Do Place-Based Tax Incentives Create Jobs?

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Trans-Atlantic Public Economics Seminar
June 4-5, 2018

Motivation

- Employment a main indicator for socio-economic wellbeing and income equality.
- Large (within-country) regional differences in employment rates.

→Example

- Regional differences in employment rates and labor market opportunities can be persistent over time and have long lasting consequences.

  (Chetty, Hendren, Kline and Saez (2014))

Motivation

Place-based policies to stimulate regional employment:

- Enterprise Zones program - UK (1980s), US.

  Tax breaks, reduced regulations for firms.

- The European Regional Development Fund.

  Transferring means from more developed to underdeveloped regions.

  2014-2020: Euros 351.8 bn.

- Geographically differentiated payroll taxes

  Payroll taxes: flat taxes levied on firms, proportional to workers' earnings.

  Nordic countries, Argentina.

This Paper

- The system of geographically differentiated payroll taxes in Norway was abolished in 2004 due to an EU ruling.
- The Norwegian government introduced a subsidy scheme to relieve small firms.

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- The system of geographically differentiated payroll taxes in Norway was abolished in 2004 due to an EU ruling.
- The Norwegian government introduced a subsidy scheme to relieve small firms.
- We look at firm responses to the increase in regional payroll tax rates among large firms.

Preview of Results

- The increase in payroll taxes had a relatively small impact on wages.
- The affected firms instead respond by significant reductions in employment.
  - Some firms have multiple establishments.
  - Impacts are particularly pronounced in multi-establishment firms.
  - Reduced establishment entry and increased exit.

Related Literature

- *Regional* payroll tax changes:

  See Bohm and Lind (1993) and Bennmarker, Mellander and Öckert (2009) for Sweden; Korkeämaki and Uusitalo (2009) for Finland; Johansen and Klette (1997) and Stokke (2015) for Norway, and Cruces, Galiani and Kidyba (2010) for Argentina

- *National* payroll tax changes, targeting particular groups of workers:

  Saez, Matsaganis and Tsakloglou (2012); Saez, Seim and Schoefer (2017); Lehmann, Marical and Rioux (2013).

→ Mixed effects on employment and wages.

- Our contributions:
  1. Firm adjustments.
  2. EU induced tax change.

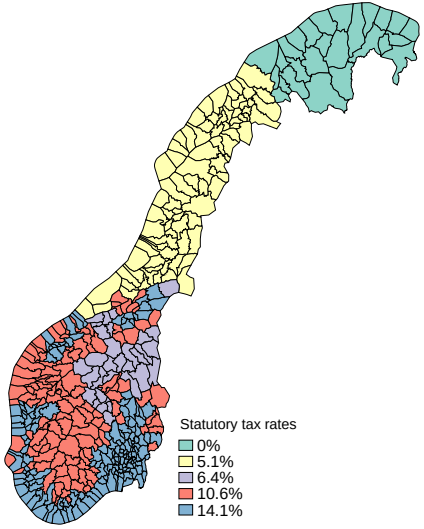
Institutional Setting

Payroll Taxes in Norway

- Generous social security system.
- Employees contribute 8.2%.
- Employers' contributions (payroll taxes) are geographically differentiated.
- All employees draw the same benefits from the scheme.

