

# The Effects of Eliminating Employment Protection

Emmanuel Saez  
UC Berkeley

Benjamin Schoefer  
UC Berkeley

David Seim  
Stockholm University

NBER Summer Institute  
Labor Studies and Public Economics  
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# Employment Protection Legislation (EPL)

Employment Protection Legislation (EPL): rules that mainly **constrain layoffs** (advance notice, just cause,...)

Tremendous variation across countries

- From laissez-faire approaches as in the United States
- To heavy regulation as in France and **Sweden (our setting)**

Contentious policy and academic debate

**Pro:** Increases job security (and perhaps training, implicit contracts,...)

**Con:** Inefficient matches, misallocation, productivity losses, curbs hiring,...

Universal feature: EPL **favors high-tenured, older insiders**

- Often explicitly built into phase-in and seniority rules (e.g., step functions of tenure, age-based rules,...)

How does EPL shape **insiders'** jobs and labor market prospects?

- Hard to empirically assess exactly b/c **phase-outs** of EPL are rare

# Our Paper: Quasi-Exp Elimination of Strong EPL

**Strategy:** Exploit sharp age discontinuity in EPL in Sweden

- Strong EPL until age 67
- At age 67, sharp and complete elimination of EPL
- In contrast to common variation: gradual phase-in of weak EPL
- Clean: no other policy change (no interference from pensions etc.)
- Also use reform-driven shifts in cutoff (65 → 67 → 68)

**Variation+data permit comprehensive analysis:**

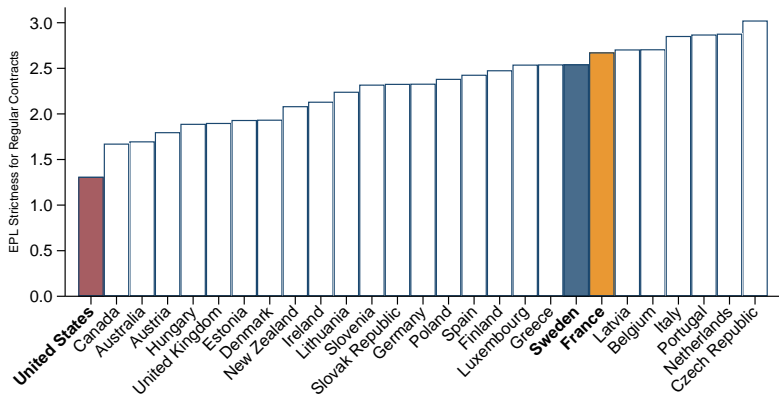
- Direct effect: separations & heterogeneity
- Effects on ongoing jobs / stayers
- Total effect: employment/hiring/earnings p.c.

**Findings:**

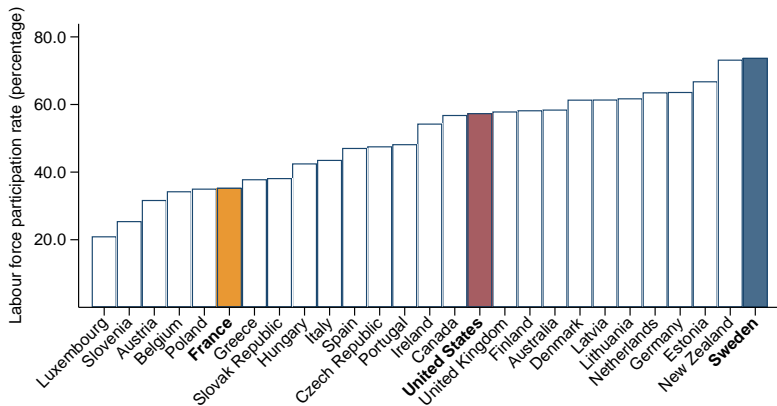
- Clear—but moderate—effects of extremely strong EPL  
Upper bound? (sample of older workers, strong EPL)
- Quantity effects only (sep's, emp, hours)—no wage adjustment
- Involuntary separations/retirement/hours cuts (Lazear 1979!)
- Compliers: high tenure, large firms, recently sick, **public sector**  
⇒ Swedish employers—*esp. private sector*—mostly get around EPL

Setting: Strong EPL

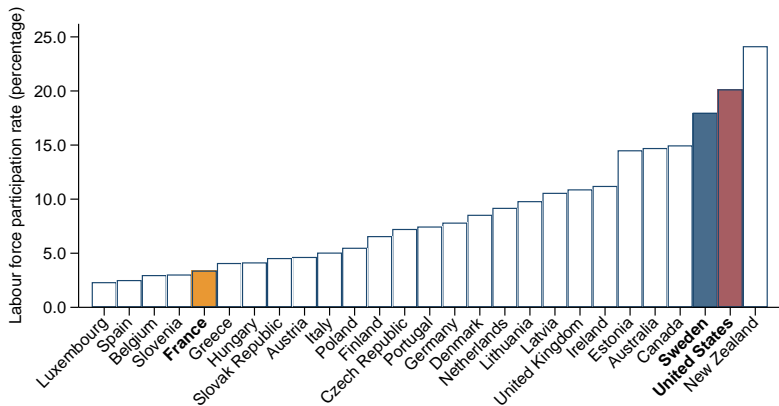
(OECD Index)



## Setting: High LFP Rate Among Older Pop: 60-64



# Setting: High LFP Rate Among Older Pop: 65+

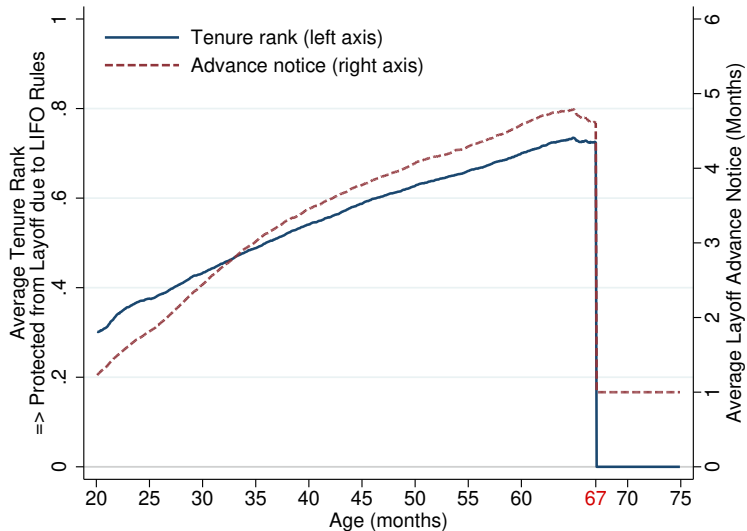


# Setting: Strong EPL Among Older Workers

As ~everywhere, Swedish EPL gradually increases w/ tenure (hence age):

- After 6 months, all regular contracts become protected: e.g., require legitimate cause for layoffs
- Advance notice requirement (multiple months)
  - Studied in Cederlof, Fredriksson, Nekoei, and Seim (2023)
- LIFO (last in, first out) within job type
  - Applies in case of redundancies
  - Age breaks tenure ties

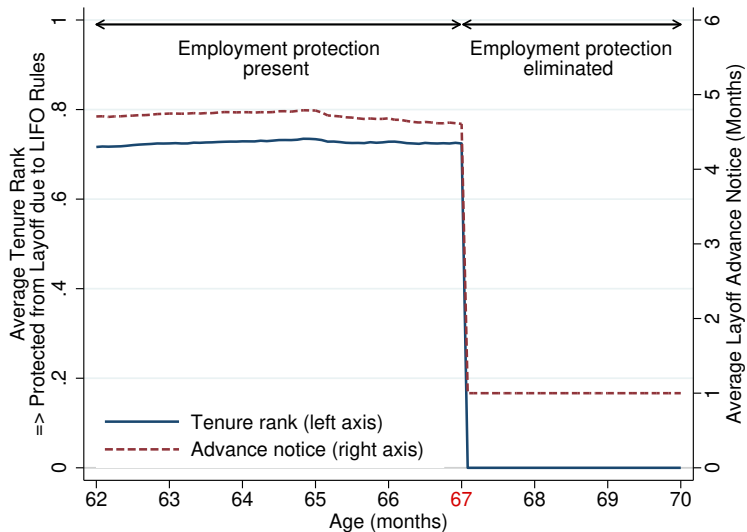
## Research Design: Elimination of EPL at Age 67



Plus additional CBA-based advance notice rules that are age-based (up to 12 months). Age also breaks tenure ranks in LIFO.

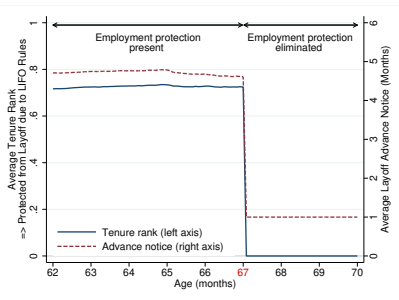


# Research Design: Elimination of EPL at Age 67



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# Research Design: Elimination of EPL at Age 67



## Identification opportunity from EPL variation at 67:

- Unusually large: maximal EPL to zero
- Sharp discontinuity—age measured precisely in admin data, and not manipulatable
- Clean: no other policy change at threshold (pension, UI, DI,...)
  - Modern Swedish pension system is flexible and actuarially fair w.r.t. to retirement age
- Additional reform-based variation of cutoff  
(65: pre-2003, 67: 2002-19; 68: 2000-22; 69: 2023+)

# Data (Merged)

## **Admin. matched employer-employee data** (universe)

- (Monthly) labor market biographies
- Focus on 2019  
(switch to highest accuracy of monthly earnings data; pre-COVID)
- Additional data (sickness, precise birth date, employer info,...)

