The Effects of Eliminating Employment Protection

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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 ($65 \rightarrow 67 \rightarrow 68$)

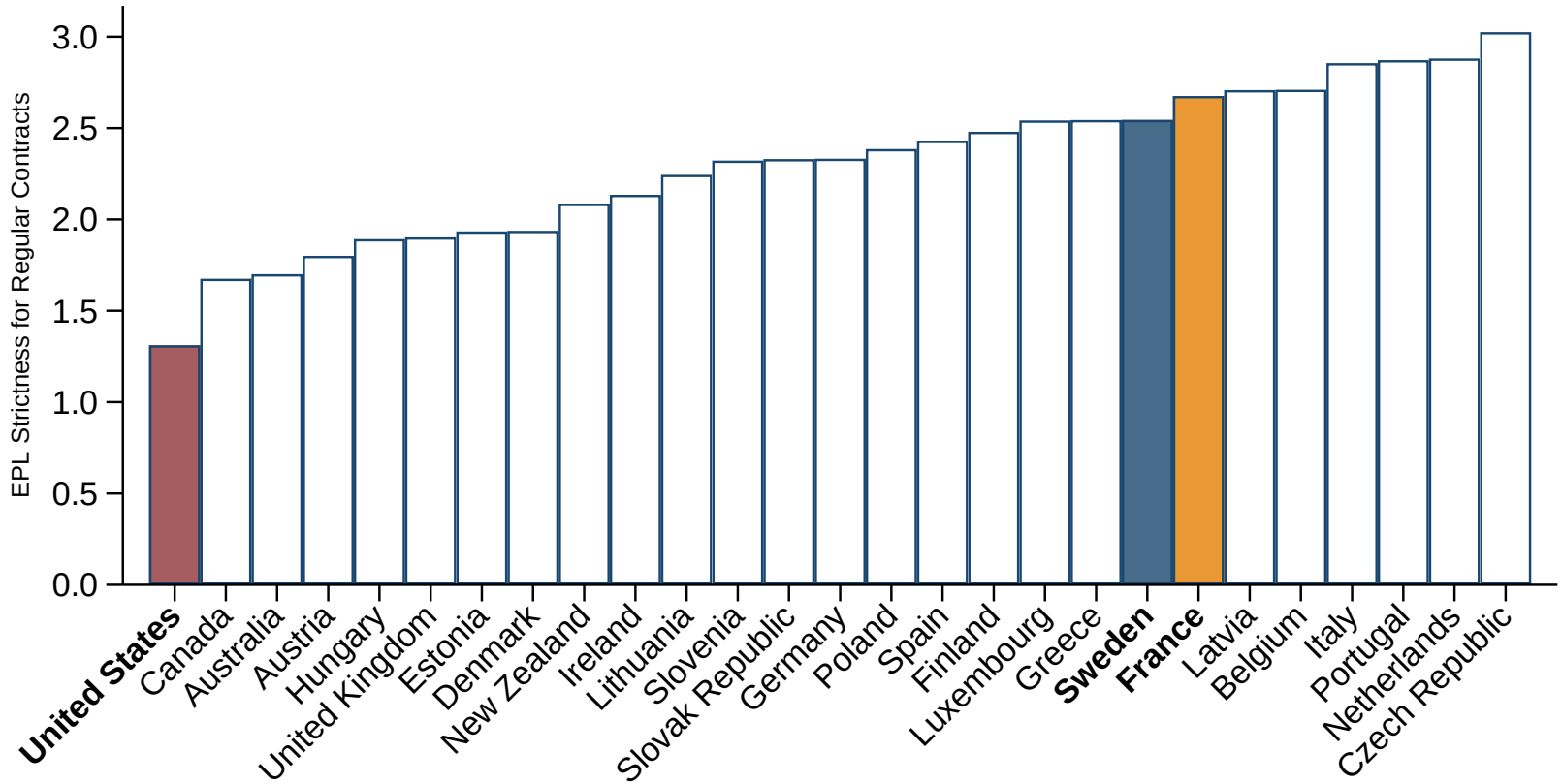
Variation+data permit comprehensive analysis:

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

Findings:

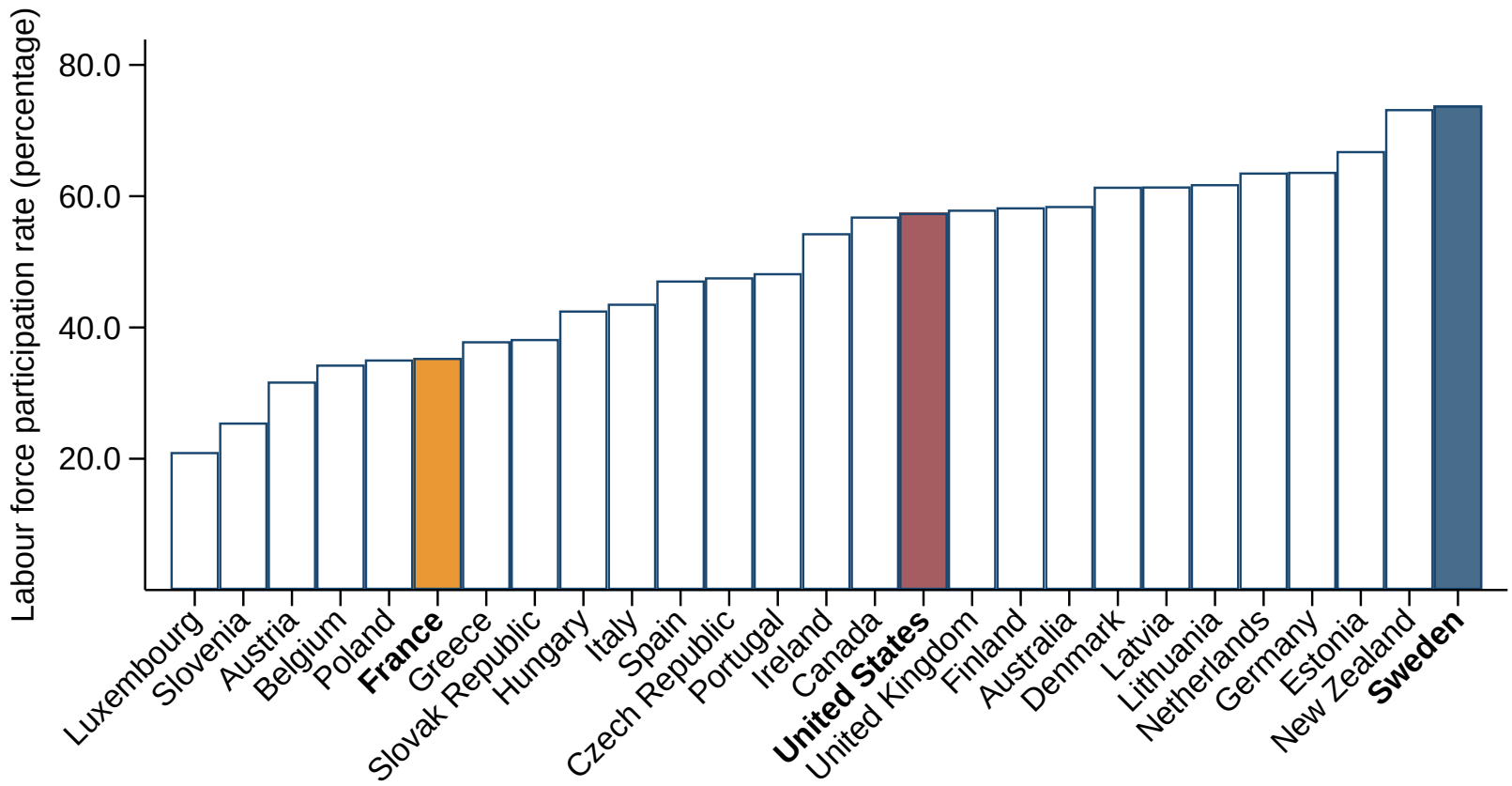
- Clear—but perhaps moderate—effects of extremely strong EPL
  Upper bound? (sample of older workers, strong EPL)
- Quantity effects only (sep's, emp, hours)—no wage adjustment
- Involuntary retirement/hours reductions (Lazear 1979!)
- Compliers: high tenured, large firms, recently sick, **public sector**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

Setting: Strong EPL (OECD Index)