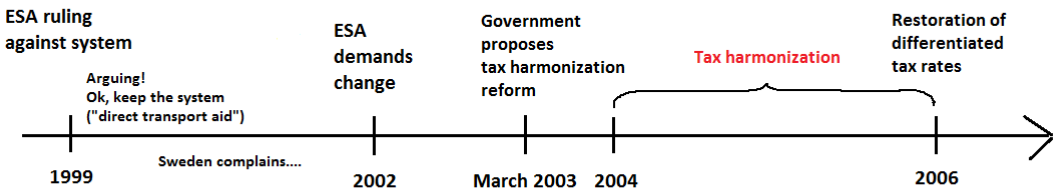
Institutional Setting

Geographically Differentiated Tax Rates, 2003



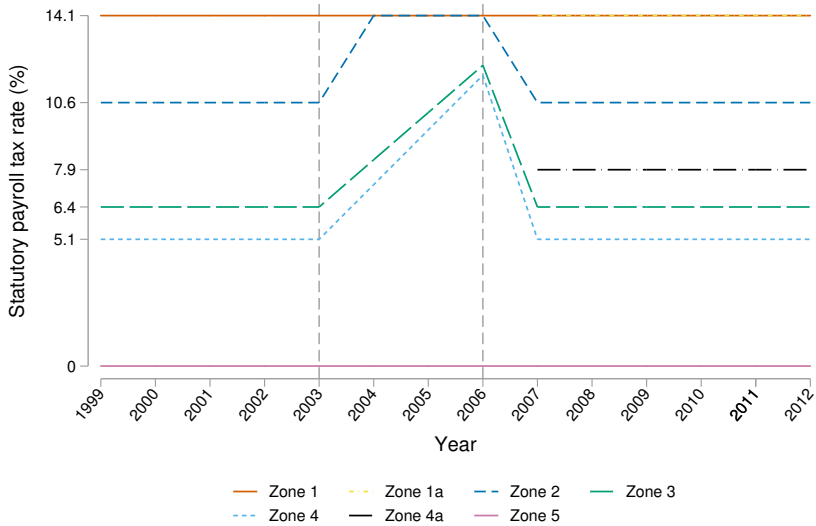
Institutional Setting

The Pavroll Tax Harmonization Reform



Institutional Setting

Tax Harmonization - and Differentiation



Institutional Setting

Wage Setting in Norway

- Central bargaining.
- High degree of unionization.
  - 2014: 50% unionized, 70% of private sector workers covered by collective bargaining agreements (through firm employer federation membership).
- Guiding idea: The outcome of wage negotiations in tradable sectors should set the norm for all sectors.
- Minimum wage increase determined by centralized bargaining.
- Serves as a norm in other private sectors and the public sector.

Empirical Strategy

Outline

- Relevant tax rate is based on where the workers live.
- Firms might employ workers from different tax zones:
  - Establishments in different tax zones.
  - Located near a border.
  - Workers commute.
- We compare more and less exposed firms before and after the tax harmonization.
  - 2003 worker composition and harmonization reform creates variation in firm average statutory tax rates.

Empirical Strategy

Changes in the Statutory Tax Rate

- Firm j's statutory tax rate in year t (based on 2003 worker composition):

$$\bar{\tau}_{j,t} = \sum_{i=1}^{N_{j,t=2003}} \omega_{i(j)} \times \tau_{i(z,j)t} \tag{1}$$

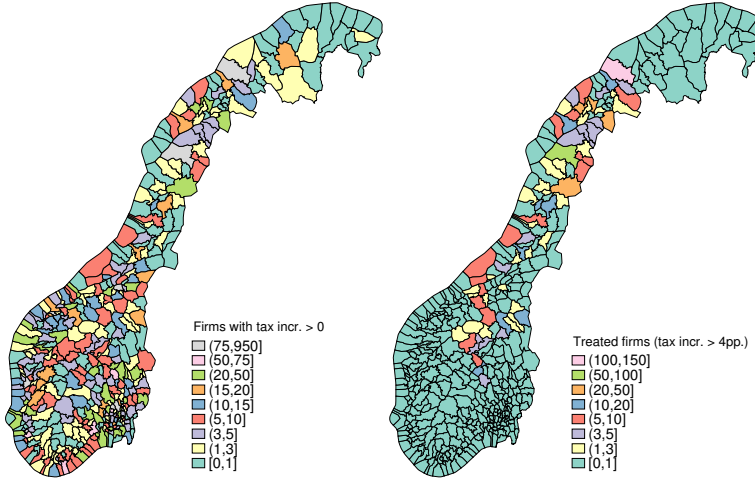
- In parts of the analysis, we split firms into two groups by degree of exposure.
  - Construct a measure of a firm's exposure to the tax harmonization:

$$\Delta\bar{\tau}_j = \bar{\tau}_{j,t=2006} - \bar{\tau}_{j,t=2003} \tag{2}$$

$$Stat.treatment_j = \begin{cases} 1 & \text{if } \Delta\bar{\tau}_j \geq 4pp. \\ 0 & \text{otherwise} \end{cases} \tag{3}$$

Empirical Strategy

Firms Exposed to the Statutory Tax Increase



Institutional Setting

Subsidy - To Relieve Small Firms

- Small firms were unaffected by the harmonization (assuming no spillover effects).
  - To ease the burden on firms, a subsidy scheme was implemented in 2004.

$$S_{j,t} = min\Big(\sum_{i=1}^{N_{j,t}} w_{i,t} \times (\tau^{o}_{i,t} - \tau^{I}_{i,t}), \bar{S}\Big), \tag{4}$$

where $w_{i,t}$ is the total earnings of worker i in year t, $N_{j,t}$ is the number of workers in firm j in year t, and $\bar{S}$ is the maximum subsidy of around 270,000NOK (40,000 USD) per year.

