The Effect of Mandatory Profit-Sharing on Workers and Firms Evidence from France

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The paper

- Labor share has gone down globally (Karabarbounis and Neiman, 2013).
- Stagnant income growth for low-skill workers in many developed countries (Piketty et al., 2018; Drechsel-Grau et al., 2021)
- Concerns of increased firm market power in local labor markets (Stansbury and Summers, 2020)

$\Rightarrow$ Increased demand for redistribution from capital to labor

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⇒ Increased demand for redistribution from capital to labor

This paper: we study **a non-fiscal form of redistribution** – *mandatory profit-sharing*

- Question: how does it affect labor share? wages? investment? productivity?
- Challenge: existing literature provides XS evidence
- This paper: leverages the French setting, which is large, to answer these questions causally

Mandated profit-sharing in France: How it works

– Since 1967, all firms **with >100 employees** set aside an amount PS each year

– PS then distributed to all employees, (mostly) in proportion to wages

– PS is tax exempt ▸ Other tax implications: I will not discuss this much for clarity here

– PS determined by **formula**:

$$PS = \frac{1}{2}\left(\frac{\text{wage bill}}{\text{value added}}\right)(\text{net income} - .05 \times \text{book equity})^{+}$$

- 5% = **cost of equity**
- $\frac{\text{wage bill}}{\text{value added}}$: workers receive more **when they contribute more to output**

→ Large transfer – Calibration: labor share ≈ 53%; ROE ≈ 10%

$$\frac{PS}{\text{Net Income}} = \left(\frac{1}{2}\right) \times .53 \times \left(1 - \frac{.05}{10\%}\right) \approx 10\%$$

Preview of main results

We exploit one discontinuity and one reform:

- Before 1990, profit sharing mandatory > 100 employees
  - firms bunch below 100 employees – avoidance at *extensive* margin
  - not surprising: increase in average "tax rate" (not marginal)

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- After 1990, threshold down to 50 employees
  - newly treated firms: btw 50 and 100 employees
  - No attempt to reduce PS formula $\rightarrow$ no avoidance at *intensive* margin
  - No < 0 effect on base wage except for managers/engineers

  $\rightarrow$ Total compensation at individual level $\nearrow$ 3.5%; redistributes $\approx$ .7% of value added
  - No impact on investment, leverage, productivity

Roadmap

Simple model

Bunching Analysis

Difference-in-difference
- Firm-level evidence
- Employee-level evidence

Conclusion

How does profit-sharing affect cost of capital?

write simple user cost model of capital:

$$\frac{\partial F}{\partial k}(k,l) = \underbrace{\frac{r}{1-\tau} + \delta}_{\text{pre tax standard user cost}} + \underbrace{\left(1 - \frac{d}{k}\right)(r_e - 5\%)\frac{\gamma}{1-\gamma(1-\tau)}}_{\text{distortion from profit sharing}}$$

where:

- key assumption: base wage does not respond (holds empirically)
- r = WACC, τ = corporate tax rate
- r_e = cost of equity, d/k = financial leverage
- γ = % of profit that firm needs to share

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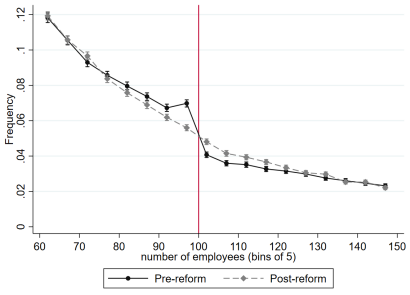
$\rightarrow$ calibration: increase user cost by .4ppt (compared to pre tax user cost of $\approx 20\%$)

Some avoidance at the *intensive* margin

Use post 1990 distribution as counterfactual (or Pareto)

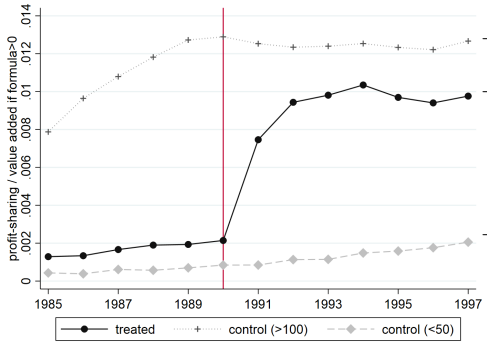


- firms perceive mandatory PS as costly
  - intro calibration: profits drop by 10% when going from 99 to 100

→ avoidance at *extensive* margin

First stage: Treatment moves .7ppt of value added to workers

- treatment (in black): firms with 55-85 employees in 89-90
- large control (dashed with cross): firms with 120-300 employees in 89-90
- small control (dashed with diamonds): firms with 35-45 employees in 1989



