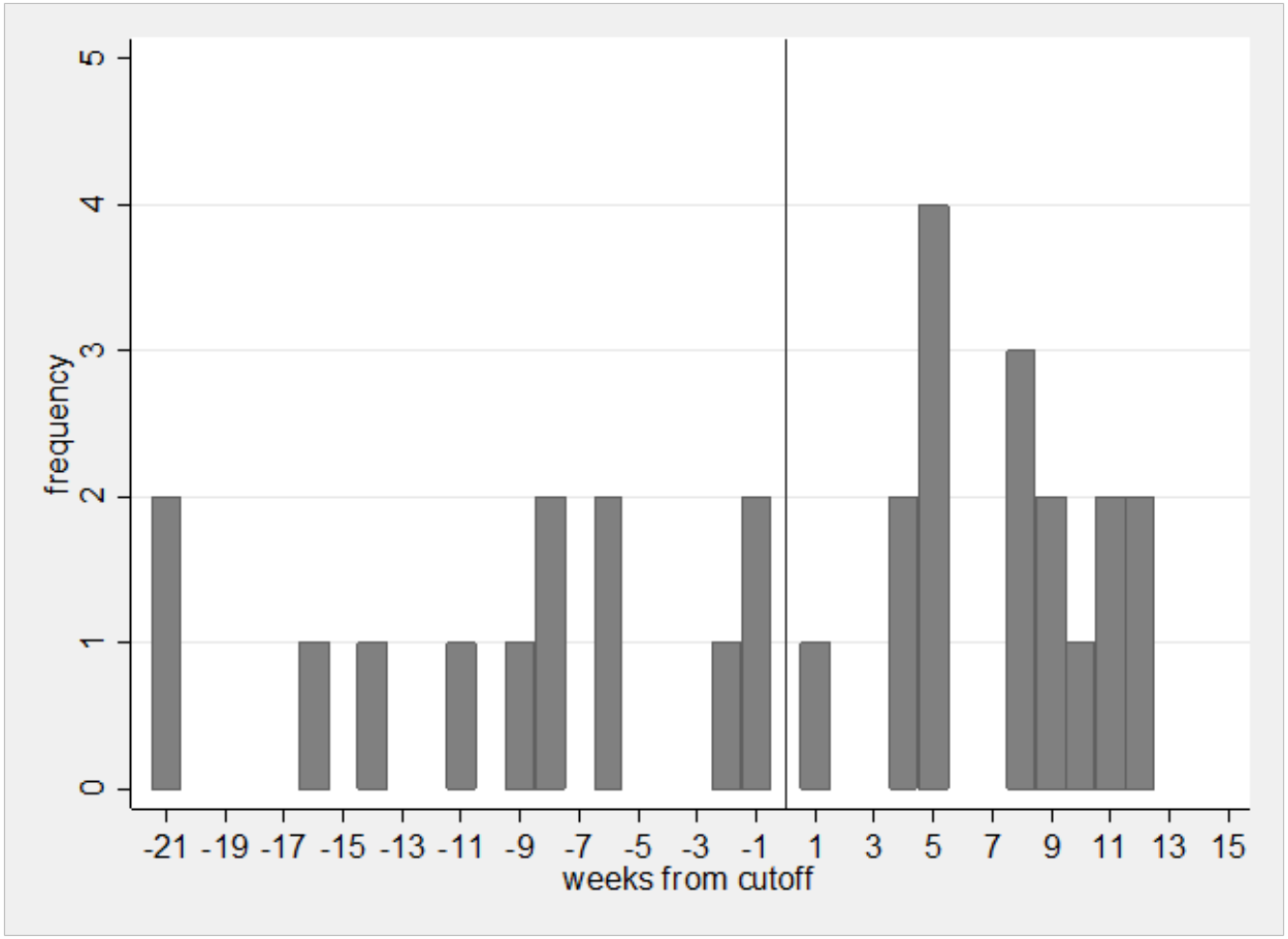
Implementation

- Main focus on 31 (29) agreements signed between 10 October 2010 and 20 June 2011 (+/- 20% of E)
  - 10 Oct. 20 10 - 24 Jan. 2011: 15 wks since 1st agreement not extended
  - 24 Jan. 2011 - 28 Feb. 2011: 5 wk transition period
  - 01 Mar. 2011 - 20 Jun. 2011: 15 wks since last agreement not extended

- Controlling for relative time effects is potentially important
  - Economic conditions may reflect the timing and contents of agreements (also time in year exposed to treatment differs)
  - Relative time effects are linear or quadratic and allowed to differ on each side of the cutoff

The number of collective agreements over time

in weeks from 1 March 2011 (Oct. 2010 - May 2011)