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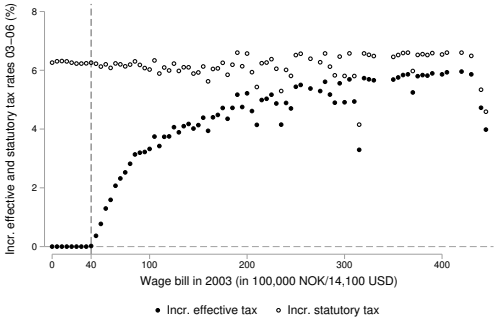
- Predict the subsidy a firm will receive based on 2003 wage bill.

$\rightarrow$ Predict a firm's effective tax rate.

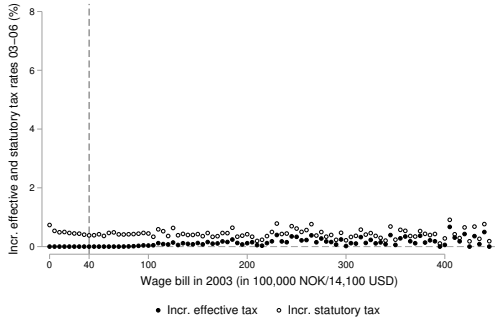
Empirical Strategy

Predicted Tax Increase From 2003-2006 over Firm Size in 2003.

Statutory treated firms



Statutory control firms



Empirical Strategy

Main Regression Equation

$$ln(y_{j,t}) = \beta ln(1 + \bar{\tau}_{j,t}) + \rho_t + \delta_j + \epsilon_{j,t} \quad (5)$$

$y_{j,t}$ is the outcome variable of interest (employment and wages) in firm j in year t;
$\bar{\tau}_{j,t}$ is the statutory tax rate based on the firm's worker composition in 2003;
ρ_t and δ_j denote year- and firm fixed effects;
$\epsilon_{j,t}$ is an error term.

Data

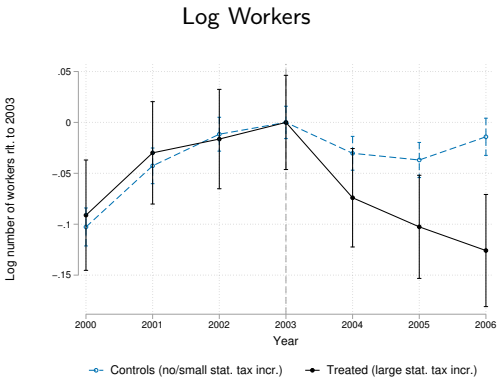
- Data:
  - Linked employer-employee register: all employment spells 2000-2012.
  - Tax records: information on workers' wages.
  - Worker demographics, in particular: municipality of residence.
- Creating the firm level data:
  - Aggregate spells of all workers aged 15-74.
  - Firm level because of subsidy.
  - Private sector firms with at least two employees
  - Balanced sample (2000-2006) of 43,561 firms.

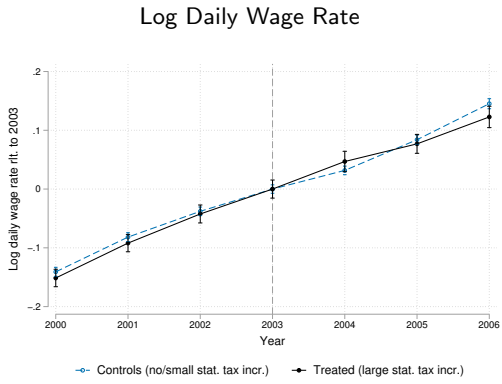
Descriptive Statistics

	Treated (large tax incr.)		Control (zero/small tax incr.)	
	Large	Small	Large	Small
Daily wages	865	676	1075	738
Workers	35	7	37	6
Days	11,785	2,258	12,684	2,167
Statutory tax rate 2003	0.055	0.055	0.134	0.132
Change in stat. tax rate 03-06	0.062	0.063	0.004	0.005
Change in eff. tax rate 03-06	0.023	-0.000	0.001	0.000
Number of firms	954	3,936	9,822	28,849