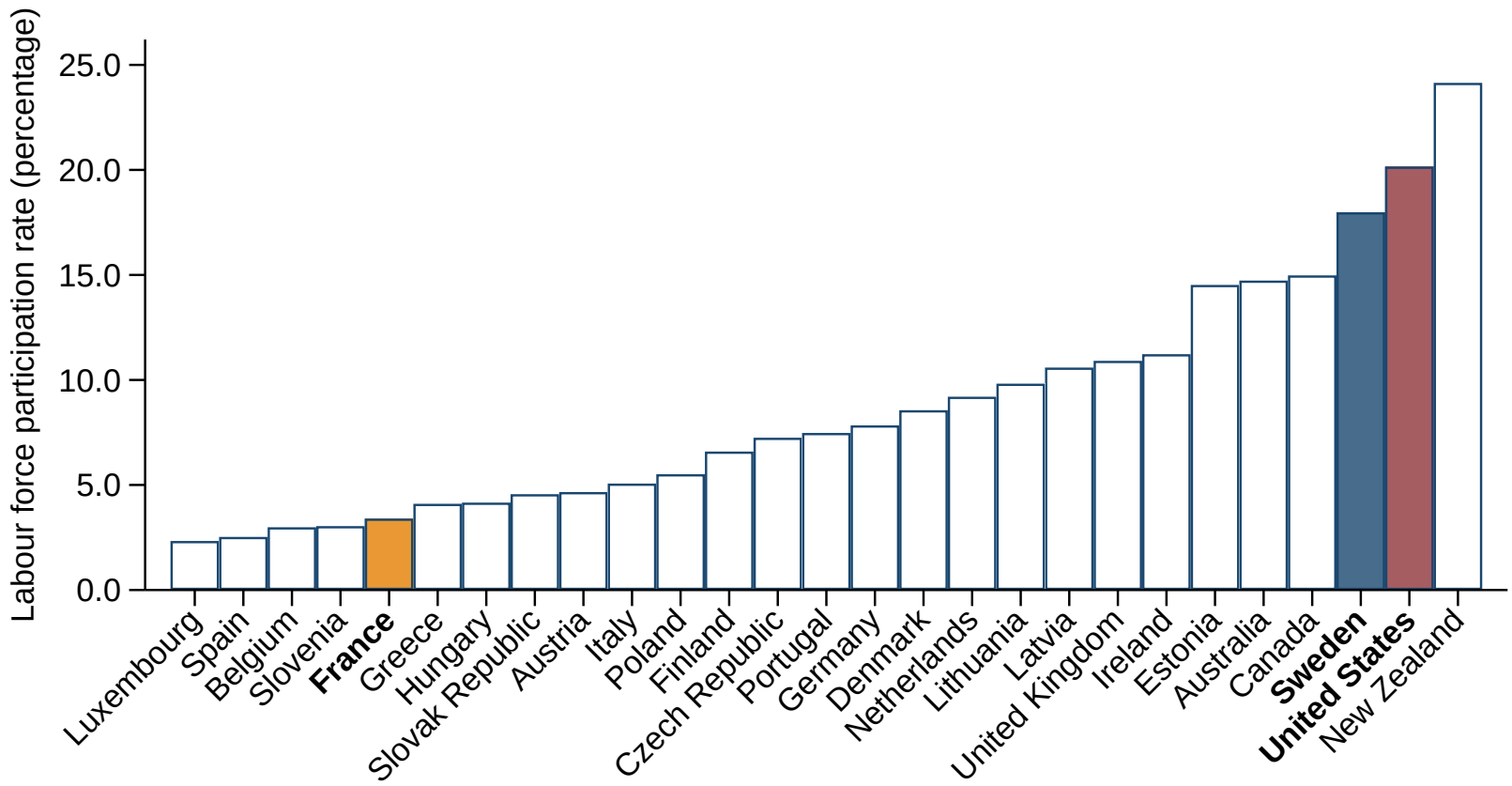
OECD 2019; Anglo-Am/EU comparison

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

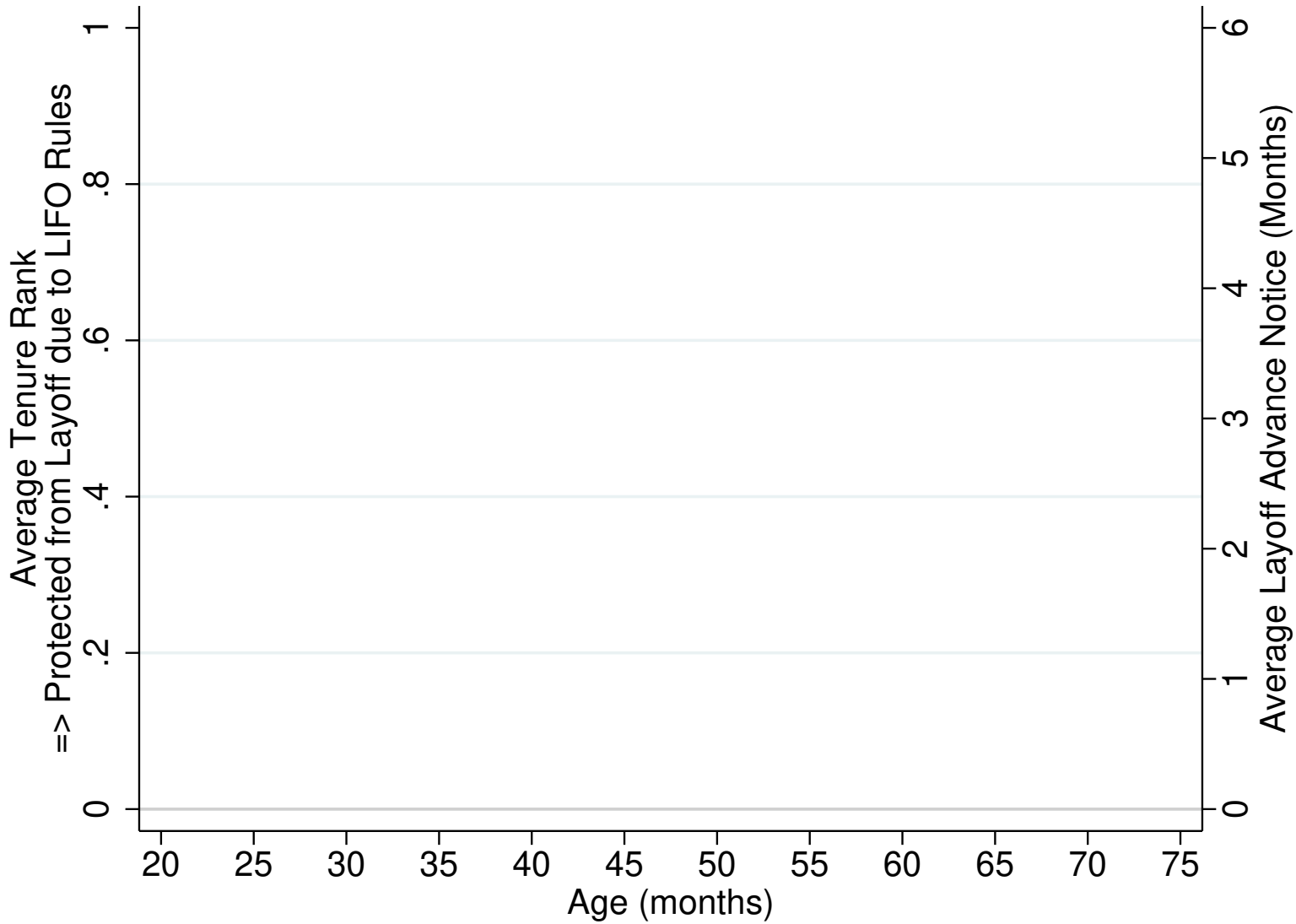
As ~everywhere, Swedish EPL gradually increases w/ tenure (hence age):

- 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)