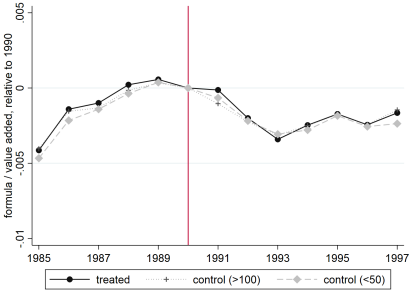
→ large control: always likely to share profits

→ Treated firms more likely to share profits

→ small control: never likely to share profits

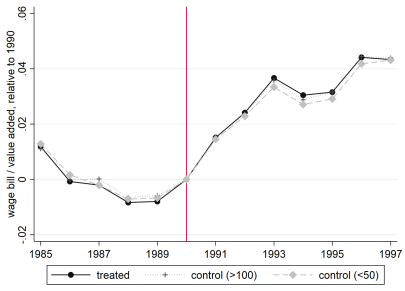
No avoidance at the *intensive margin*

- To check if firms avoid sharing profits, compute: $\frac{1}{2}\left(\frac{\text{wage bill}}{\text{value added}}\right)\left(\frac{\text{net income}-.05\times\text{book equity}}{\text{value added}}\right)^{+}$
- ask if it changes differently for treated firms

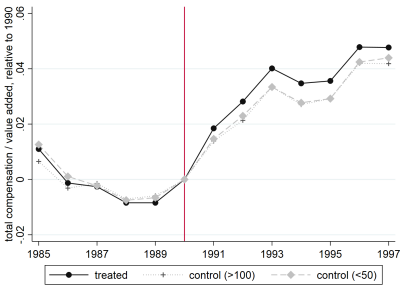


→ firms do not change behavior *conditional* on treatment (but as we saw, firms try to *avoid* treatment)

No incidence on wages, total labor share increases



Wage bill

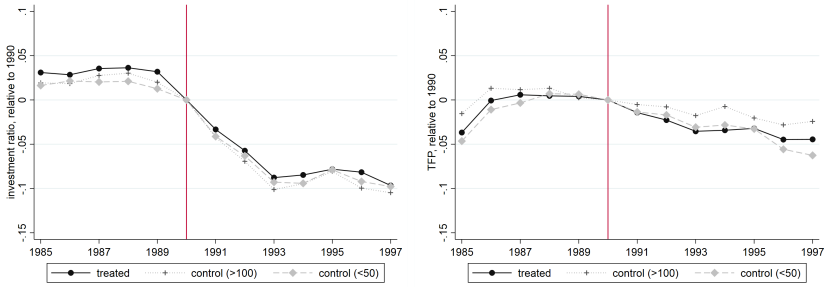


Wage bill + profit-sharing

- wage bill (excl. profit-sharing) does *not* respond
  - no < 0 incidence overall, wage rigidity (collective agreements)

$\rightarrow$ (wage bill + profit-sharing) $\nearrow$ .6 ppt of VA

No effect on investment and TFP



- No effect on investment, leverage, K/L substitution
- consistent with small distorsion of the cost of capital

Incidence by skill: Evidence from Employer-employee data

$$Y_{wijlt} = \alpha_i + \delta_{jt} + \mu_{lt} + \beta.\mathbb{1}_{\{\text{profit-sharing}_{ijlt}>0\}} + \gamma X_{wijlt} + \epsilon_{wijlt},$$

where we instrument $\mathbb{1}_{\{\text{profit-sharing}_{ijlt}>0\}}$ with $T_{it} \times POST90_t$

	log(wage)		log(total compensation)	
$^1\{\text{profit-sharing}>0\}$	0.0072	0.0136*	0.0350***	0.0422***
	(0.0075)	(0.0079)	(0.0076)	(0.0081)
$^1\{\text{profit-sharing}>0\}$ x $^1\{\text{Intermediate}\}$		-0.0058		-0.0072
		(0.0209)		(0.0211)
$^1\{\text{profit-sharing}>0\}$ x $^1\{\text{High-skill}\}$		-0.0823*		-0.0941**
		(0.0429)		(0.0438)
K-P F stat	1,166	391	1,166	391
K-P F stat (Intermediate)		194		194
K-P F stat (High-skill)		67		66
Nul effect on high-skill (p-value)		0.102		0.226
Observations	436,215	436,215	436,186	436,186

- noisy, but indicative of stronger incidence on skilled wages

Conclusion

Mandated profit-sharing is non-distorsionary way of redistributing income to low-skill workers:

- labor share increase by ≈ 0.6 ppt
- mostly driven by increase in low-skill workers' compensation
  - collective agreements, minimum wage $\rightarrow$ wages rigid
- no discernible effects on investment, TFP
- low-distortion but not costless
  - profit-sharing is tax exempt
  - if it were not, it'd be distortionary

References I

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Drechsel-Grau, Moritz, Andreas Peichl, Johannes Schmieder, Kai D. Schmid, Hannes Walz, and Wolter Stefanie, "Inequality and Income Dynamics in Germany," Technical Report 2021.