Results

Event Study: Large Firms

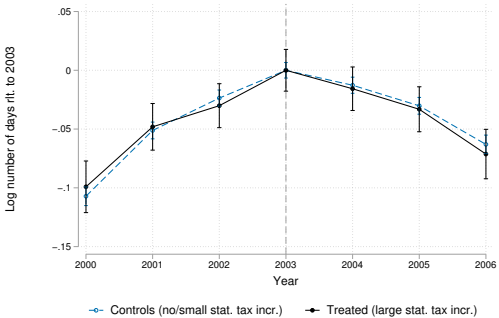




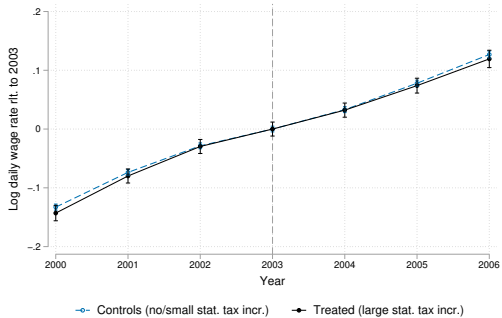
Results

Event Study: Small Firms (Placebo)

Log workers



Log daily wage rate



Results

Regression Results

	Large firms		Small firms	
	Workers	Daily wage rate	Workers	Daily wage rate
Log(1+ stat. tax rate)	-1.865***	-0.260**	-0.315*	-0.017
	[0.567]	[0.118]	[0.174]	[0.093]
R2	0.88	0.90	0.83	0.84
N	75,432	75,432	229,495	229,495

Notes: Outcome variables in logs.

Results

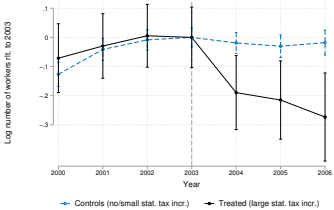
Multi- versus Single-Establishment Firms

- 17% of firms in 2003 are multi-establishment firms.
- Average of 3.8 establishments per firm.
- Employ 27% of all workers in 2003.

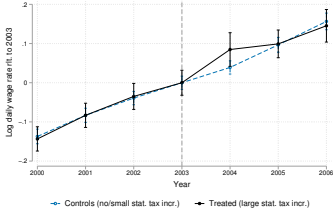
Multi- versus Single-Establishment Firms