## **Structure of Earnings Survey**

- Large, panel for subset, universe of public; employer-reported for full workforce at annual snapshot
- Information on hours/wages/earnings (rather than monthly earnings)

## **Labor Force Survey**

- Short panel
- Contract type (permanent/temporary)

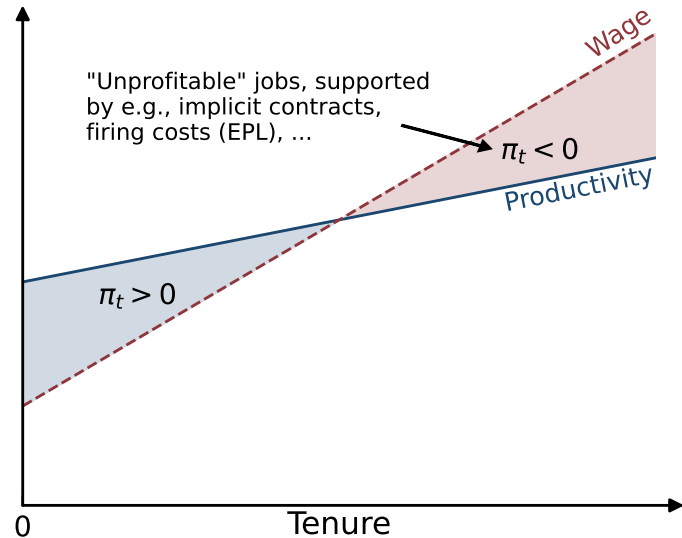
# Our Analysis is Reduced Form

Many potential conceptual frameworks

- DMP jobs w/ endogenous separations & heterogeneity
- Lifecycle labor supply
- Labor demand and adjustment costs
- Long-term contracts—broadly, provides good account of findings
- ...

## Example: Lazear (1979)-Type Setting

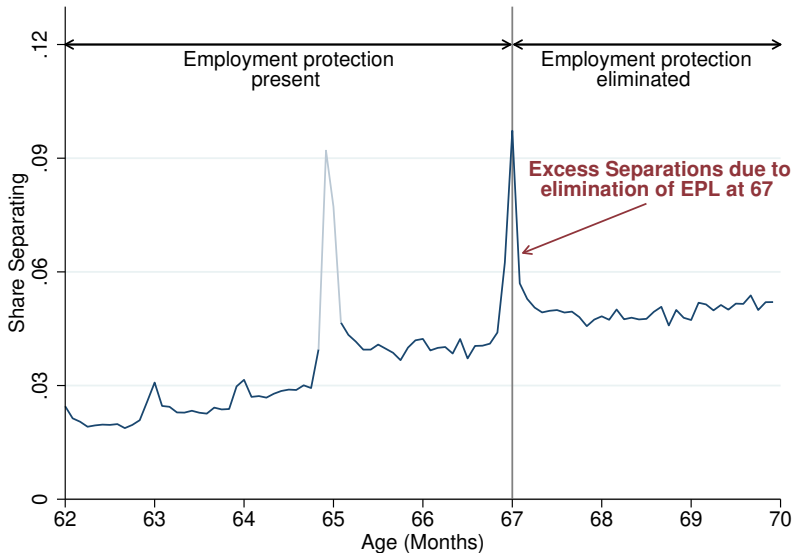
(Preview: Broadly, this view provides a good account of our findings.)



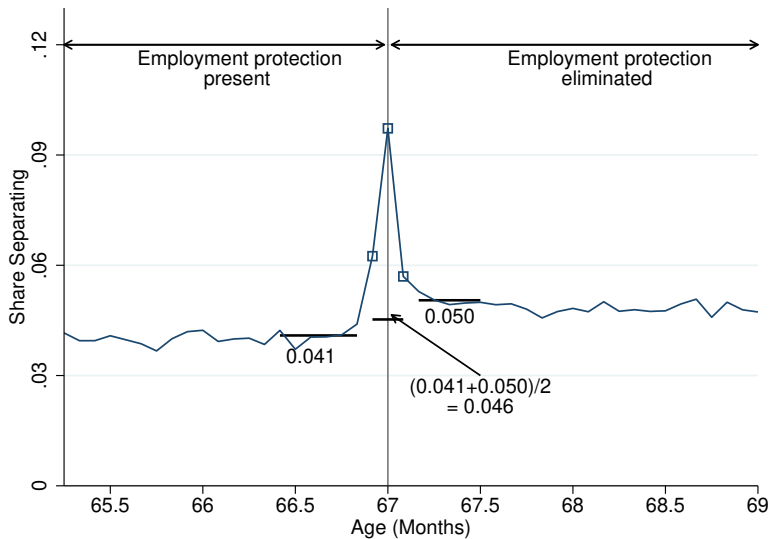
# Empirical Roadmap

1. **Now: Direct effect on separations**
2. Understanding the effect
3. Beyond separations: effects on stayers
4. Total effect: employment, hiring, earnings per capita
5. Policy evaluation and counterfactual: reform-based EPL shifts

# Spike of Job Separations at EPL Phase-Out Age 67



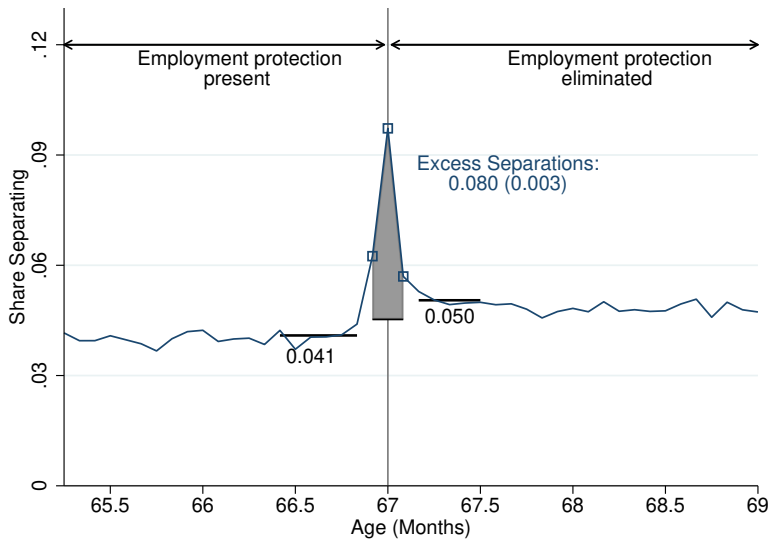
# Quantifying the Effect: Bunching Analysis



Basic Saez (2010) bunching method. Similar results w/ polynomial counterfactual (Chetty et al. 2014).

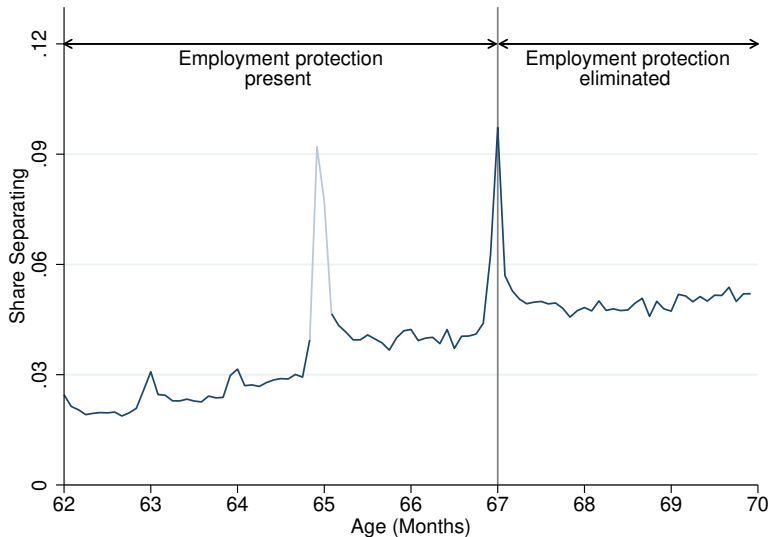


# Quantifying the Effect: Bunching Analysis



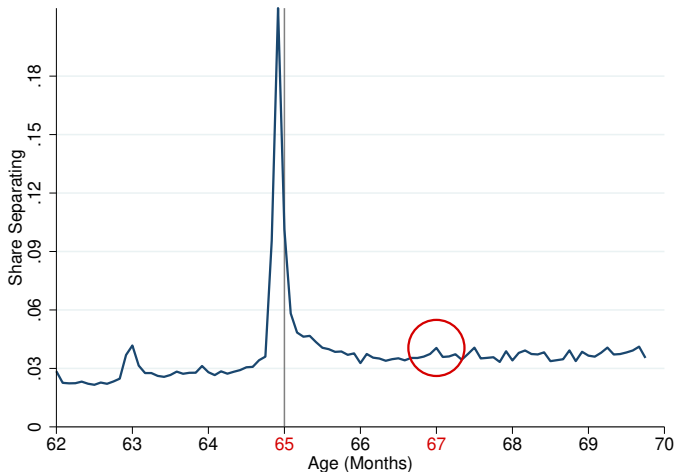
Basic Saez (2010) bunching method. Similar results w/ polynomial counterfactual (Chetty et al. 2014).