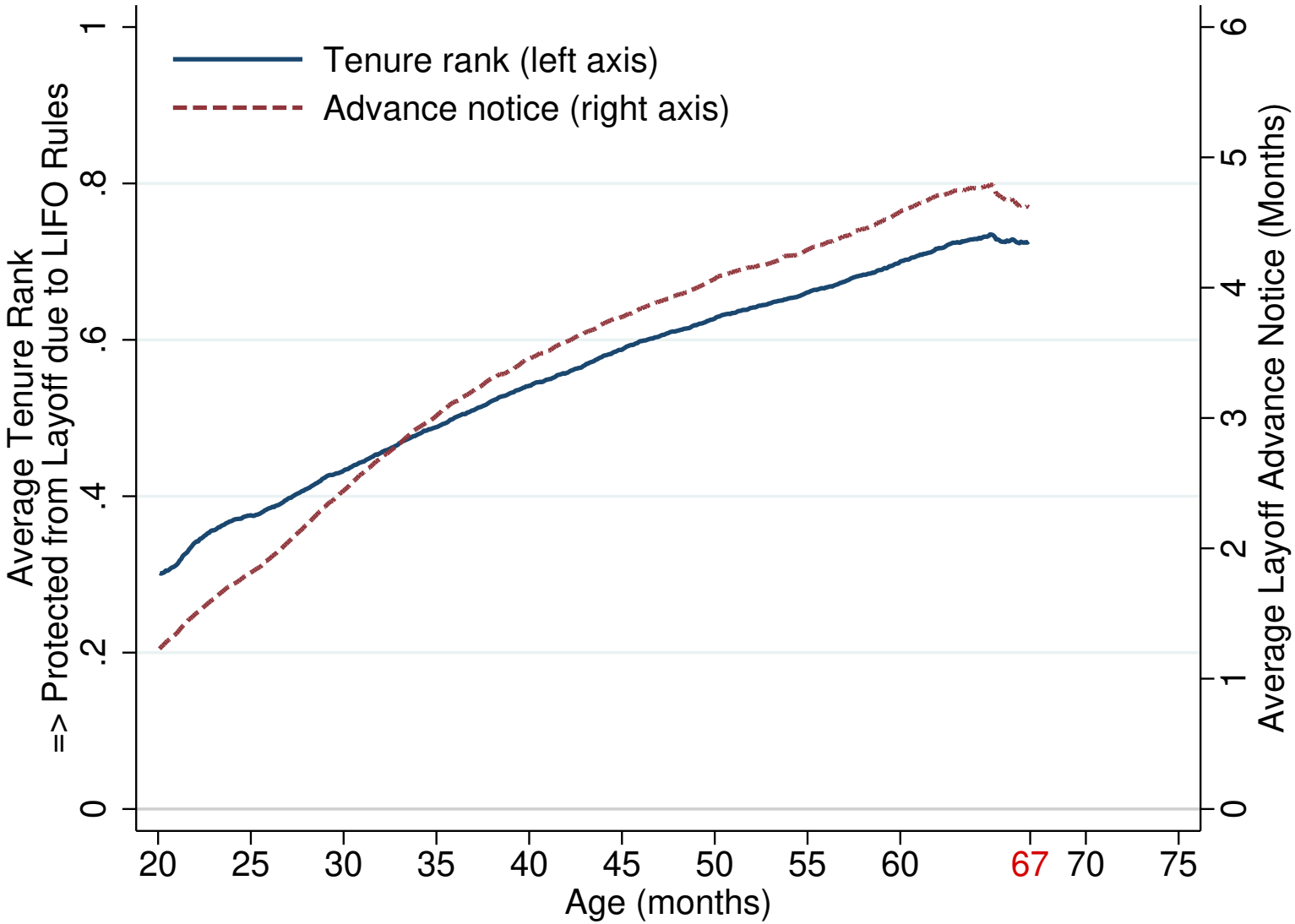
- LIFO (last in, first out) within job type
  - Applies in case of redundancies
  - Age breaks tenure ties

Setting: Strong EPL Among Older Workers



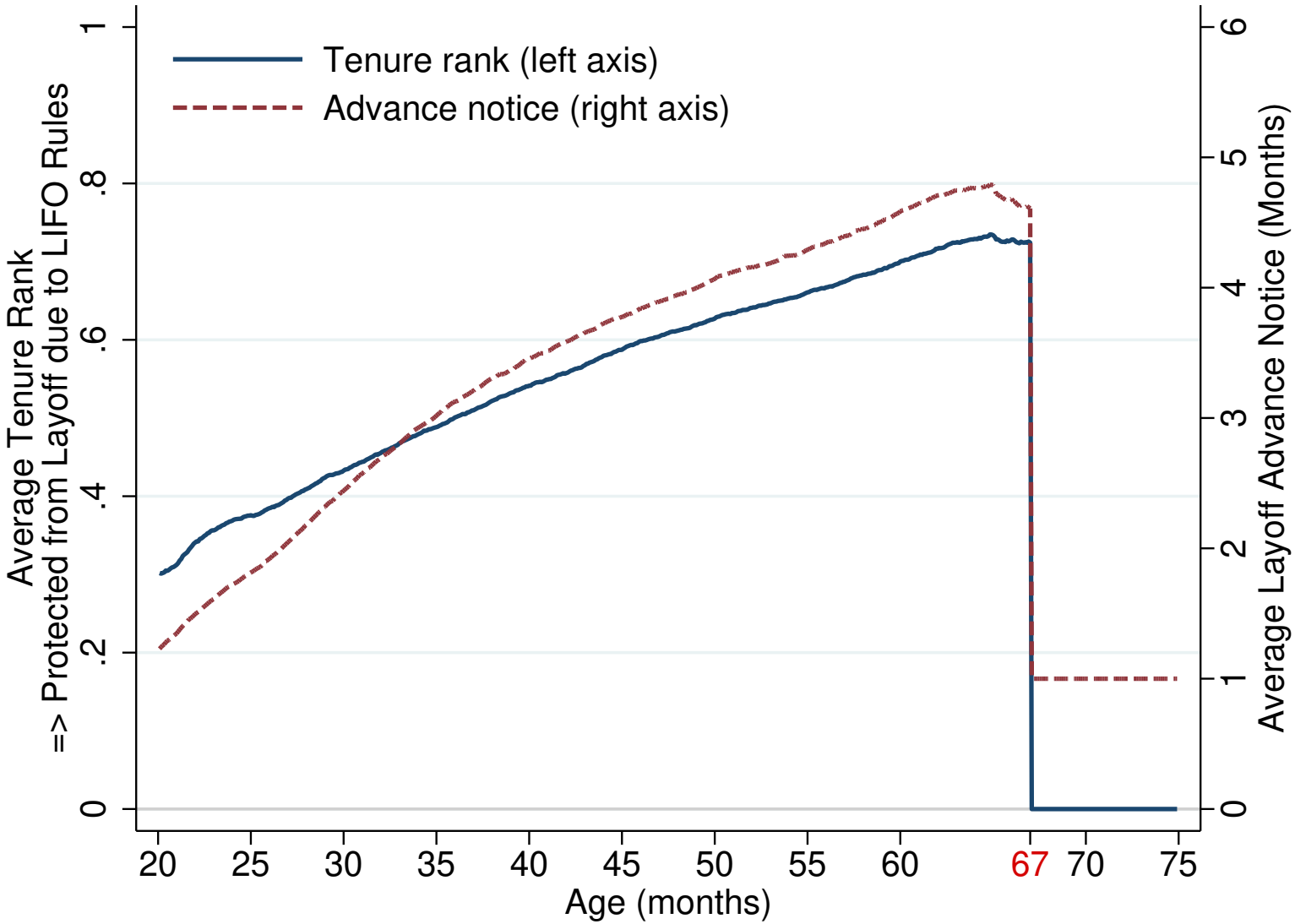
Plus additional CBA-based advance notice rules that are age-based (up to 12 months).
Age also breaks tenure ranks in LIFO.

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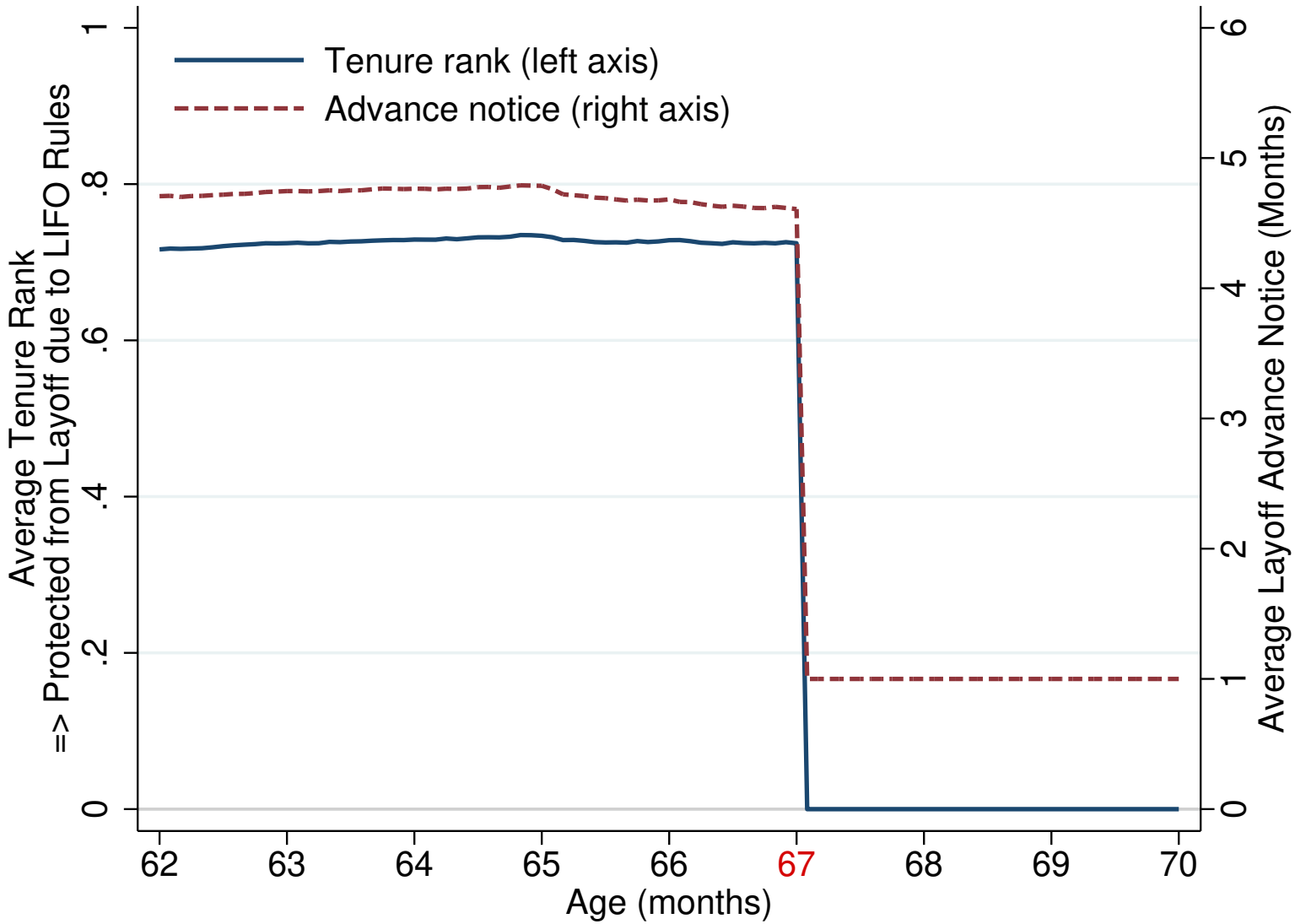
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Research Design: Elimination of EPL at Age 67



