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
July 2023
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
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)

OECD 2019; Anglo-Am/EU comparison
Setting: High LFP Rate Among Older Pop: 60-64

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

OECD 2019; Anglo-Am/EU comparison
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
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

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

"Unprofitable" jobs, supported by e.g., implicit contracts, firing costs (EPL), ...

\[ \pi_t > 0 \]

\[ \pi_t < 0 \]
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

Employment protection eliminated

Excess Separations due to elimination of EPL at 67

Share Separating

Age (Months)
Quantifying the Effect: Bunching Analysis

Quantifying the Effect: Bunching Analysis

Validation of Effect: Causation by EPL?

Graph showing the share separating at different ages (in months) with employment protection present and eliminated.
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

Excess Separations in 2019: 0.080 (0.003)


Employment protection always present

Employment protection always eliminated

Excess Separations in 2019: 0.080 (0.003)
Reform in 2020: Spike Migrates from 67 to 68

In 2020:

- Excess Separations
  - 0.007 (0.004)

Employment protection is present from 2020 but not before 2019.

Share Separating by Age (Months):
- 62
- 63
- 64
- 65
- 66
- 67
- 68
- 69
- 70

Excess Separations:
- In 2020: 0.037 (0.004)
Reform in 2020: Spike Migrates from 67 to 68

Excess Separations
In 2021:
0.035 (0.004)
In 2021:
0.026 (0.003)

Employment protection present \(\geq 2020\), not \(\leq 2019\).

Employment protection always present

Employment protection always eliminated

Share Separating

62 63 64 65 66 67 68 69 70
Age (Months)

2021
Reform in 2020: Spike Migrates from 67 to 68

Excess Separations
In 2022: 0.034 (0.005)
In 2022: 0.019 (0.004)


Employment protection always present
Employment protection always eliminated

Share Separating
62 63 64 65 66 67 68 69 70
Age (Months)

Excess Separations
In 2022: 0.034 (0.005)
In 2022: 0.019 (0.004)
Reform in 2020: Spike Migrates from 67 to 68


Excess Separations
in 2019: 0.080 (0.003)

In 2022:
0.034 (0.005)
0.019 (0.004)

Share Separating
62 63 64 65 66 67 68 69 70
Age (Months)
Heterogeneity by EPL Strength: Tenure Rank

- **Separations by Tenure Rank**
  - Tenure < 2 years: 0.080 (0.003)
  - Tenure ≥ 2 years: 0.088 (0.003)
  - All: 0.020 (0.012)

- **Share Separating by Age (Months)**
  - Age (Months): 62, 63, 64, 65, 66, 67, 68, 69, 70

- **Graph**
  - Tenure < 2 years (dashed red)
  - Tenure ≥ 2 years (dashed blue)
  - All (solid gray)
  - Excess Separations:
    - All: 0.020 (0.012)
    - 0.080 (0.003)
  - Share Separating:
    - 0.088 (0.003)
Het. by EPL Strength: Relaxed LIFO For Small Firms

Small firms: < 10 employees
Large firms: ≥ 10 employees

Excess Separations:
0.022 (0.006)

Share Separating
62 63 64 65 66 67 68 69 70

Age (Months)
RD Spirit: Firm Size Cutoff for Life (tentative)

- Partial exemption from last-in-first-out
- Full force of last-in-first-out

Excess Separation Estimate
- High-tenure workers
- Low-tenure workers

Firm Size (Employment)
- 2
- 3
- 4-6
- 7-9
- 10
- 11-13
- 14-16
- 17-21
- 22-26
- 27-32

Back
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

2. Next: Understanding the effect

3. Beyond separations: effects on stayers

4. Total effect: employment, hiring, earnings

5. Policy evaluation and counterfactual: reform-based EPL shifts
Recap: Spike Moves from 67 to 68 with Cutoff
⇒ Spike Captures Sep’s Involuntary to Worker

Employment protection present $\geq 2020$, not $\leq 2019$.

Excess Separations in 2019: 0.080 (0.003)

In 2022:
- 0.034 (0.005)
- 0.019 (0.004)
Spike Goes Into Permanent Nonemployment
⇒ Happily Stay Put—But Won’t Find/Take Other Job

Excess Separations:

<table>
<thead>
<tr>
<th>Share Separating</th>
<th>Age (Months)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.078 (0.003)</td>
<td>67</td>
</tr>
<tr>
<td>0.011 (0.002)</td>
<td>67</td>
</tr>
</tbody>
</table>

Total separations:

- Retirement
- New Employment
Excess Seps Not Concentrated in Specific Firms

Extreme version:
strict mandatory retirement policy at firm

Firm-Specific Excess Separation Estimate

Excess Separation Rank

Excess Separation Rank
Excess Seps Not Concentrated in Specific Firms

Baseline estimate

Firm-Specific Excess Separation Estimate

Excess Separation Rank
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: **Univariate**

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

2. Understanding the effect

3. Next: Beyond separations: effects on stayers

4. Total effect: employment, hiring, earnings

5. Policy evaluation and counterfactual: reform-based EPL shifts
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

Wage:
monthly full-time eq

Hours (right axis)

Age (Months)

kSEK ≅ $100

66 66.25 66.5 66.75 67 67.25 67.5 67.75 68
Panel Analysis of Stayers: Hours, Wage, Earnings
Structure Earnings Survey, Public Sector
Panel Analysis of Stayers:

Earnings

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

Share employed in temporary contracts vs. Age (quarterly) for Private and Public Sector.
Empirical Roadmap

1. Direct effect on separations

2. Understanding the effect

3. Beyond separations: effects on stayers

4. Next: Total effect: employment, hiring, earnings

5. Policy evaluation and counterfactual: reform-based EPL shifts
Total Effect: Employment-Population Ratio in 2019

[Graph showing the employment-population ratio by age, with a peak around age 66, indicated by a red circle.]
\[ \Delta \text{Emp} = \text{Hires} - \text{Sep's} \]
E-Pop: Change Decomp

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

![Graph showing the decomposition of employment change with lines representing Hires, Separations, and Employee Change.](chart.jpg)
E-Pop: Change ($\Delta Emp$) vs. Growth ($\frac{\Delta Emp}{Emp}$)

-0.025
0.028
0.003
-10.2%
-0.1
-0.08
-0.06
-0.04
-0.02
0
0.02
0.04
0.06
62 63 64 65 66 67 68 69 70
Age (Months)
Hires / Pop
Sep. / Pop
Emp. Ch. / Pop
Emp. Growth
E-Pop: Effect Concentrated in Public Sector

Employment Growth

Age (Months)

-10.2%
-15.7%
-4.39%
-0.14
-0.12
-0.1
-0.08
-0.06
-0.04
-0.02
0

All
Public
Private

-4.39%
-10.2%
-15.7%
Earnings Per Capita

\[ Y = \bar{y} \cdot E + 0 \cdot (P - E) = \bar{y}E \]
Earnings p.c.: Int + Ext Margins

\[ \Delta \left( \frac{\bar{y}E}{yE} \right) \approx \Delta \left( \frac{\bar{y}}{y} \right) + \frac{\Delta E}{E} \]

### Earnings Components

**Extensive Margin (Employment)**
- Growth: -10.2%

**Intensive Margin**
- Growth: -12.6%

**Total Earnings**
- Growth: -21.5%

**Graph Details**

- **Y-axis**: Growth
- **X-axis**: Age (Months)
- **Age Ranges**: 66 to 68 months
Earnings p.c. Decomp: Again, Small in Private

<table>
<thead>
<tr>
<th></th>
<th>All</th>
<th>Public</th>
<th>Private</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extensive Margin (Employment)</td>
<td>-10.2</td>
<td>-15.7</td>
<td>-4.39</td>
</tr>
<tr>
<td>Intensive Margin</td>
<td>-12.6</td>
<td>-15.7</td>
<td>-9.30</td>
</tr>
<tr>
<td>Total Earnings</td>
<td>-21.5</td>
<td>-28.9</td>
<td>-13.3</td>
</tr>
</tbody>
</table>

Age (Months)
Earnings p.c. Decomp: Professors Are Special!
Empirical Roadmap

1. Direct effect on separations
2. Understanding the effect
3. Beyond separations: effects on stayers
4. Total effect: employment, hiring, earnings
5. Next and last: Policy evaluation and counterfactual: reform-based EPL shifts
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
Employment gap = Separation spike
Convergence following EPL elimination
Parallel trends pre–spike
Parallel trends post–spike
Note: alignment of lines at baseline age.
Policy Variation: Reform of EPL Cutoff Age

Year | EPL Age
--- | ---
1990 | 65
1995 | 66
2000 | 67
2005 | 67
2010 | 67
2015 | 67
2020 | 69
2025 | 69
2030 | 69
Empirical Roadmap

1. Direct effect on separations

2. Understanding the effect

3. Beyond separations: effects on stayers

4. Total effect: employment, hiring, earnings

5. Policy evaluation and counterfactual: reform-based EPL shifts
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)
Hours: Full-time to (<50%) Part-time

Histogram

- Working 1–49% of full-time
- 50–74%
- 75–100%
US Prof’s Losing Tenure at 70
Ashenfelter and Card (2002)