# Validation of Effect: Causation by EPL?



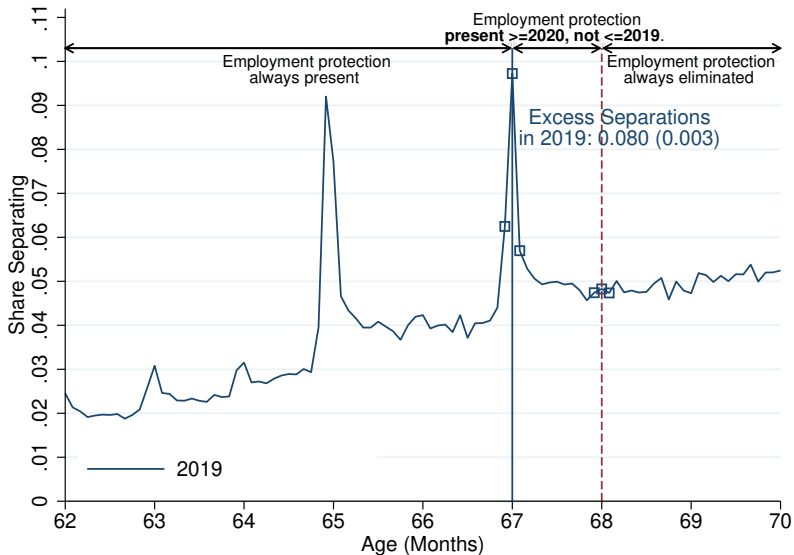
Placebo: No Spike in 2002 (Cutoff was 65 Pre-2003)

Spike at 65 Larger: Confounding EPL with Retirement at 65

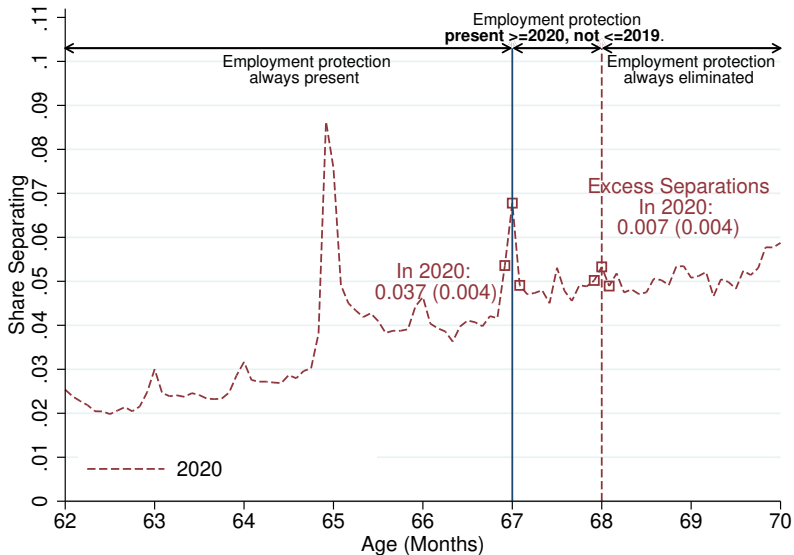


Note: due to (monthly) data quality limitations pre-2019 and retirement norms / incentives at 65 in those years, the spike at 65 pre-2003 does not lend itself to identifying EPL effects, and we focus on the post-2019 period.

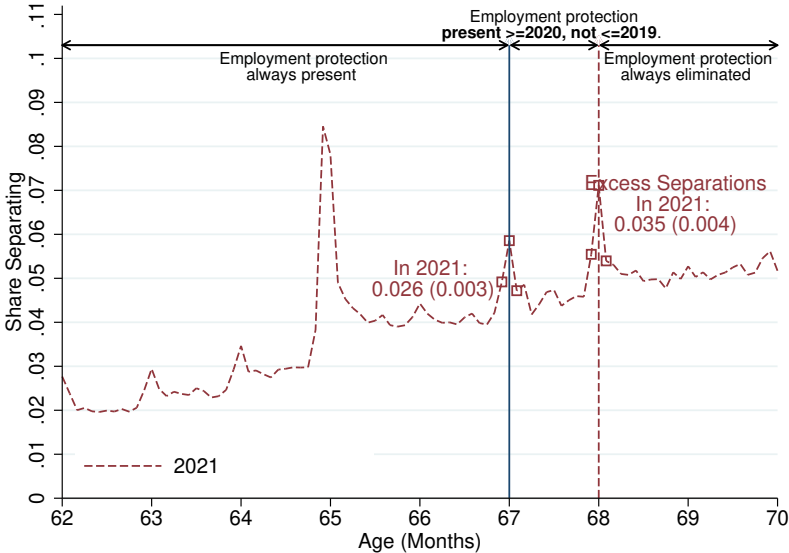
# Reform in 2020: Spike Migrates from 67 to 68



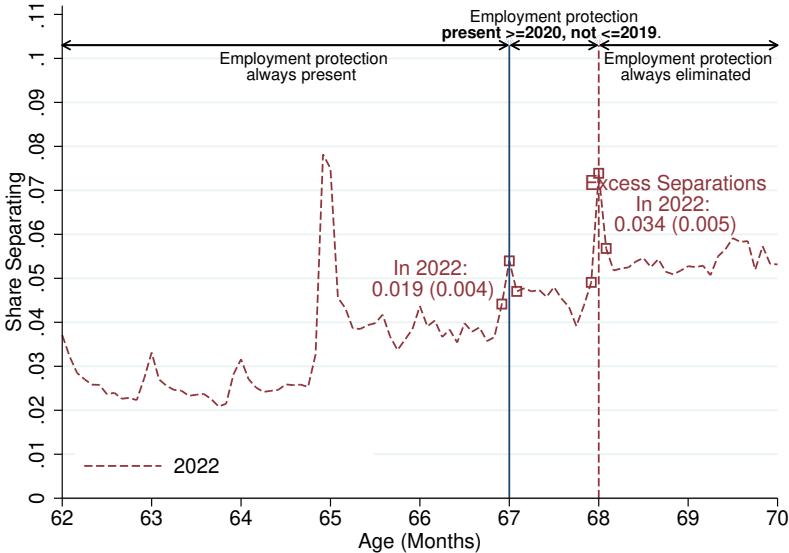
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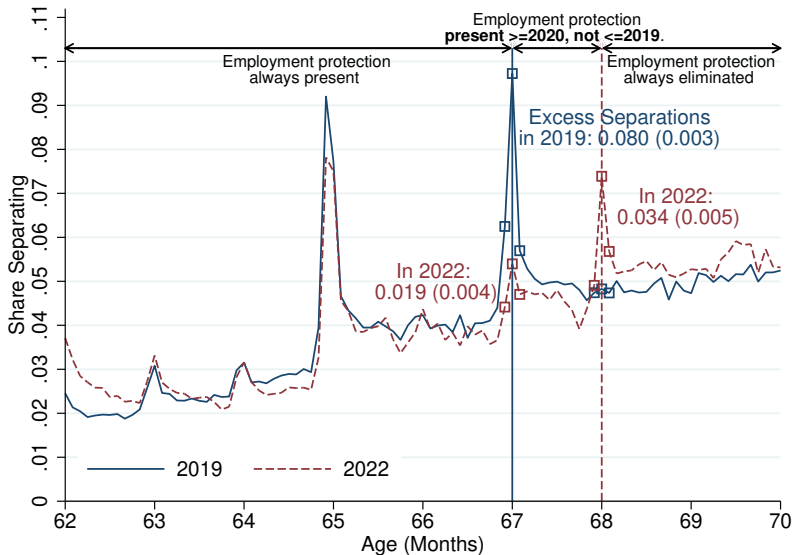
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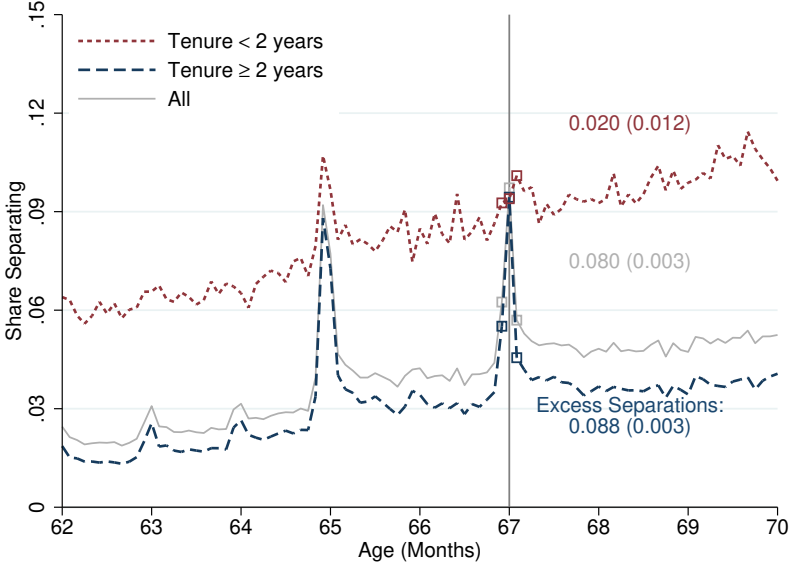


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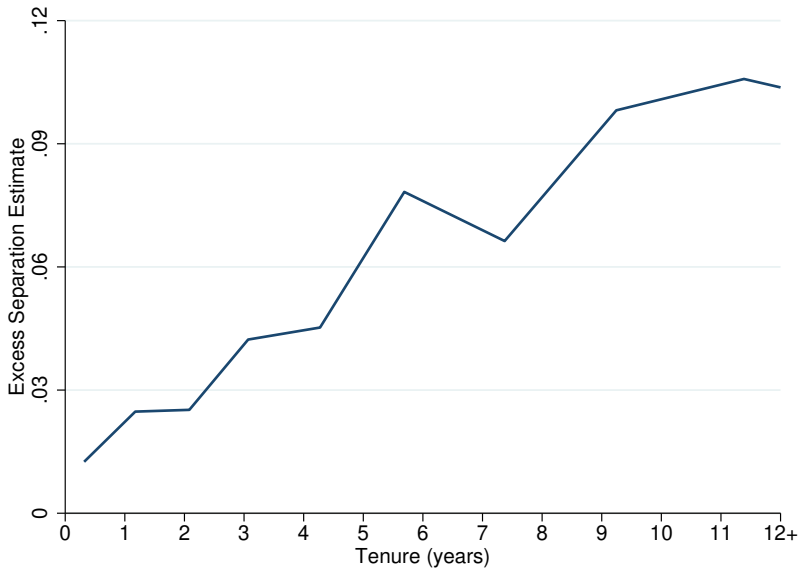