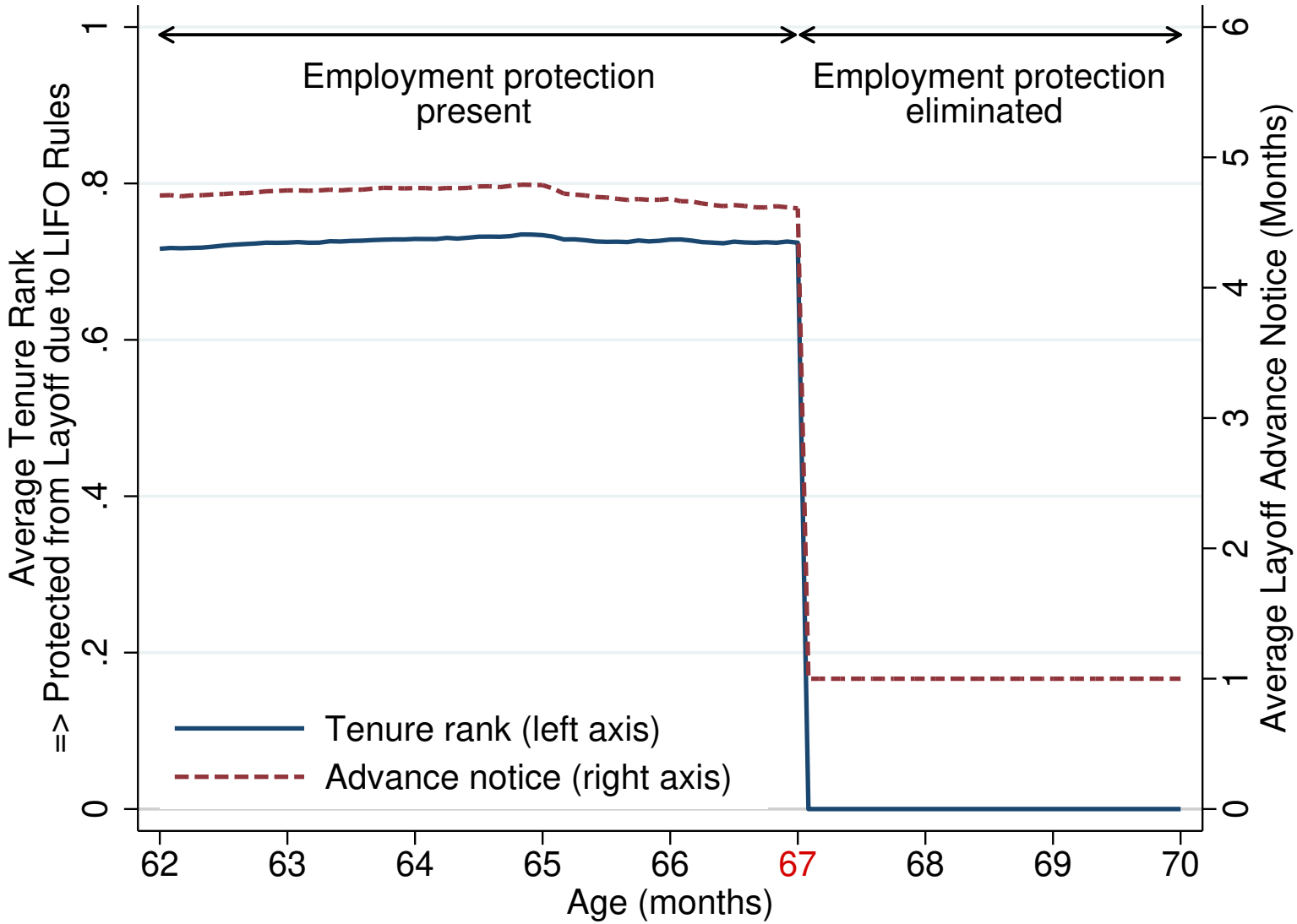
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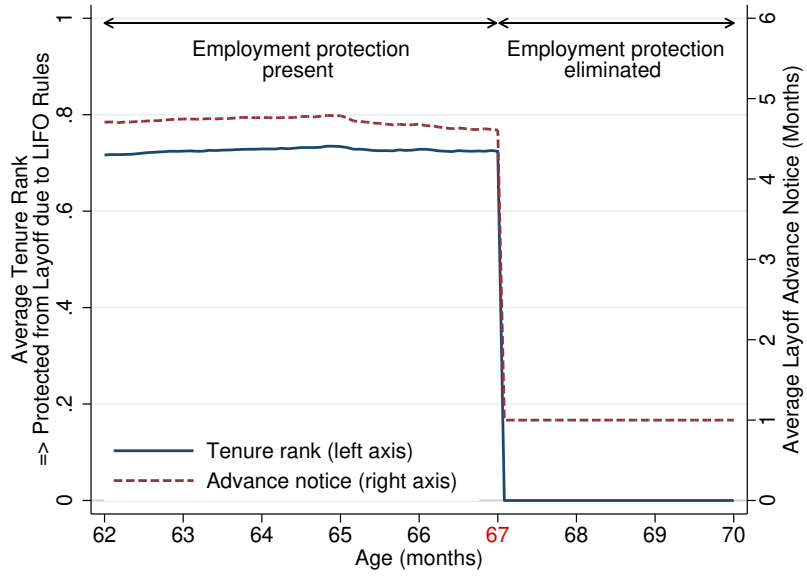
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Research Design: Elimination of EPL at Age 67



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
- ...