Results

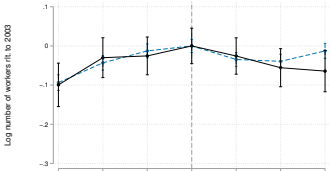
Multi: Log Workers



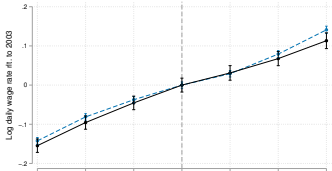
Multi: Log Daily Wage Rate



Single: Log Workers

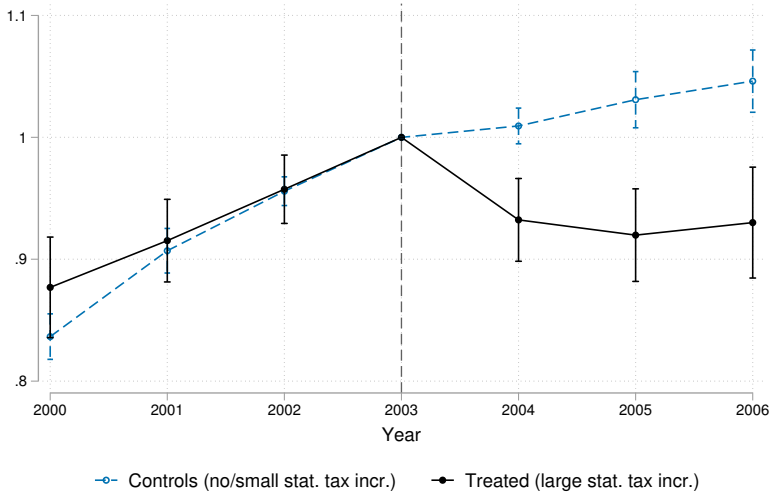


Single: Log Daily Wage Rate



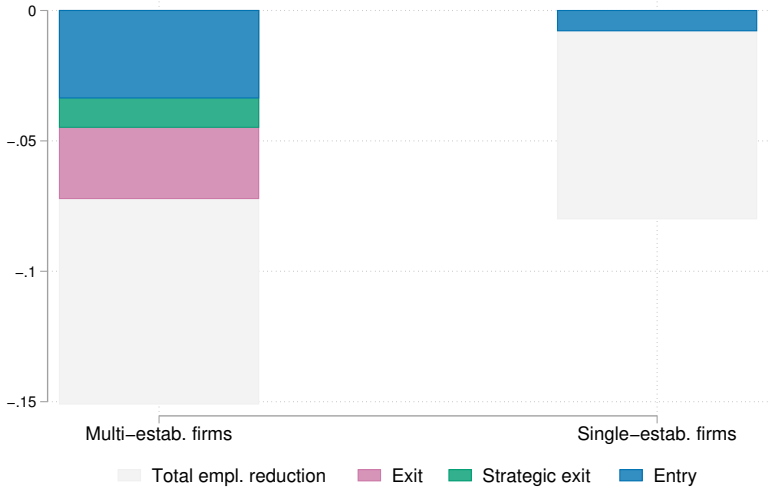
Adjustment Mechanisms

Number of Establishments per firm (Multi-Establishment Firms)



Decomposing Employment Reductions

Extensive Margin



Decomposing Employment Reductions

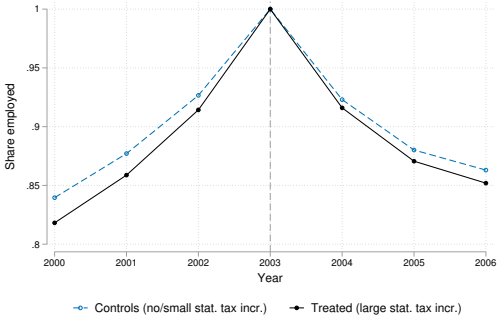
Intensive

Worker Level Analysis

- Follow all workers employed in a large treated or control firm in 2003.
- Sample of 576,080 workers.
- Are they employed in the years following the tax harmonization reform?

Worker Level Analysis

Results



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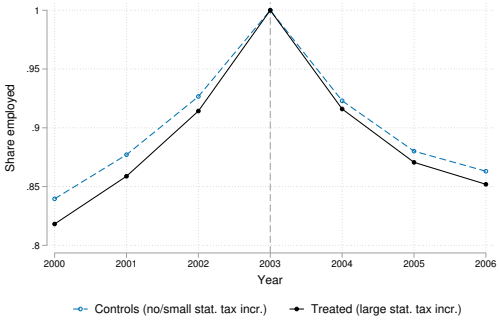
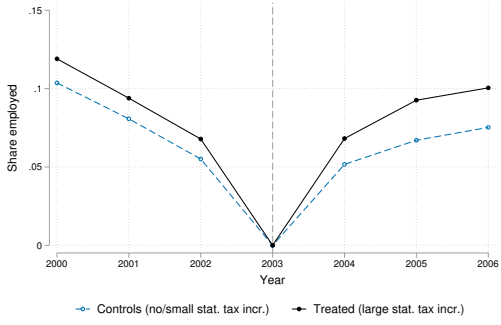
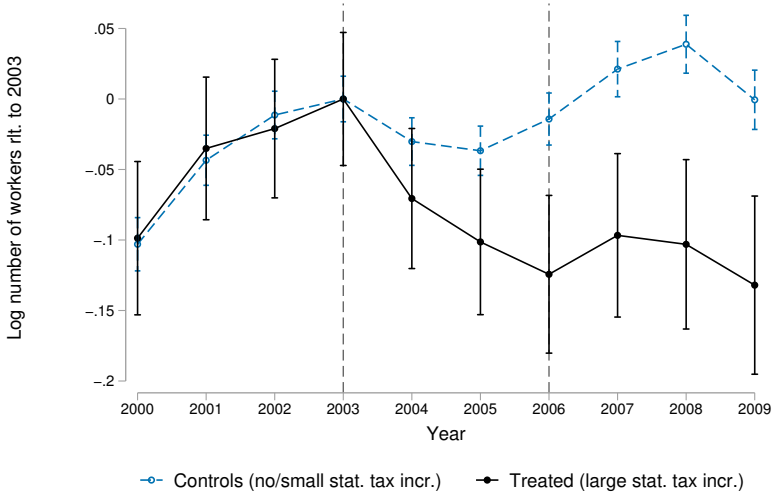




Worker Level Analysis

- The full employment drop at the firm level does not seem to be traced among the workers employed in these firms in 2003.
- This could be due to:
  - Spillovers to small firms.
  - Reduced hiring (not picked up in worker level analysis).