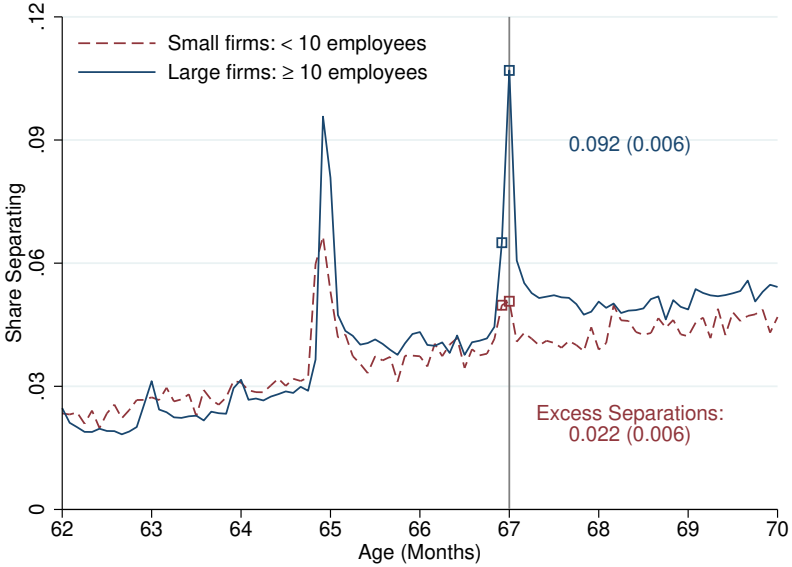
# Heterogeneity by EPL Strength: Tenure Rank



## Heterogeneity by EPL Strength: Tenure



# Het. by EPL Strength: Relaxed LIFO For Small Firms



# Taking Stock

Clear effect: about 8% of jobs separate in response to elimination of strong EPL

- Likely **upper bound** for causal direct micro effect of EPL on separation—strong Swedish EPL and maximally protected workers, with retirement outside option

Sharply concentrated around 67

Causal effect of EPL

Tenure rules and LIFO seem to play significant role

Open questions we start exploring next:

- Which mechanisms can account for the spike?
- Which jobs and workers drive the effect?

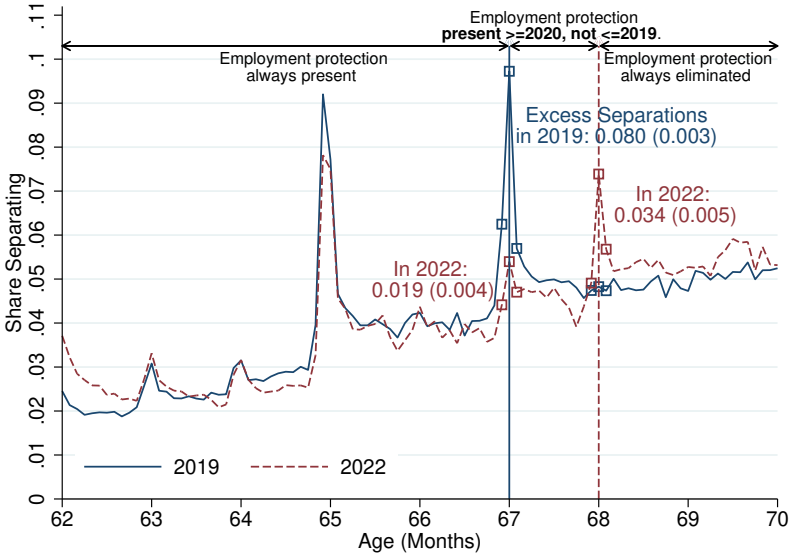
Afterwards: beyond separations—stayers and total labor market effects

# Empirical Roadmap

1. Direct effect on separations
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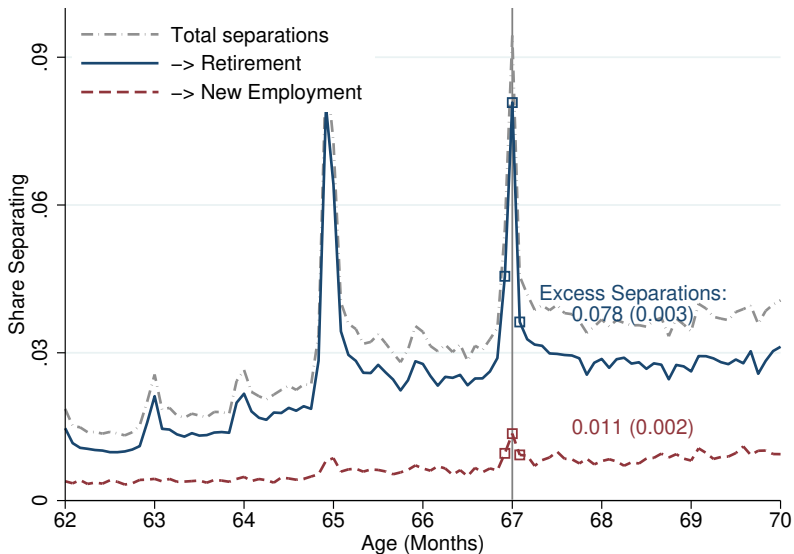
# Recap: Spike Moves from 67 to 68 with Cutoff

⇒ Spike Captures Sep's Involuntary to Worker

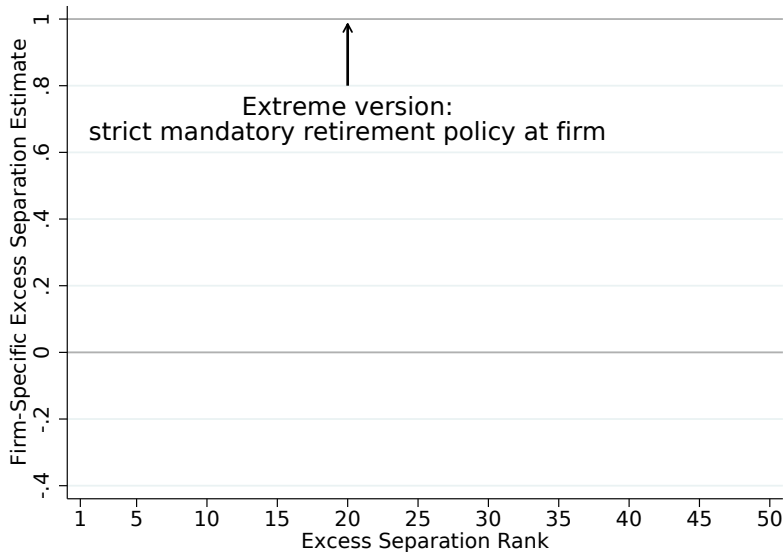


# Spike Goes Into Permanent Nonemployment

⇒ Happily Stay Put—But Won't Find/Take Other Job

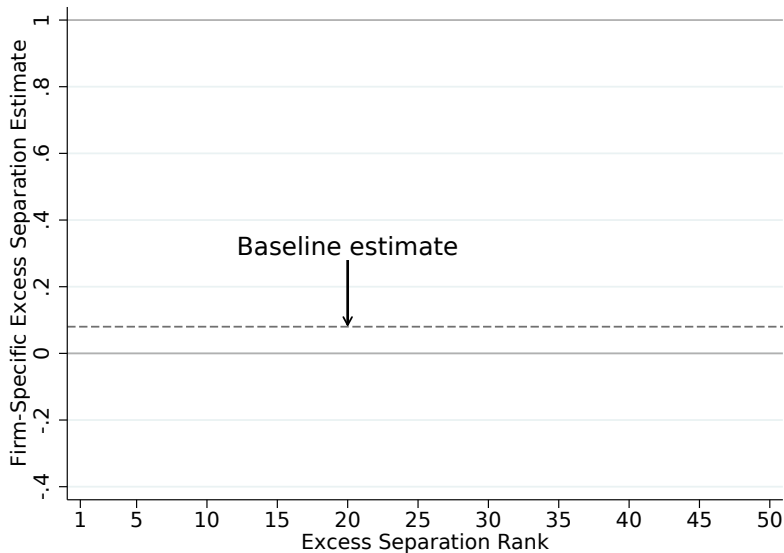


# Excess Seps Not Concentrated in Specific Firms



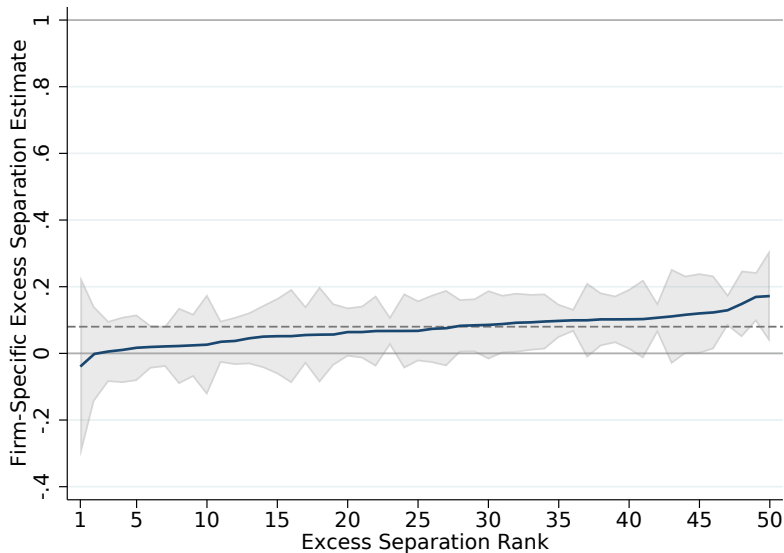


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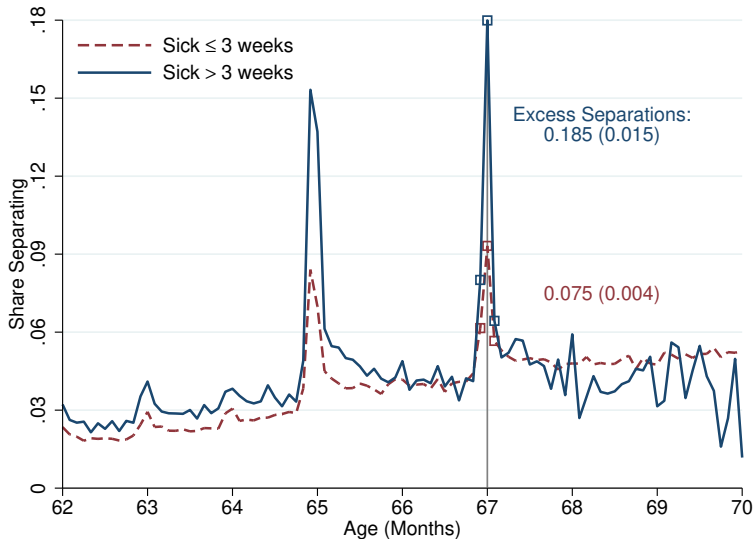