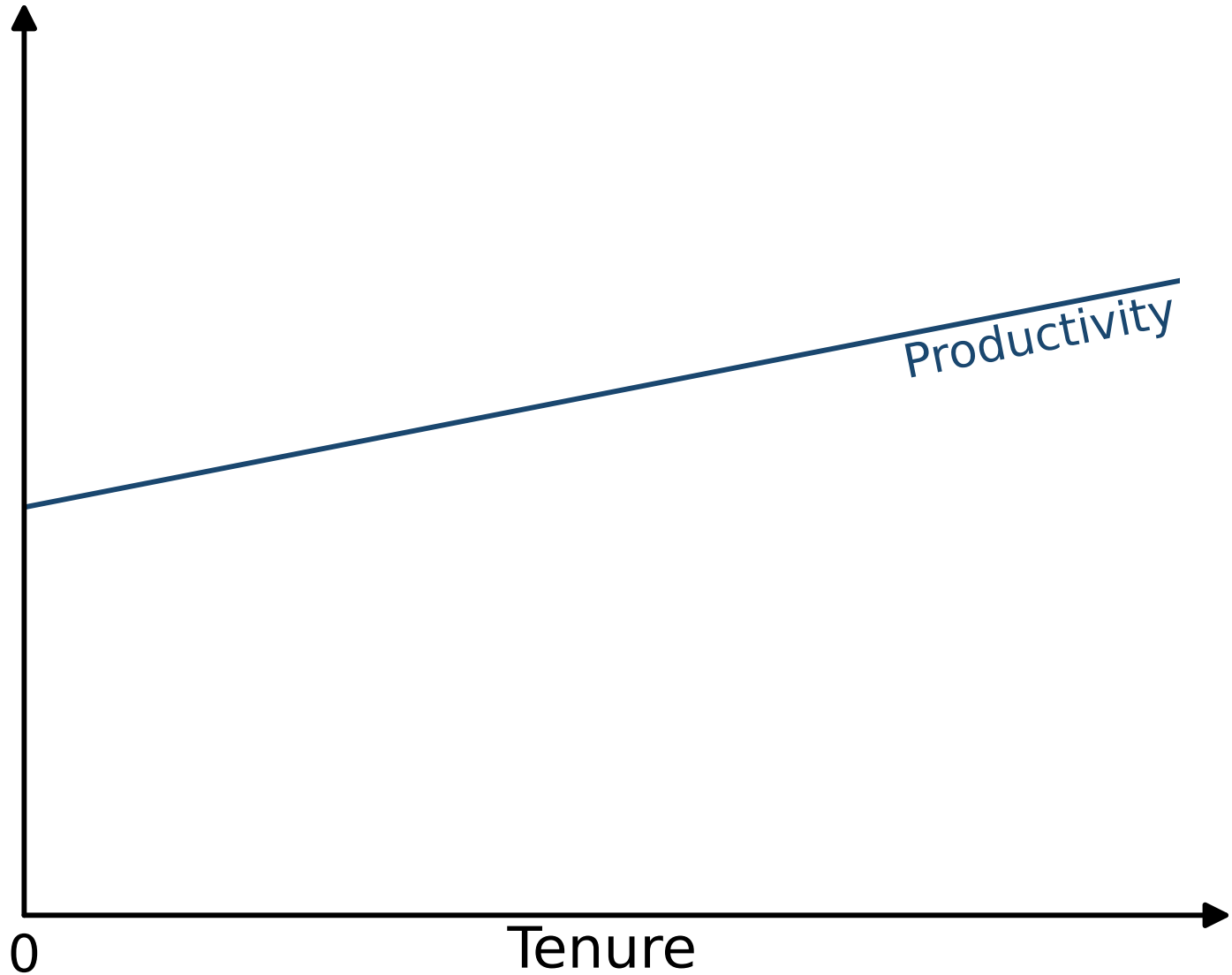
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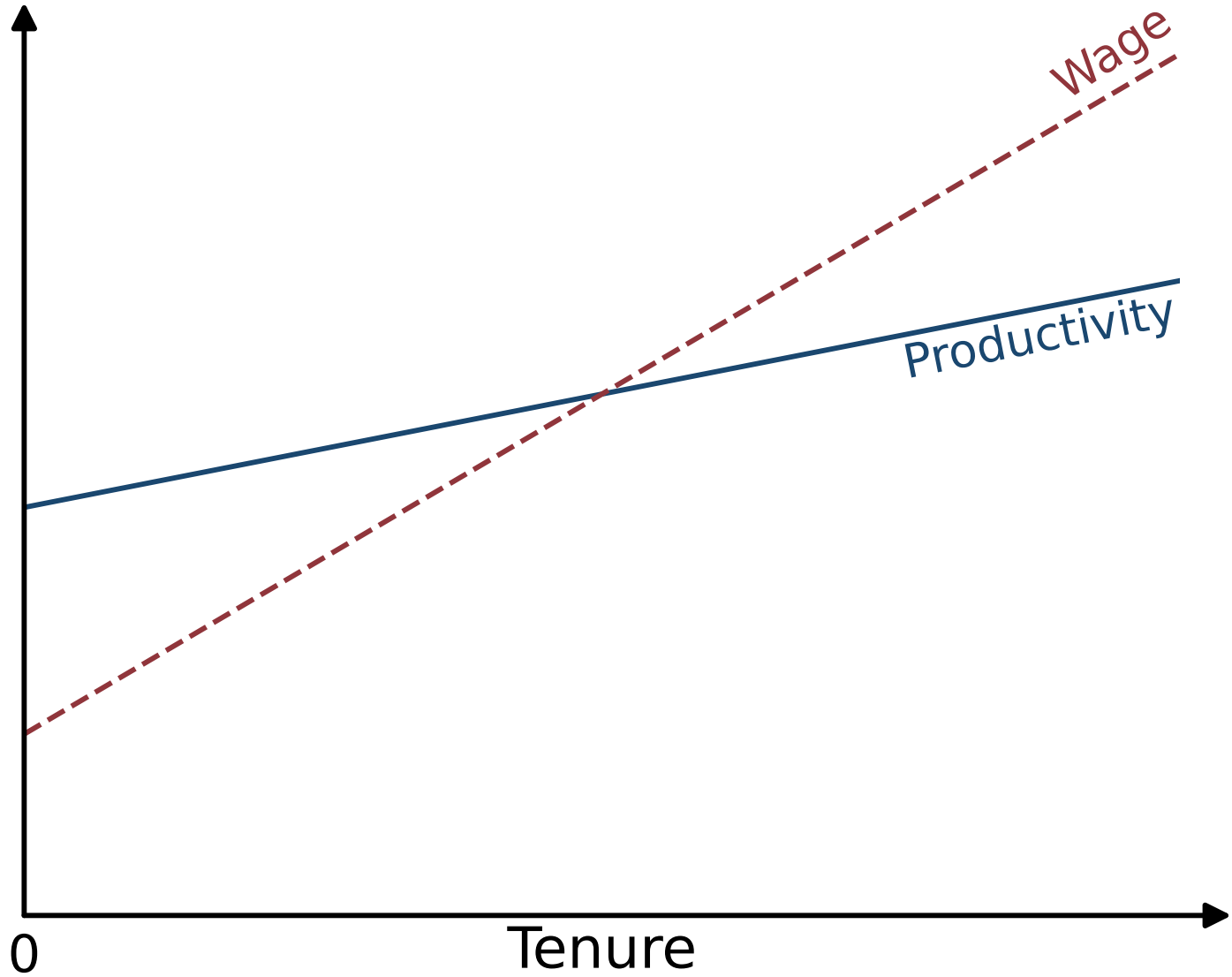
Example: Lazear (1979)-Type Setting