Subsequent Tax Decrease



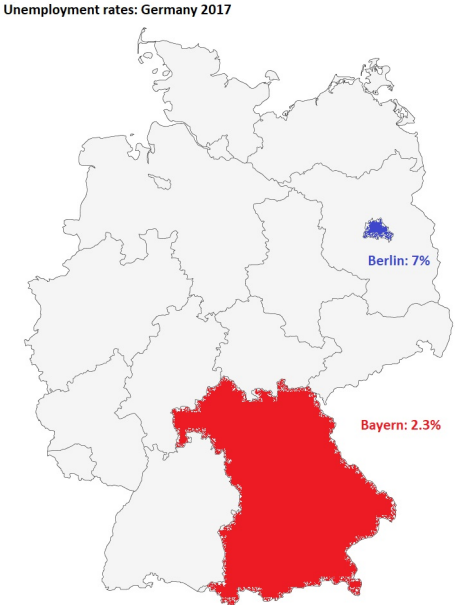
Discussion

- Firms facing a sudden increase in the payroll tax reduce employment.
  - Partly through increased establishment exit, and reduced entry.
- Outcome of centralized bargaining in 2004:
  - Industry workers wage growth of 3.6% (inflation 1.6%)
- Difficult for firms to cut wages in response to payroll tax increases.
- Employment effects are not reversed after tax rates decrease in 2007.

Discussion

- Seems to be much smaller impacts on workers employed in affected firms in 2003.
- Some, but not large spillover effects to small firms.
- A significant part of the employment reduction explained by reduced hiring.
- Unknown what happened to these “non-hired” workers.
- Regional tax incentives may stimulate employment in underdeveloped regions (in Norway).

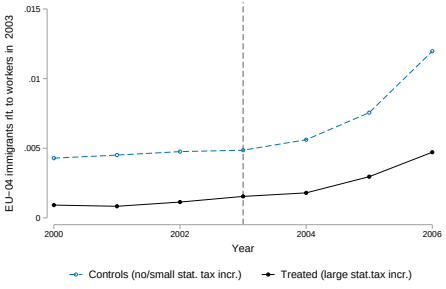
Motivation



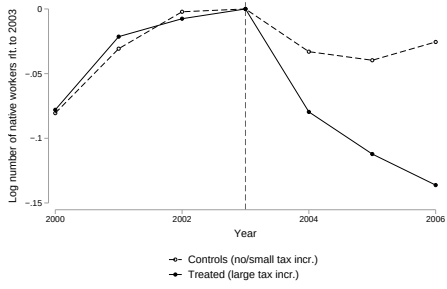
Back

A1: Robustness: EU expansion

Share of EU-2004 workers



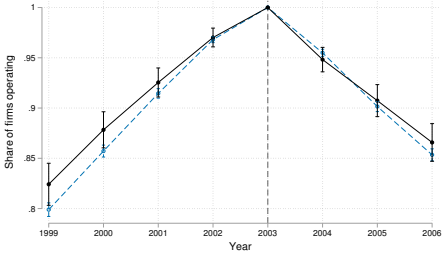
Log number of native workers



A2: Firm Survival

- Non-balanced sample for the years 1998-2006.
- 11,599 large firms: 962 treated and 10,637 controls.
- 70% of the control firms are at least six years old in 2003, compared to 74% of treated firms.

Unweighted



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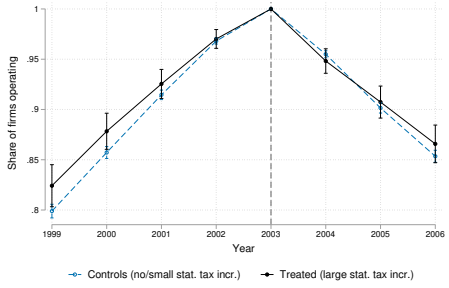
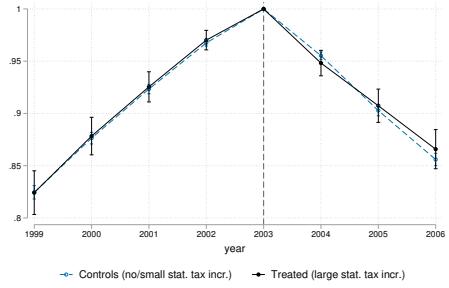


DFL reweighted by age in 2003



A4: Adjustment Mechanisms

Internal Margin

1. Establishment exit.
2. Establishment exit by restructuring.
3. Reduced establishment entry.
4. Hiring and separations in continuing establishments.