Karabarbounis, Loukas and Brent Neiman, "The Global Decline of the Labor Share*," *The Quarterly Journal of Economics*, 10 2013, *129* (1), 61–103.

Piketty, Thomas, Emmanuel Saez, and Gabriel Zucman, "Distributional National Accounts: Methods and Estimates for the United States," *The Quarterly Journal of Economics*, 2018, *133* (2), 553–609.

Stansbury, Anna and Lawrence H Summers, "The Declining Worker Power Hypothesis: An explanation for the recent evolution of the American economy," Working Paper 27193, National Bureau of Economic Research May 2020.

Mandated profit-sharing: Tax Implications

– for **workers**, money received is:

1. tax free if held 5 years on dedicated savings account
2. taxable if earned right away

- **for firms**, two main tax advantages:

1. little/no payroll tax paid on PS
2. PS is an expense, i.e. corporate tax exempt

– Firms with fewer than 100 workers can create profit-sharing plan (and benefit from tax advantages)

– Firms can share more than PS, up to a threshold ($\approx$ €30k per employee/year in 2020) Back

Profit-sharing in Europe (2015)

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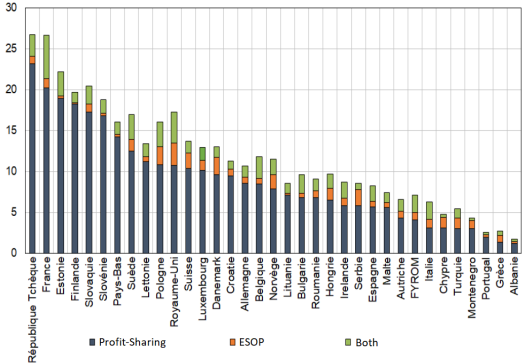
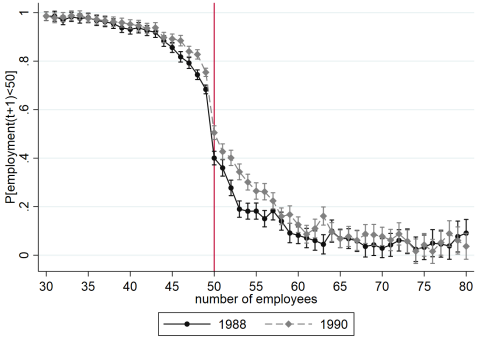


Share of workers covered by profit-sharing schemes vs. ESOP in Europe. Batut and Rachiq (2021). Source: European Working Condition Survey, 2015.

Avoidance at the 50 employee threshold



(a) Treatment: 1988 vs. 1990

(b) Placebo: 1987 vs. 1988

- Probability of having fewer than 50 employees at $t+1$, by firm size in t

$\rightarrow$ active avoidance of passing the 50 threshold increases after reform

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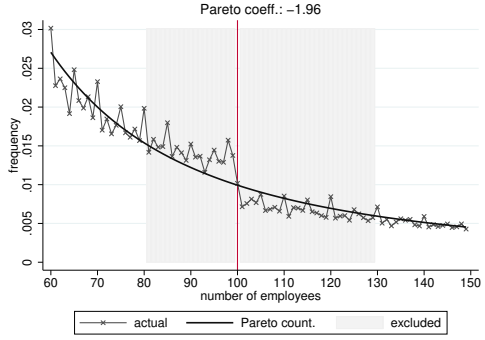
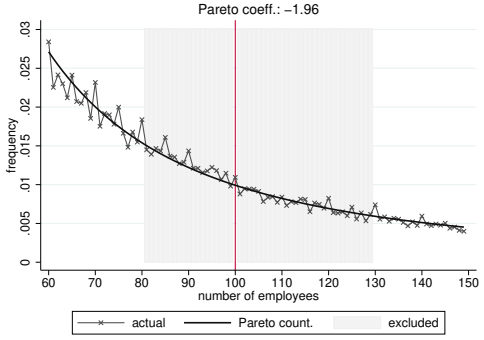
Conditional distribution of firm size: Pareto counterfactual



(c) Pre-reform (1985-1989)



(d) Post-reform (1992-1997)

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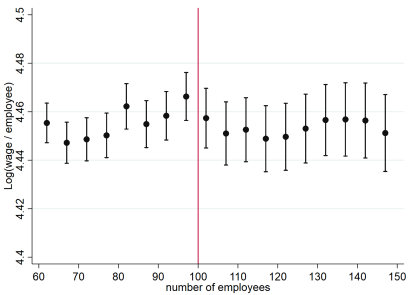
Mis-reporting?