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



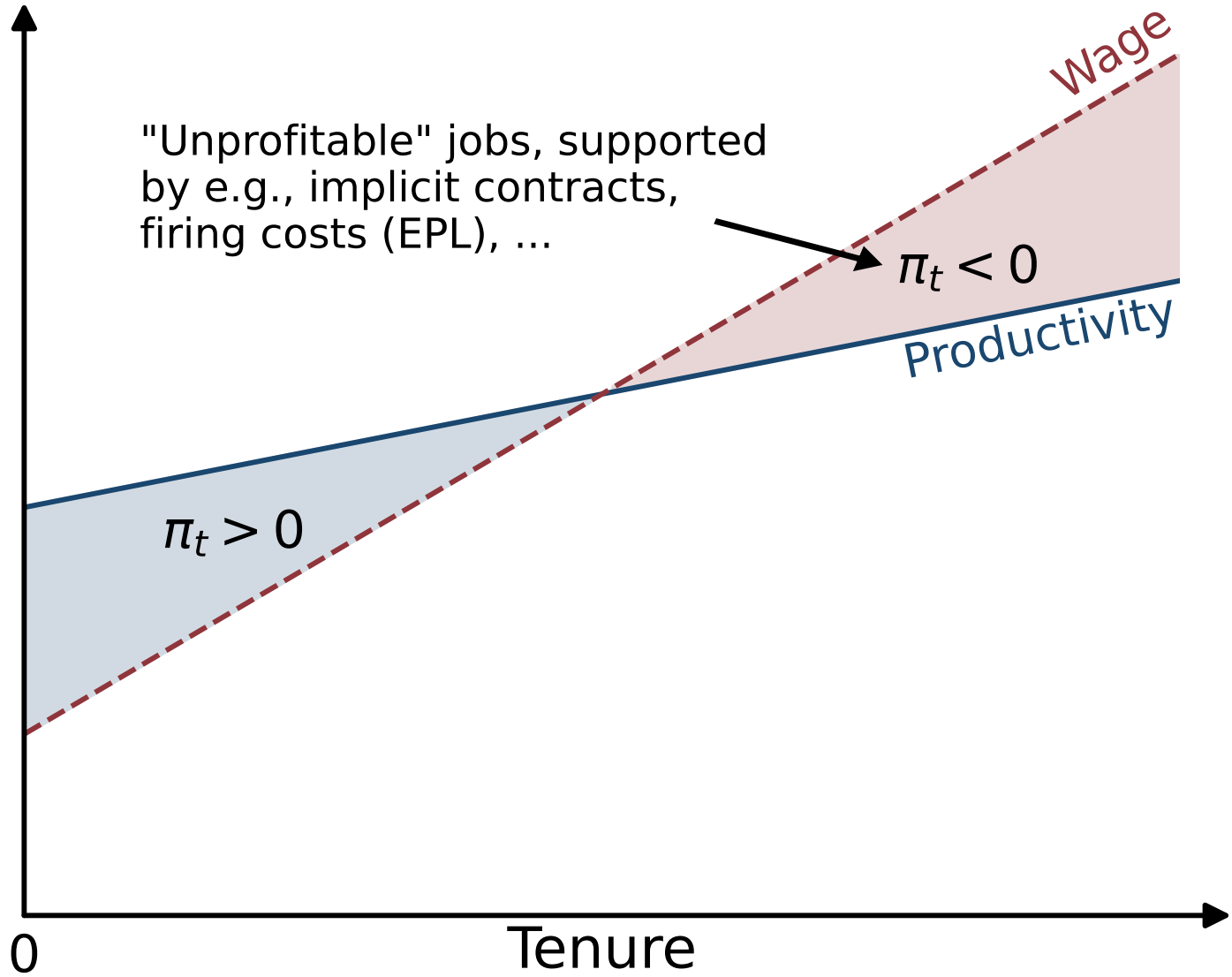
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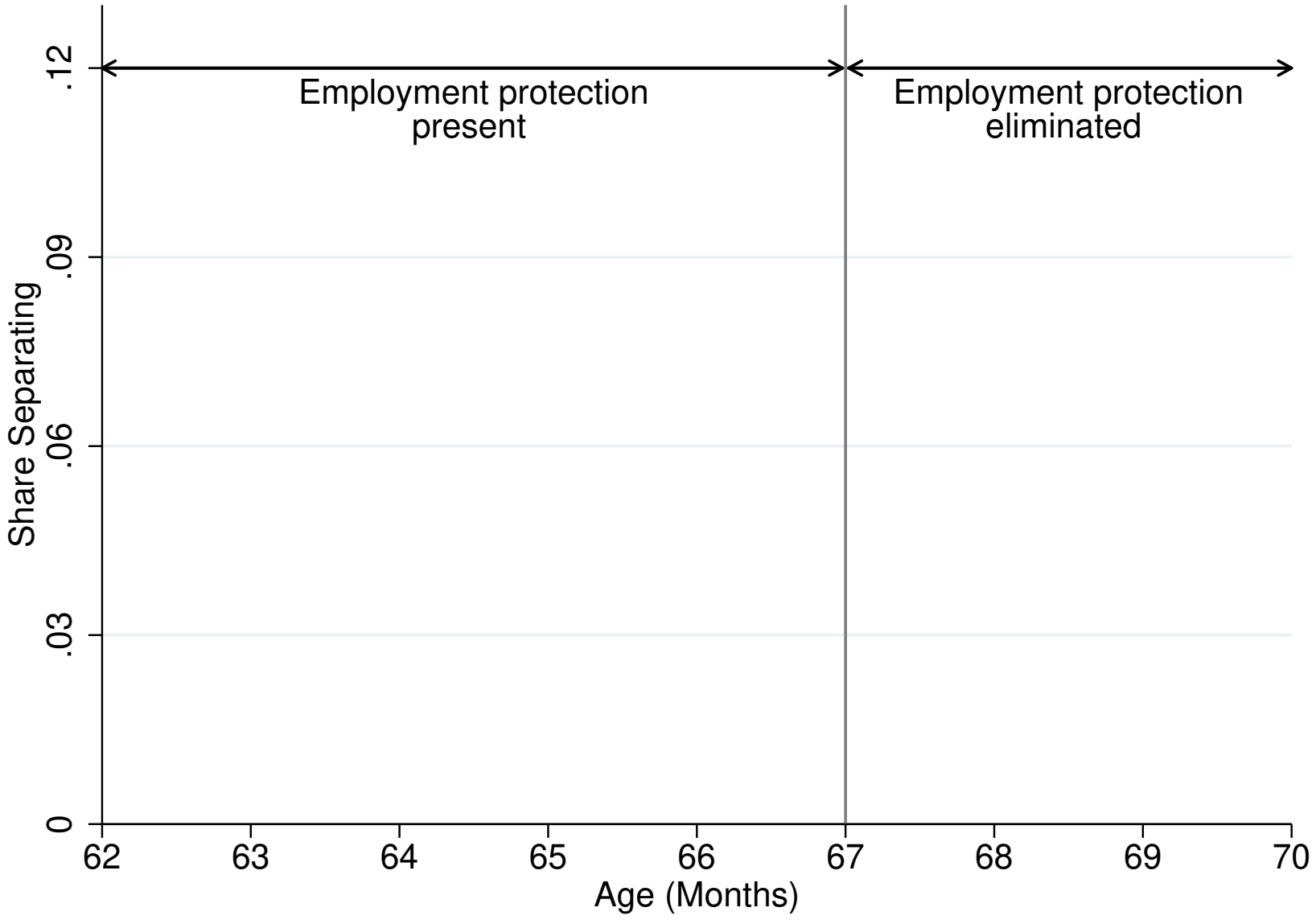
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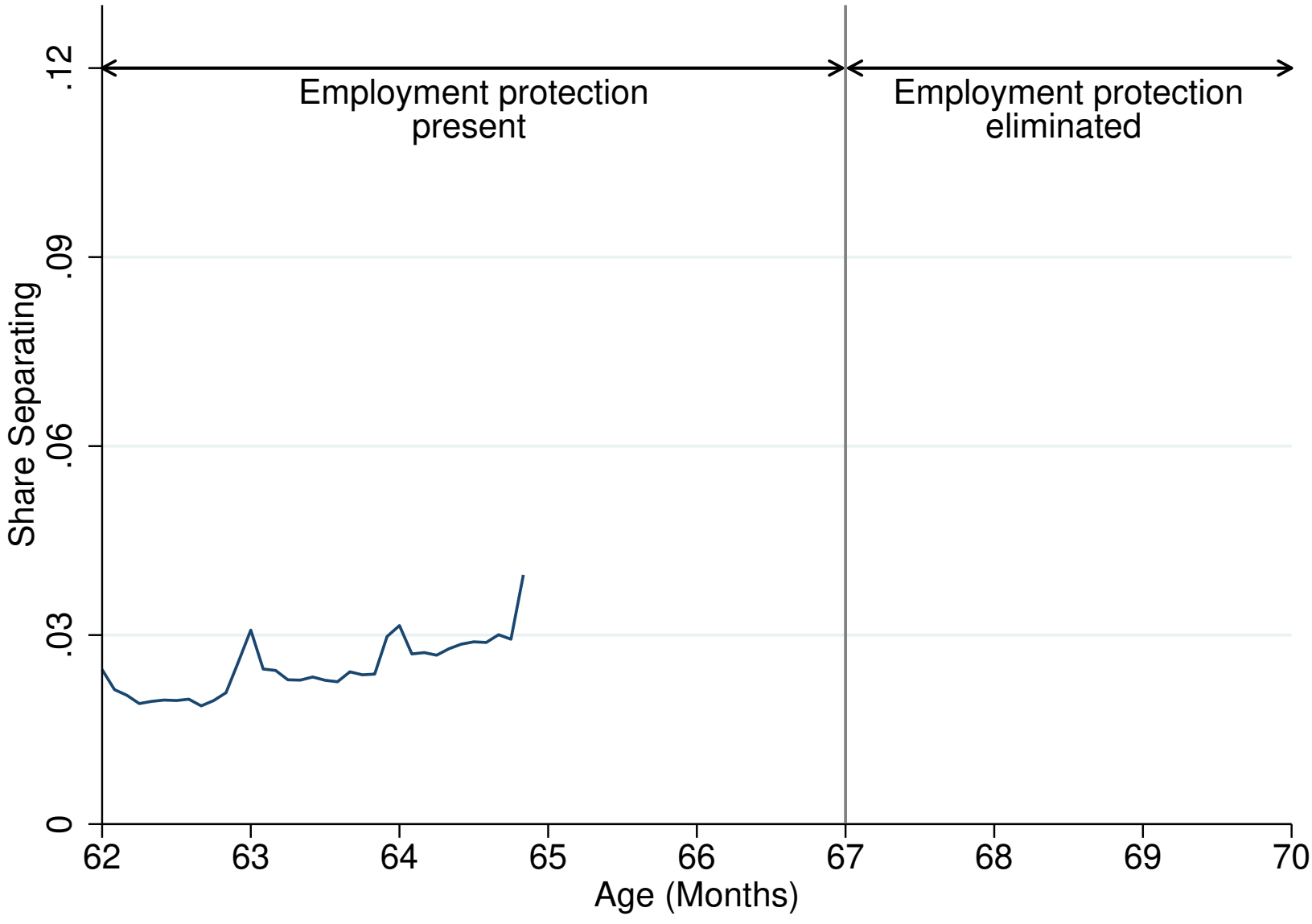
Empirical Roadmap