## Excess Seps Not Concentrated in Specific Firms

⇒ **No Evidence for Mandatory Retirement HR Policies**

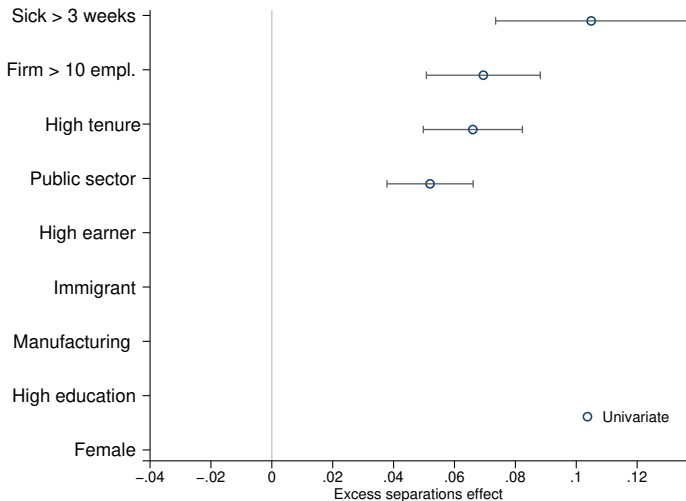


# Recently (in 2018) Sick Workers Separate at 67 ⇒ Firms Getting Rid of Less Productive Workers?



Sickness in 2018 flagged in administrative data corresponding to about 3 weeks of sickness.

# Heterogeneity: Regression Analysis: Uni-variate



Method of regression-based bunching analysis: regression in micro data with age dummies interacted with binary variable(s); bunching analysis is done on the basis of interaction coefficients on focal ages as in baseline bunching analysis.

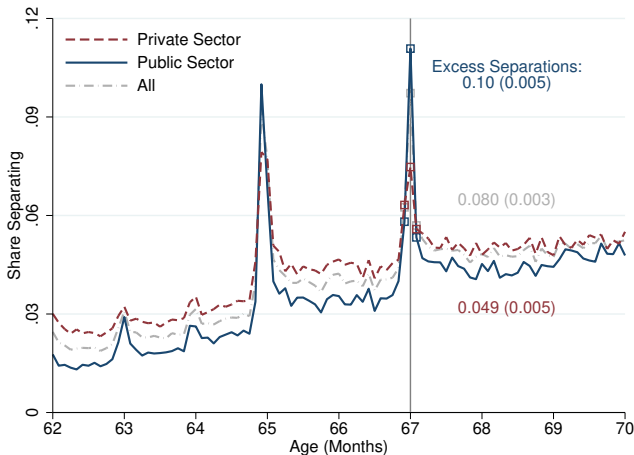
## Effect Stronger in Public Sector

⇒ Implicit contracts? Lump of labor? “Good” jobs?

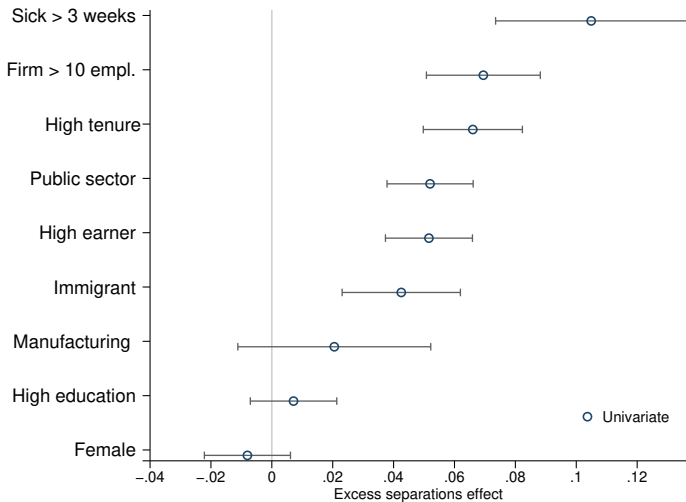
Less pre-67 pressure and selection?

How does private sector get around EPL?

Profs coming soon! (Ashenfelter Card 2002)

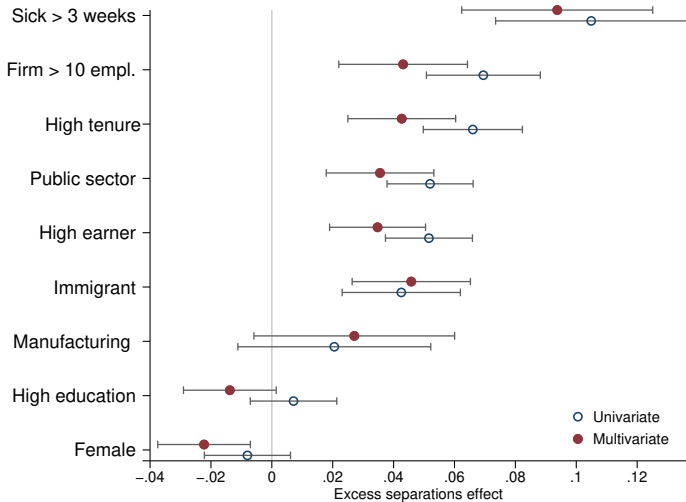


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# Heterogeneity: Regression Analysis: MULTI-var



Method of regression-based bunching analysis: regression in micro data with age dummies interacted with binary variable(s); bunching analysis is done on the basis of interaction coefficients on focal ages as in baseline bunching analysis.

# Taking Stock

**Clear effect:** about 8% of jobs separate in response to elimination of strong EPL, sharply around 67

## **Understanding the effect:**

- Patterns broadly consistent with Lazear (1979) type setting
- Involuntary separations—spike migrates when EPL cutoff shifts
- Not concentrated in firms; no firm-wide mandatory retirement; firms seem to cherry-pick
- Suggestive targeting of low-productivity workers (sickness proxy)
- Workers driving the spike appear happy to work in this job (presumably enjoying a rent), but do not take/find other job post-separation
- Separations effect driven by public sector—private employers appear to get around EPL much better, much smaller effect there

**Next:** total labor market effects (beyond separations)



# Empirical Roadmap

1. Direct effect on separations
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# Panel Analysis of Stayers in Same Job: Hours and Wage, and Earnings

**Goal:** effects on **stayers** along margins such as wages and hours

**But:** only see monthly (job-specific) earnings in admin matched employer-employee data

**Solution:** draw on **Structure of Earnings Survey** to study hours (fraction of full time) and wages

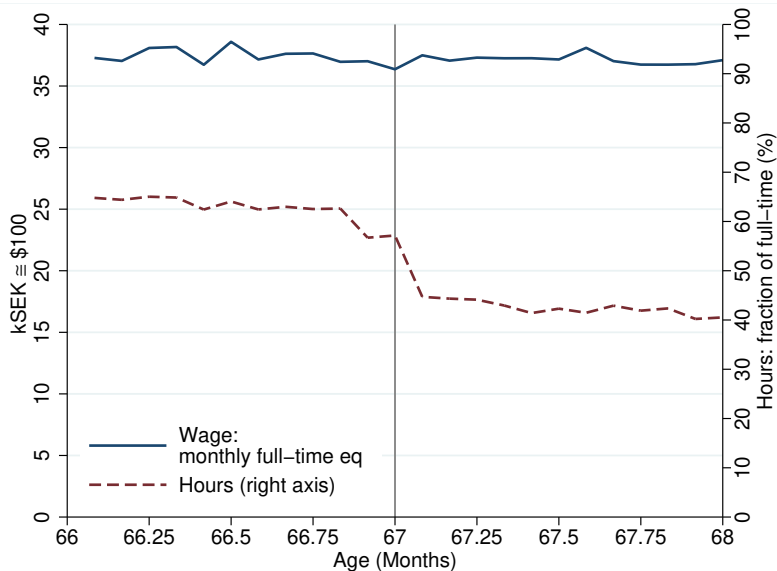
- Coverage beyond 67: **public sector only**
- (Cross-check in admin data for private sector later)

**Annual panel—focus on balanced panel of stayers in same firm around 67**  
(same employer before and after 67 in narrow age window)