- Firms may avoid regulation by misreporting their employment
- However, accounting items are certified by external auditors ⇒ harder to manipulate
- If bunching reflects misreporting, labor costs per employee should spike up left of the 100 threshold

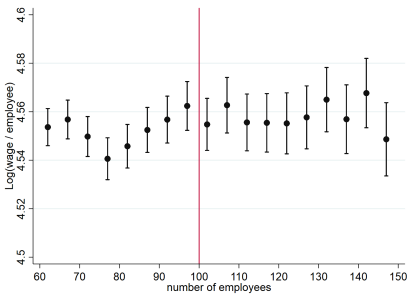
→ next slide

Total labor cost per employee at the 100 threshold

Y-axis: $\text{asinh}(\frac{\text{labor cost}}{\#\text{ of employees}})$



(e) Pre-reform (1985-1989)



(f) Post-reform (1992-1997)

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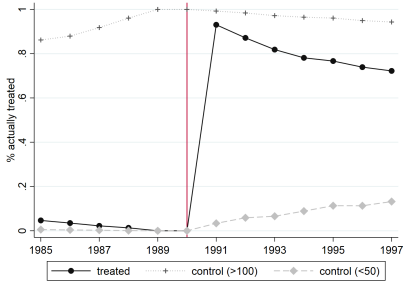
Intent-to-treat and actual treatment



- "treated" = employment btw 55 & 85 in 1989-90
- "actually treated" = employment > 50 after 1990, > 100 before

$\rightarrow$ message: employment is persistent enough

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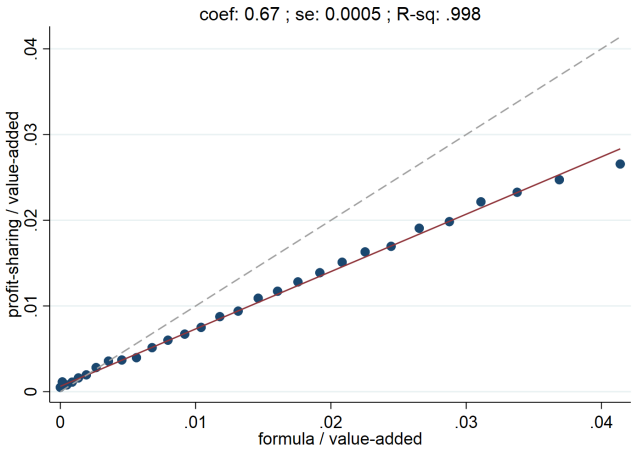
Reconstituting the formula



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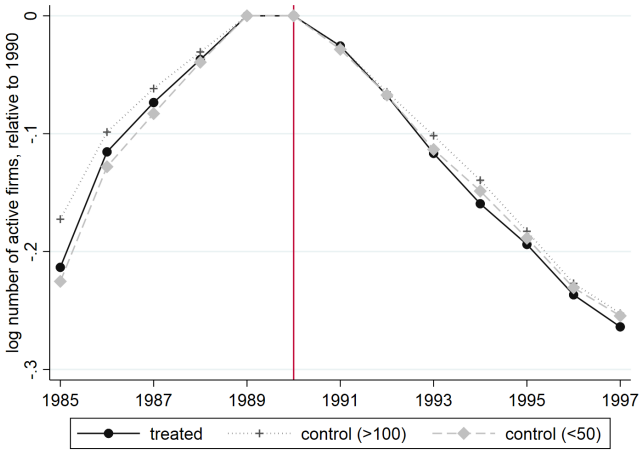
Attrition



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Robustness: alternative measures of effort

	(1)	(2)	(3)
	$\mathbb{1}\{\text{Sick leave}\}$	$\mathbb{1}\{\text{Overtime}\}$	$\frac{\text{Actual hours - Usual hours}}{\text{Usual hours}}$
Panel A: Relative to large control			
Treatment x Post	-0.0012	0.0007	-0.0002
	(0.0021)	(0.0019)	(0.0011)
Panel B: Relative to small control			
Treatment x Post	-0.0035	0.0022	-0.0019*
	(0.0022)	(0.0020)	(0.0011)
Panel C: Relative to both groups			
Treatment x Post	-0.0022	0.0013	-0.0010
	(0.0020)	(0.0017)	(0.0010)
Firm-size FE	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes
Province-Year FE	Yes	Yes	Yes
Adj R^2	0.00	0.01	0.01
Observations	201,775	201,775	108,272

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