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

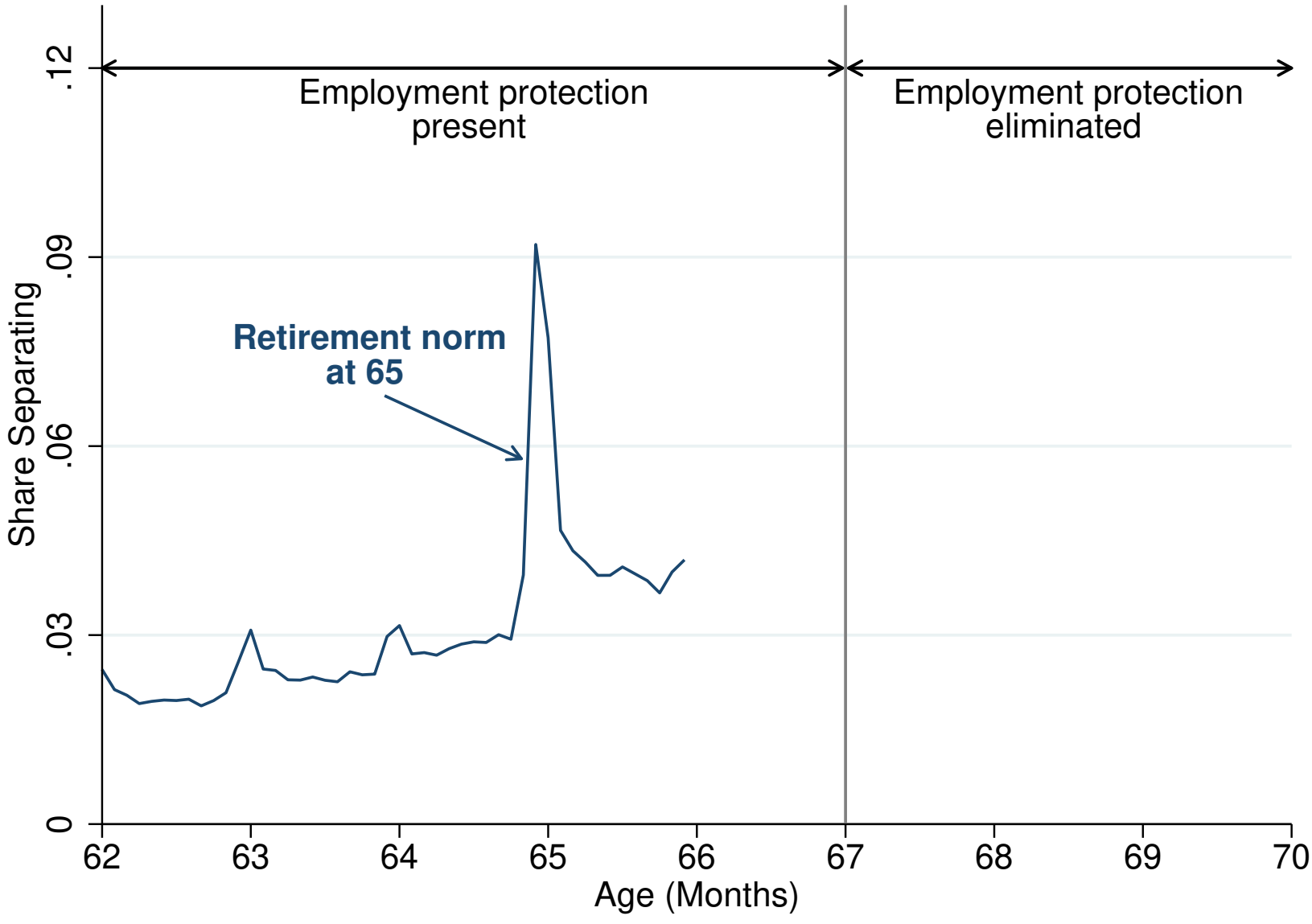
Spike of Job Separations at EPL Phase-Out Age 67