# Panel Analysis of Stayers:

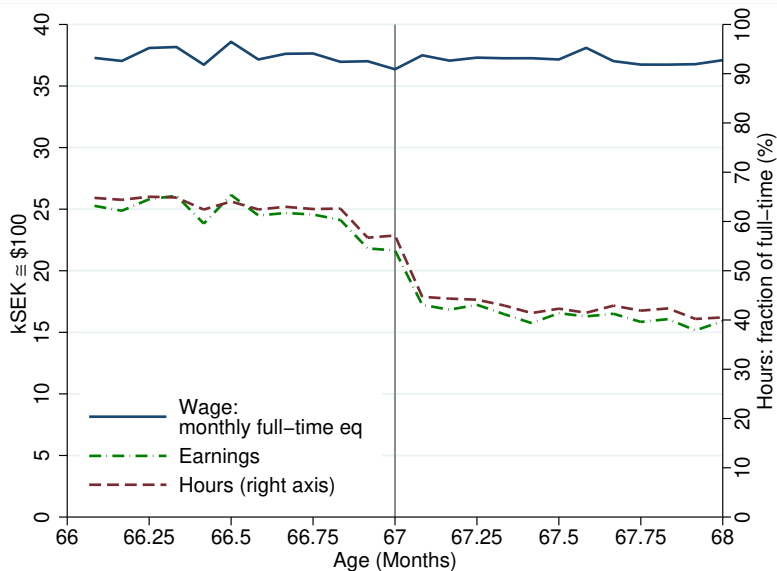
## Hours and Wage

Structure Earnings Survey, Public Sector



# Panel Analysis of Stayers:

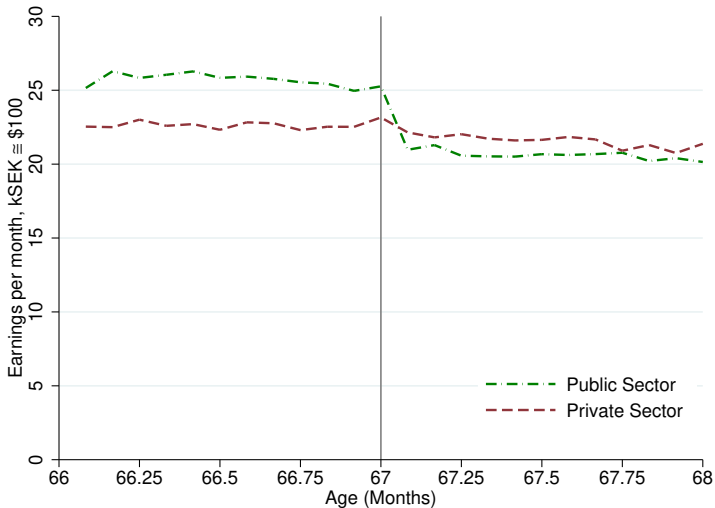
Hours, Wage, **Earnings** Structure Earnings Survey, Public Sector



# Panel Analysis of Stayers:

## Earnings

Now Back to Admin Data, incl Private

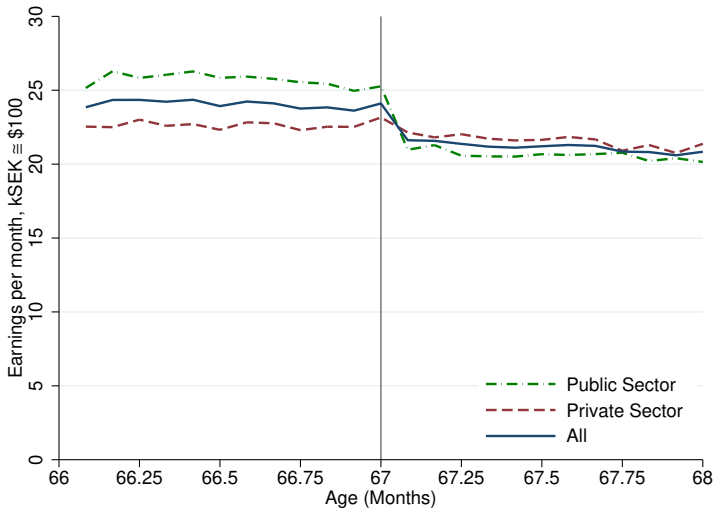


Stayers continuously employed with same employer between age 66 and 67 and 4 months; starting 67.5, only stayers' outcomes.

# Panel Analysis of Stayers:

## Earnings

Now Back to Admin Data, incl Private



Stayers continuously employed with same employer between age 66 and 67 and 4 months; starting 67.5, only stayers' outcomes.

# Panel Analysis of Stayers:

## Earnings Growth

Now Back to Admin Data, incl Private

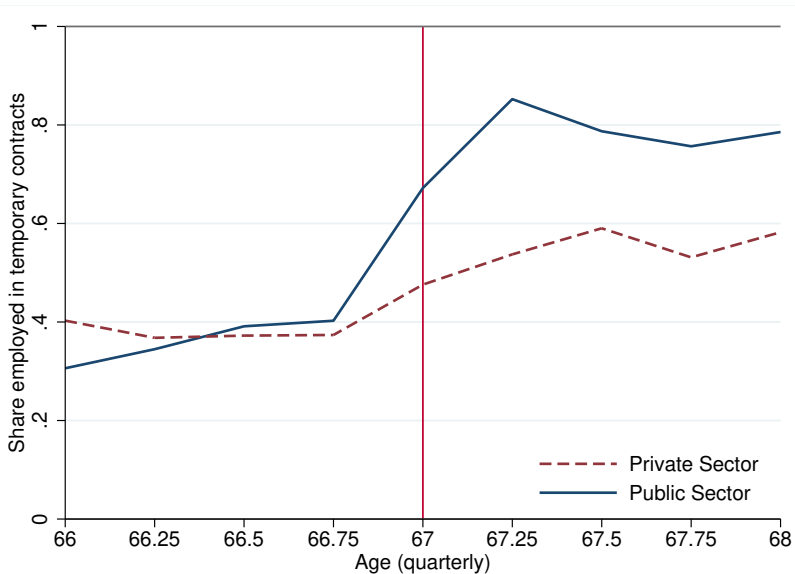


Stayers continuously employed with same employer between age 66 and 67 and 4 months; starting 67.5, only stayers' outcomes.

# Panel Analysis of Stayers:

## Temp Contracts

Labor Force Survey

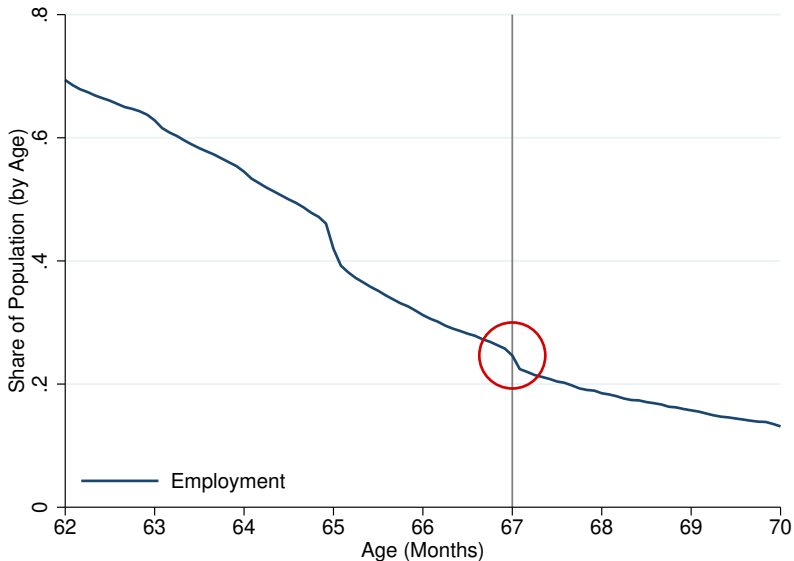




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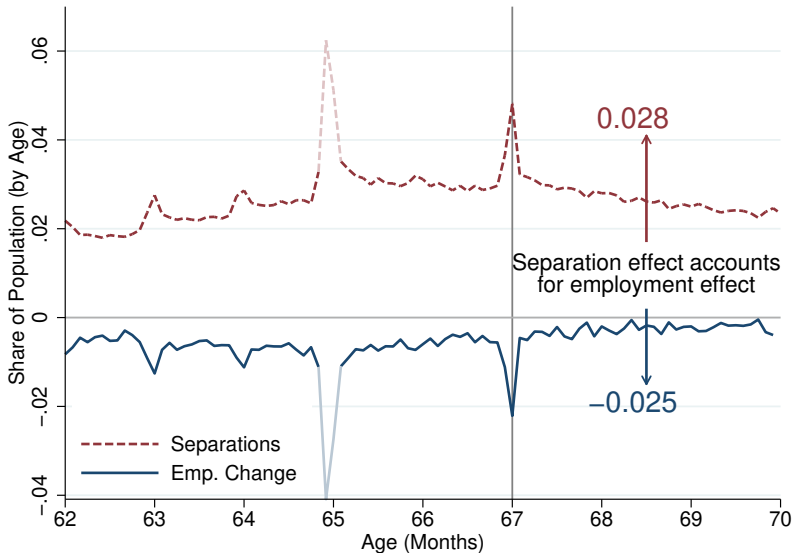
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# Total Effect: Employment-Population Ratio in 2019