Balancing tests

Sharp RDD: Treatment is positive before the cutoff and zero after

	All		Non-affiliated		Affiliated	
	(1)	(2)	(3)	(4)	(3)	(4)
Balancing variables	linear	quadratic	linear	quadratic	linear	quadratic
Representativeness, 2010	0.0815	-0.0080	0.0923	-0.0183	0.0220	0.0303
- share of workforce in afffiliated firms	(0.1143)	(0.0574)	(0.1422)	(0.0617)	(0.0695)	(0.0510)
Employment growth, 2009-2010	0.0865	0.0975	0.0953	0.1045	0.0813	0.0844
	(0.0155)	(0.0080)	(0.0195)	(0.0106)	(0.0099)	(0.0076)
	***	***	***	***	***	***
Log employment, 2010	-0.2195	-0.1584	-0.4327	-0.3626	0.5093	0.1547
	(0.6026)	(0.6073)	(0.6009)	(0.6273)	(0.7890)	(0.5082)
Log average firm size, 2010	-1.2418	-1.4115	-1.2439	-1.3098	-1.5805	-1.6135
- number of workers per firm	(0.3004)	(0.1840)	(0.2429)	(0.2017)	(0.2265)	(0.1765)
	***	***	***	***	***	***
Log average wage, 2010	-0.0510	-0.0812	-0.0530	-0.0603	-0.1147	-0.1120
- within job title and year	(0.0870)	(0.0956)	(0.0852)	(0.0875)	(0.0901)	(0.0758)
Log median wage, 2010	0.0040	-0.0092	-0.0127	-0.0059	-0.0243	-0.0035
- within job title and year	(0.0764)	(0.0828)	(0.0775)	(0.0781)	(0.0824)	(0.0605)
Export intensity, 2010	-0.4642	-0.4553	-0.4072	-0.3808	-0.5818	-0.6151
	(0.0523)	(0.0494)	(0.0579)	(0.0583)	(0.0466)	(0.0264)
	***	***	***	***	***	***
Log labour productivity, 2010	0.1753	-0.0735	0.2313	0.0320	-0.2217	-0.1636
	(0.4604)	(0.5252)	(0.4727)	(0.5360)	(0.3814)	(0.2627)

The construction of the dataset*

- Sample of firms
  - present in 2010 QP (followed in other years)
  - covered by agreement at sector level (excl. firm- and holding-level)
  - covered by new/revised agreements signed (Sept 2010 -Aug 2011)

- Linking QP and DGERT data
  - for each firm, focus on agreement that represents most workers
  - for each agreement, identify most important employer association
  - link QP and DGERT data using the employer association
  - extend domain of collective agreement to non-affiliated firms

- Construct semi-aggregated dataset by agreement, membership status and year

Sensitivity analysis (sharp RDD)

Change in employment growth, all firms, 2010-2011

	Employment growth				Change in employment growth			
	Baseline	Controls	Bandwidth	Falsification	Baseline	Controls	Bandwidth	Falsification
Treatment dummy	-0.0578	-0.0603	-0.0164	-0.0345	-0.1022	-0.1169	-0.0898	-0.0345
	(0.0262)	(0.0203)	(0.0264)	(0.0556)	(0.0301)	(0.0245)	(0.0210)	(0.0556)
	**	***			***	***	***	
Constant	-0.1226	-0.0891	-0.1570	-0.2129	-0.2238	-0.1352	-0.2017	-0.2129
	(0.0313)	(0.0115)	(0.0412)	(0.0541)	(0.0279)	(0.0143)	(0.0259)	(0.0541)
	***	***	***	***	***	***	***	***
Relative time effects	Linear	Linear	Linear	Linear	Linear	Linear	Linear	Linear
Observations	58	58	72	46	58	58	72	46
R-squared	0.4290	0.3917	0.5210	0.5902	0.6809	0.5650	0.7015	0.5902

Regressions are weighted by the number of employees in 2010. Standard errors are robust and clustered. *, **, *** refer to statistical significance levels of 10%, 5% and 1% respectively

Results by affiliation status

Dependent variable : change in employment growth, 2010-2011

	Fuzzy RDD				Sharp RDD			
	Baseline	Controls	Bandwidth	Falsification	Baseline	Controls	Bandwidth	Falsification
Non-affiliated firms	-0.1787	-0.2446	-0.1706	-0.0370	-0.1222	-0.1309	-0.0986	-0.0337
* treatment dummy	(0.0653)	(0.1118)	(0.0650)	(0.0607)	(0.0428)	(0.0306)	(0.0309)	(0.0928)
	**	**	**		***	***	***	
Affiliated firms	0.2565	0.1080	0.1798	-0.0295	-0.0512	-0.0636	-0.0681	-0.0216
* treatment dummy	(0.0916)	(0.1877)	(0.0887)	(0.0497)	(0.0159)	(0.0317)	(0.0272)	(0.0255)
	***		*		***	*	**	
Affiliated firms	0.0779	0.1072	0.0707	0.0380	-0.0080	0.0612	0.0540	0.0634
	(0.0265)	(0.0411)	(0.0474)	(0.1109)	(0.0273)	(0.0309)	(0.0442)	(0.0984)
	***	**				*		
Constant	-0.0710	-0.0814	-0.0888	-0.1138	-0.0865	-0.1283	-0.1113	-0.1247
	(0.0163)	(0.0481)	(0.0210)	(0.0532)	(0.0164)	(0.0181)	(0.0212)	(0.0870)
	***		***	**	***	***	***	
Relative time effects	linear	linear	linear	linear	linear	linear	linear	linear
Observations	62	62	76	46	58	58	72	46
R-squared	0.6650	0.5670	0.6919	0.5906	0.6990	0.5762	0.7091	0.5963

Weighted by 2010 employment. Robust standard errors clustered.

The role of representativeness

	Fuzzy		Sharp	
	(1)	(2)	(1)	(2)
	ΔE	ΔΔE	ΔE	ΔΔE
Treatment dummy * non-affiliated firms * representativeness	0.3024 (0.1603) *	0.1296 (0.2129)	0.2443 (0.1706)	-0.1178 (0.2044)
Treatment dummy * affiliated firms * representativeness	-0.5177 (0.2553) *	-0.2431 (0.2887)	-0.1288 (0.1087)	-0.0233 (0.0989)

Summary

- Extensions play important role in many countries, but their role is not well understood

- Use novel approach based on RDD and unique data on collective agreements (albeit with small N)

- Results based on natural experiment that took place in specific economic and institutional context