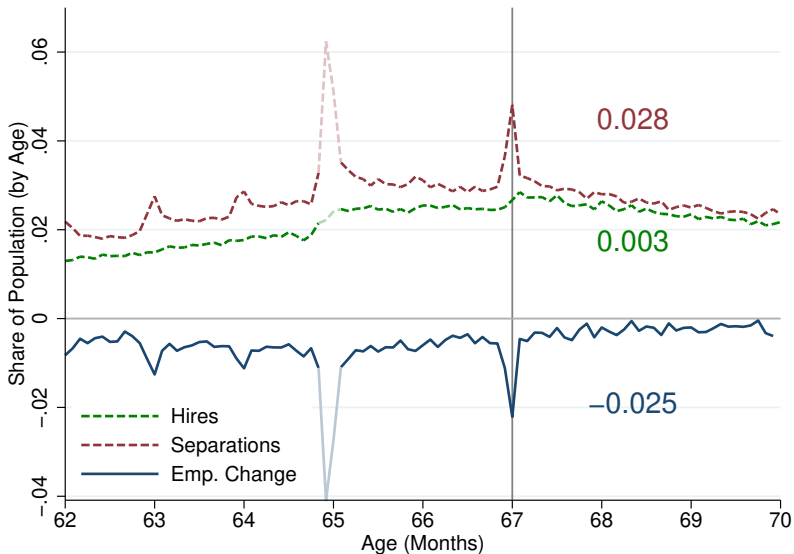
# E-Pop: Change Decomp

$$\Delta \text{Emp} = \text{Hires} - \text{Sep's}$$

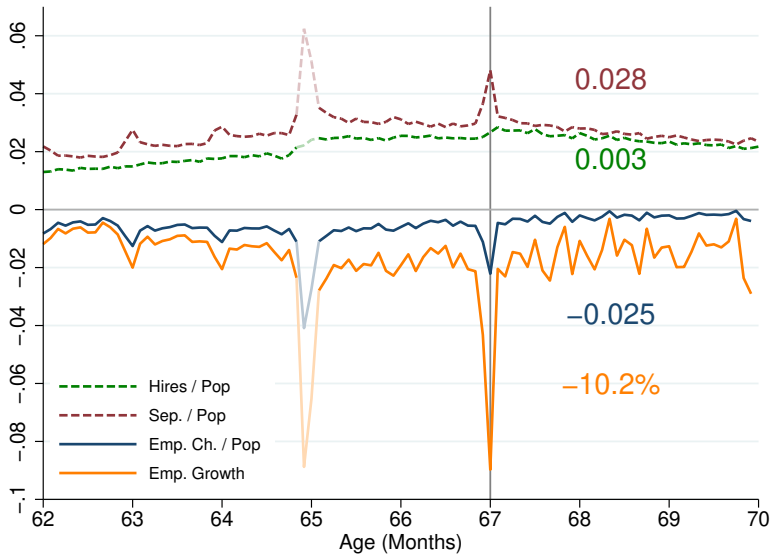


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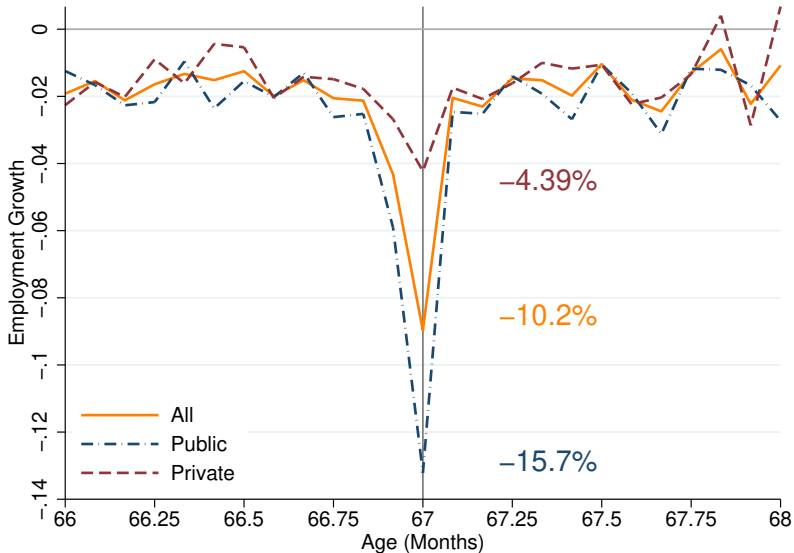
$$\Delta \text{Emp} = \text{Hires} - \text{Sep's}$$



# E-Pop: Change ( $\Delta\text{Emp}$ ) vs. Growth ( $\frac{\Delta\text{Emp}}{\text{Emp}}$ )

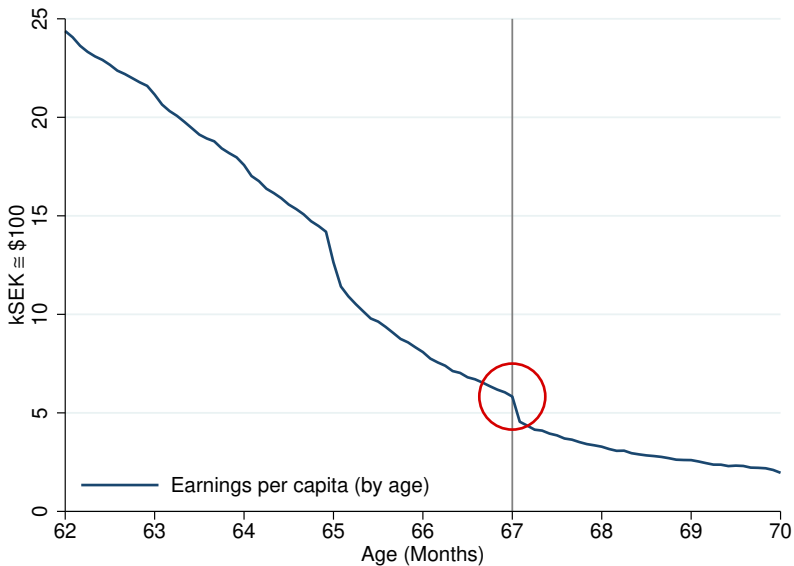


## E-Pop: Effect Concentrated in Public Sector



# Earnings Per Capita

$$Y = \bar{y} \cdot E + 0 \cdot (P - E) = \bar{y}E$$



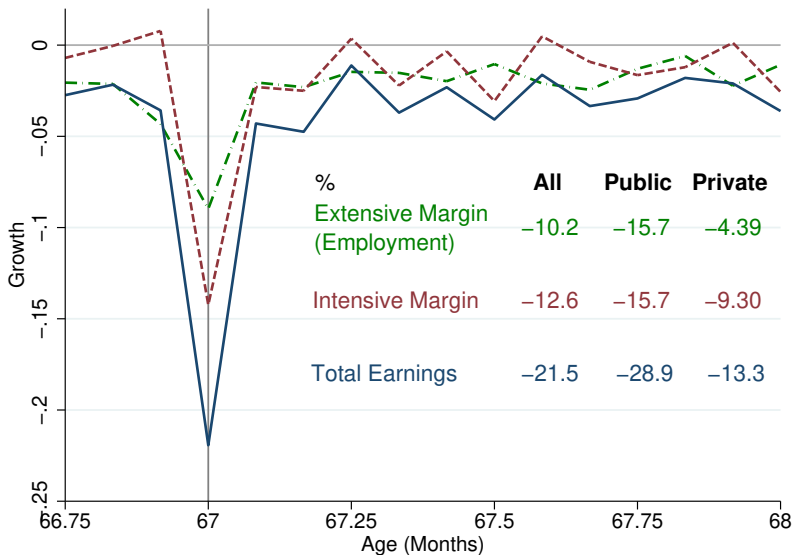
Earnings p.c.: Int + Ext Margins

$$\frac{\Delta(\bar{y}E)}{\bar{y}E} \approx \frac{\Delta\bar{y}}{\bar{y}} + \frac{\Delta E}{E}$$





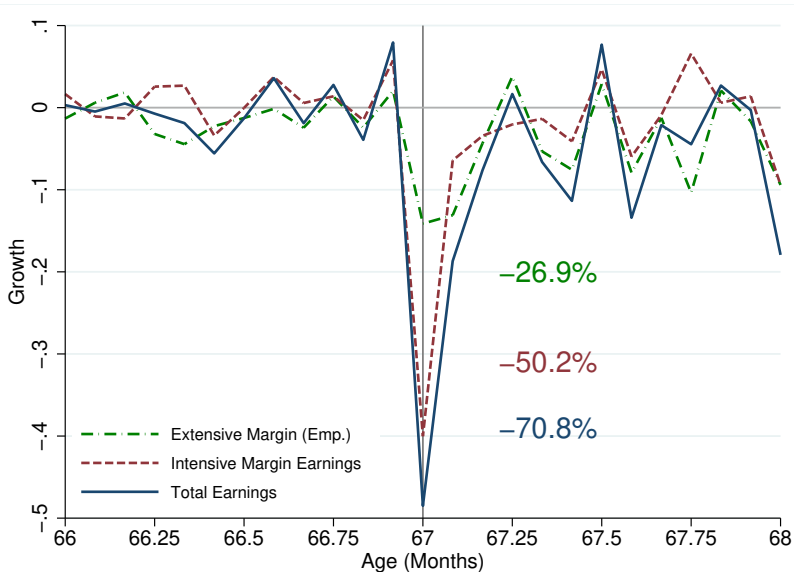
# Earnings p.c. Decomp: Again, Small in Private



# Earnings p.c. Decomp: **Professors Are Special!**

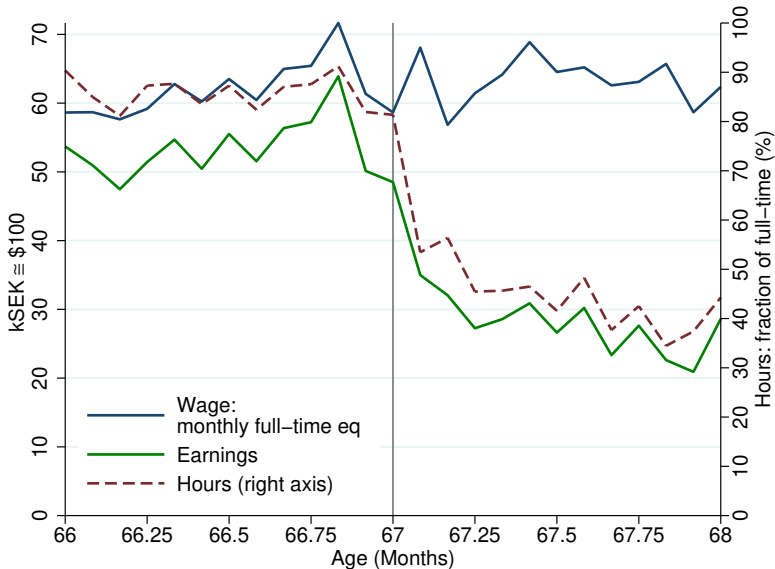
See: Ashenfelter and Card (2002)

Ashenfelter Card 2002



# Professors: Hours/Wages/Earnings Among Stayers

Ashenfelter Card 2002



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# Final Step: Non-Local Analysis of EPL Reform

**Untested identification assumption** of *local* analysis so far:

- Effect is entirely concentrated on impact, locally around 67 cutoff, no effect on other ages

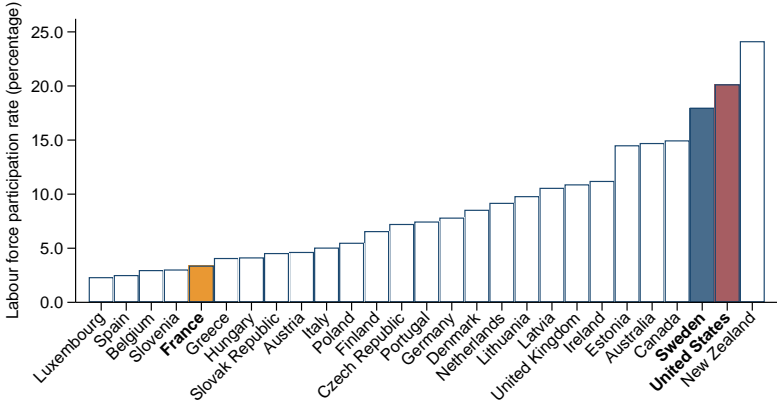
**Ideal experiment:** push out EPL cutoff age

- Our local analysis predicts employment effects accounted for by separations
- Predicts convergence again at the **next age cutoff by delaying separations**

**Additional implied prediction** of findings so far: EPL can boost lifecycle employment by extending duration and hours (of last job)

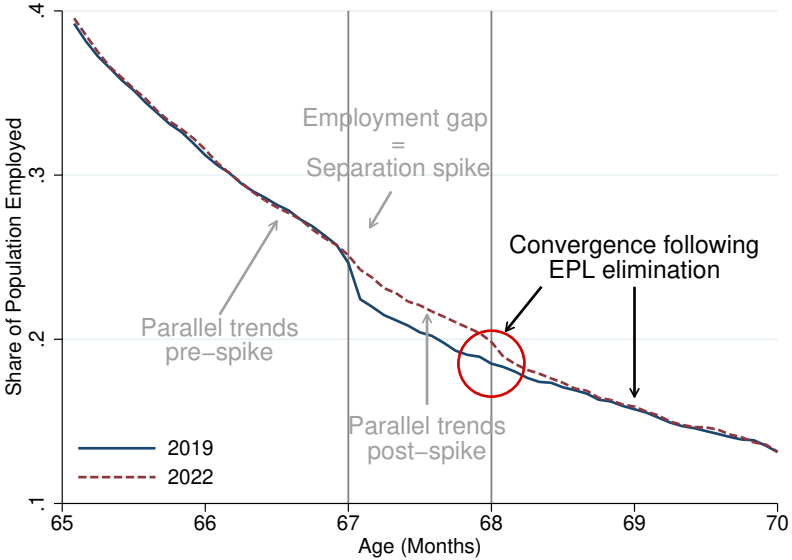
**Policy relevance:** Swedish government is extending cutoffs with the stated goal of boosting employment

# Equilibrium vs. Local Analysis



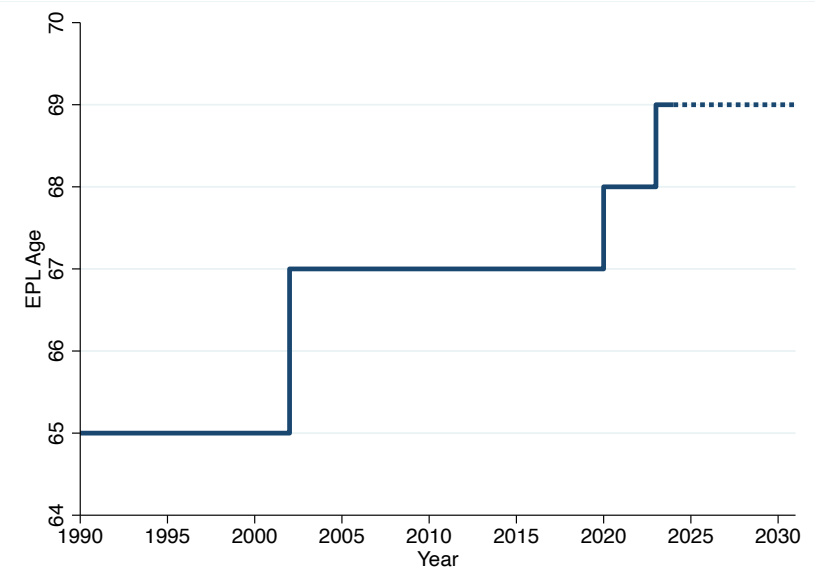
LFP Rate Among Older Pop: 65+; OECD 2019; Anglo-Am/EU comparison

# E-Pop with EPL until 68: 2022



Note: alignment of lines at baseline age.

# Policy Variation: Reform of EPL Cutoff Age





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# Conclusion

**Strategy:** exploit sharp age discontinuity that eliminates strong EPL for Swedish older workers

**Find clear effect on quantities (sep's & hours)—zero wage effect**

- About 8% of jobs separate
- No hiring effect, 10% employment effect, 20% earnings effect

**Interpretation:**

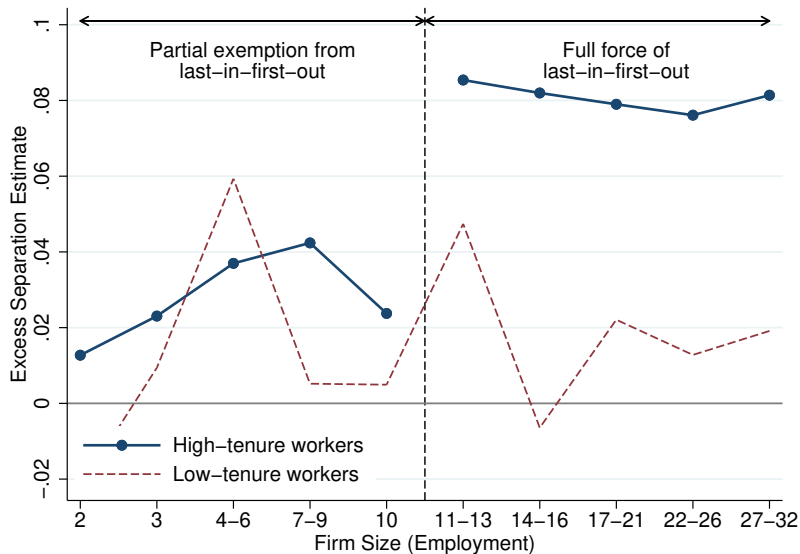
- Involuntary separations/retirement/hours cuts (squares w/ Lazear 1979)
  - Compliers: high tenure, large firms, recently sick, **public sector**
- ⇒ Swedish employers—*esp. private sector*—mostly get around EPL
- Upper bound? (older workers, strong EPL, small effect on private)

**Potential policy implications:**

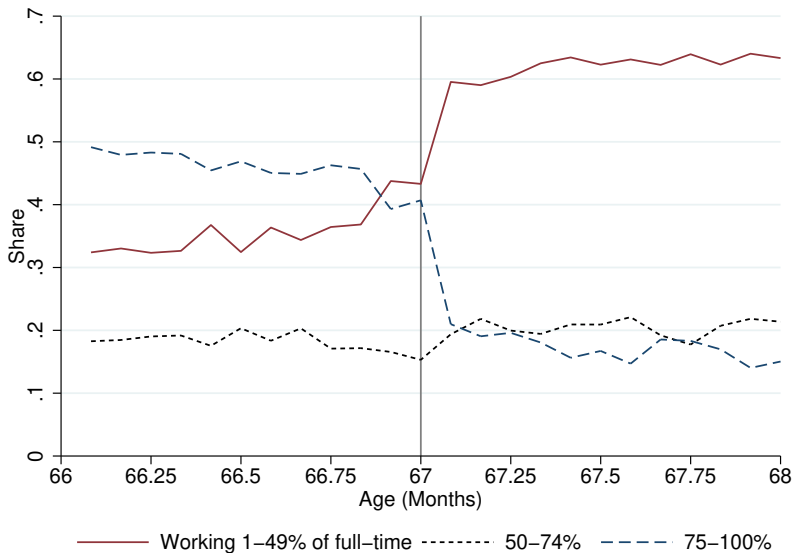
- Extending EPL can provide boost to worklife (in last job)
  - Relatively powerful leverage compared to, e.g., tax incentives?
- Caveat: redistribution (from firms to workers) (at least ex post)
- Caveat: untested potential equilibrium effects (younger workers)

# APPENDIX SLIDES

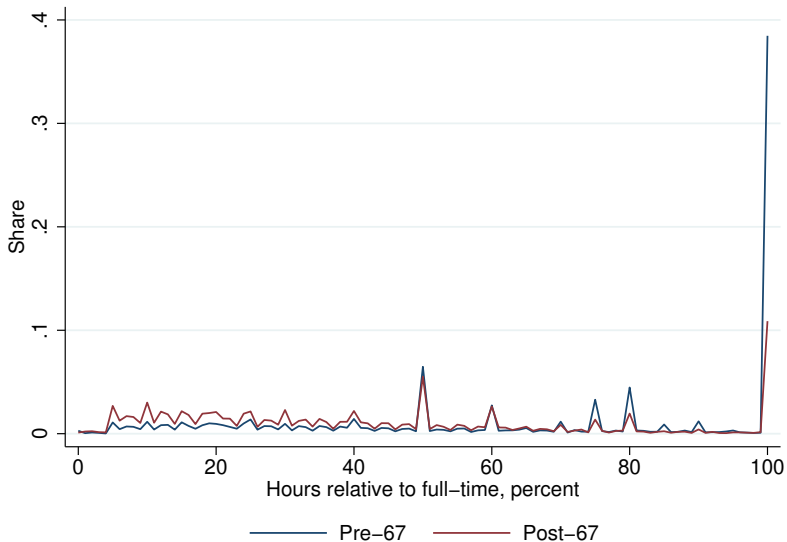
# RD Spirit: Firm Size Cutoff for Life



## Hours: Full-time to (< 50%) Part-time



# Hours Adjustment



# US Prof's Losing Tenure at 70

Ashenfelter and Card (2002)