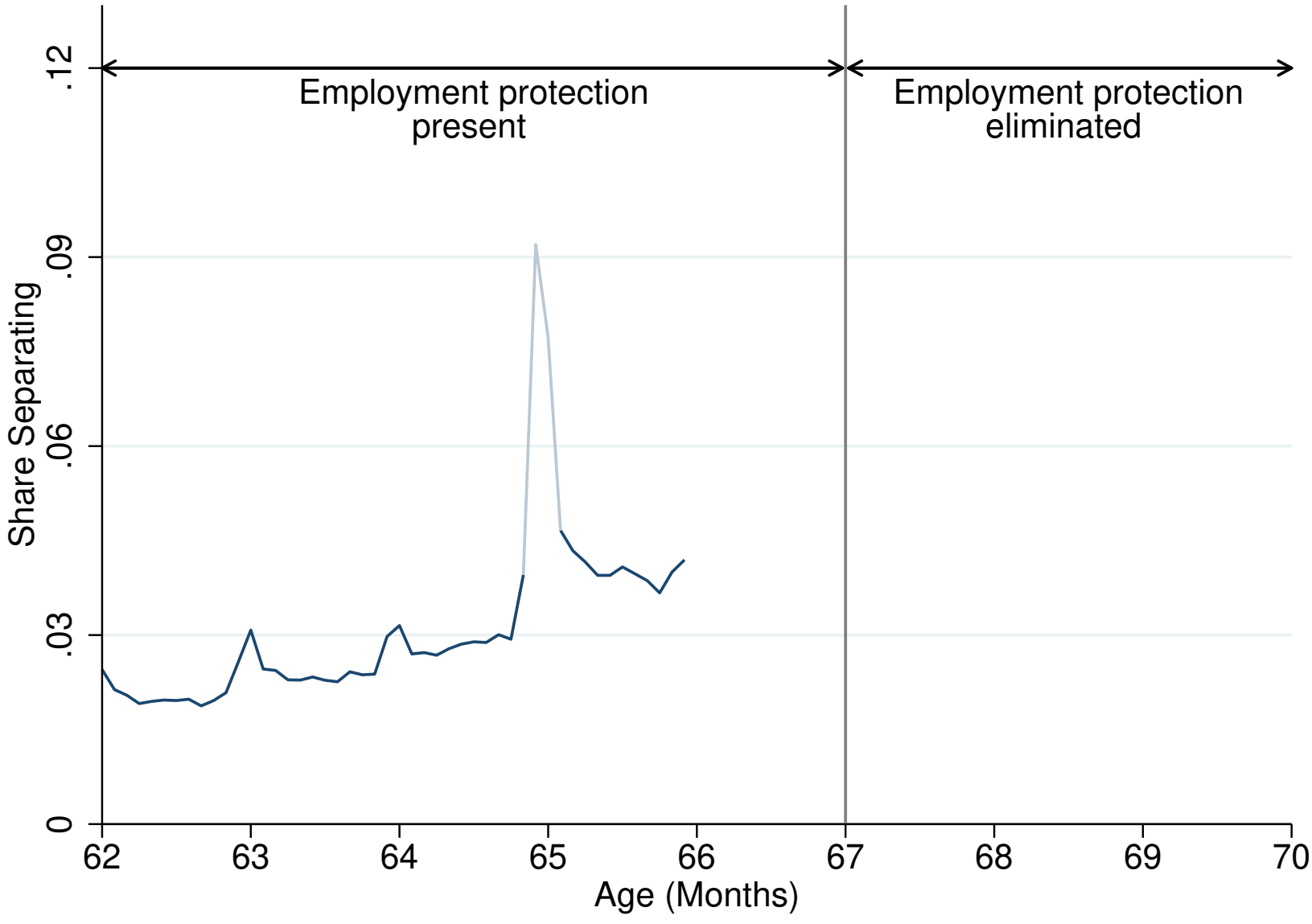
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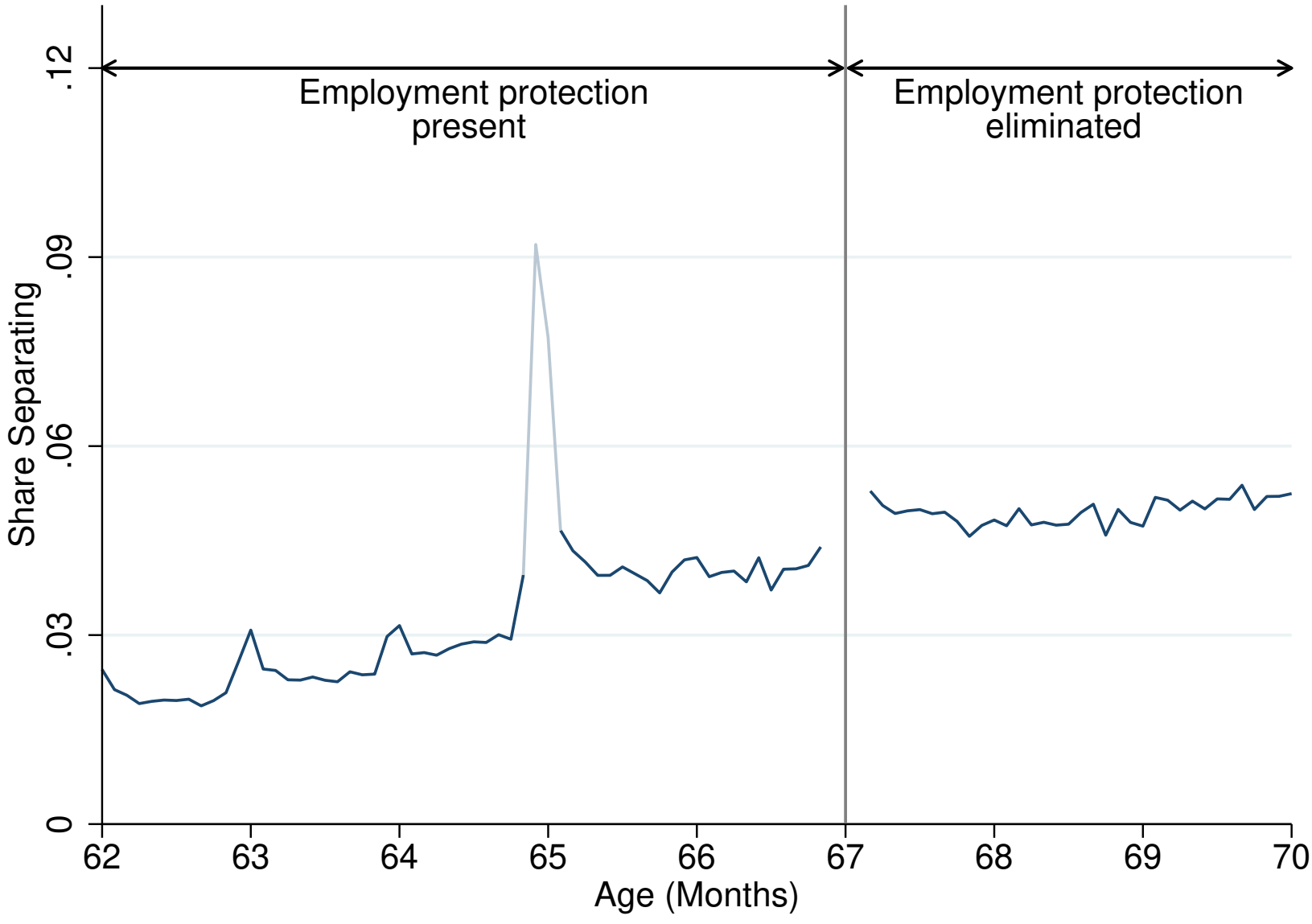
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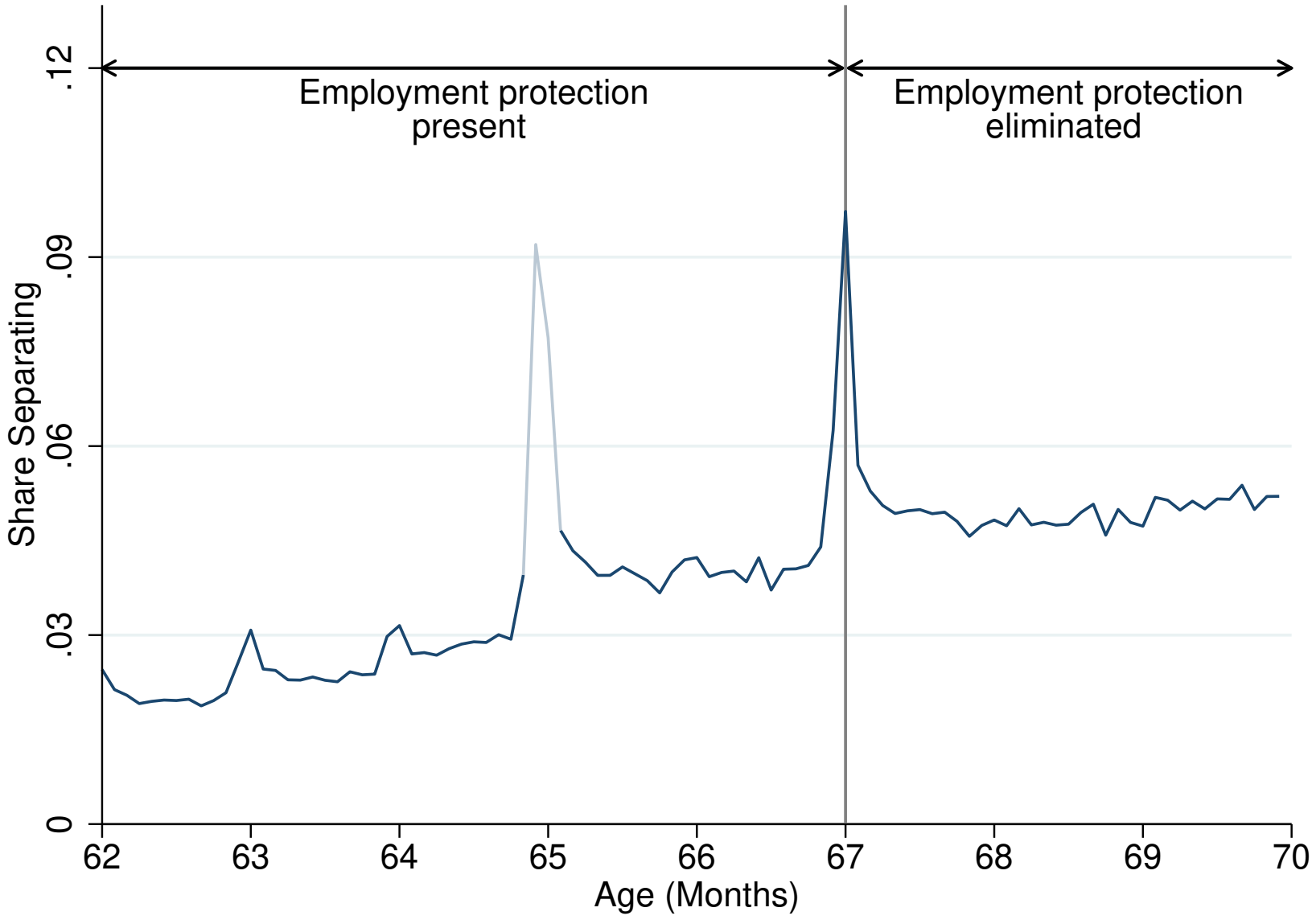
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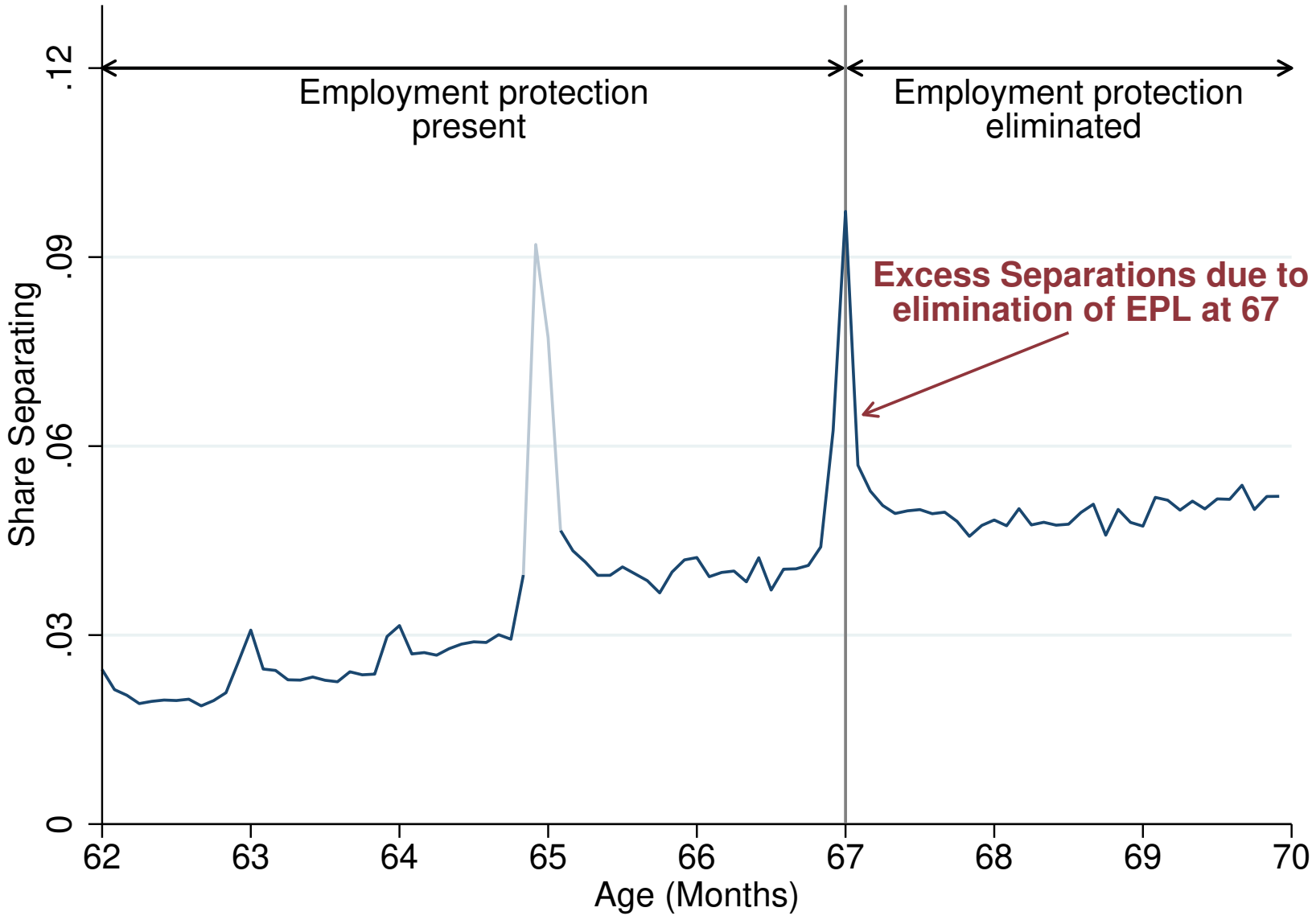
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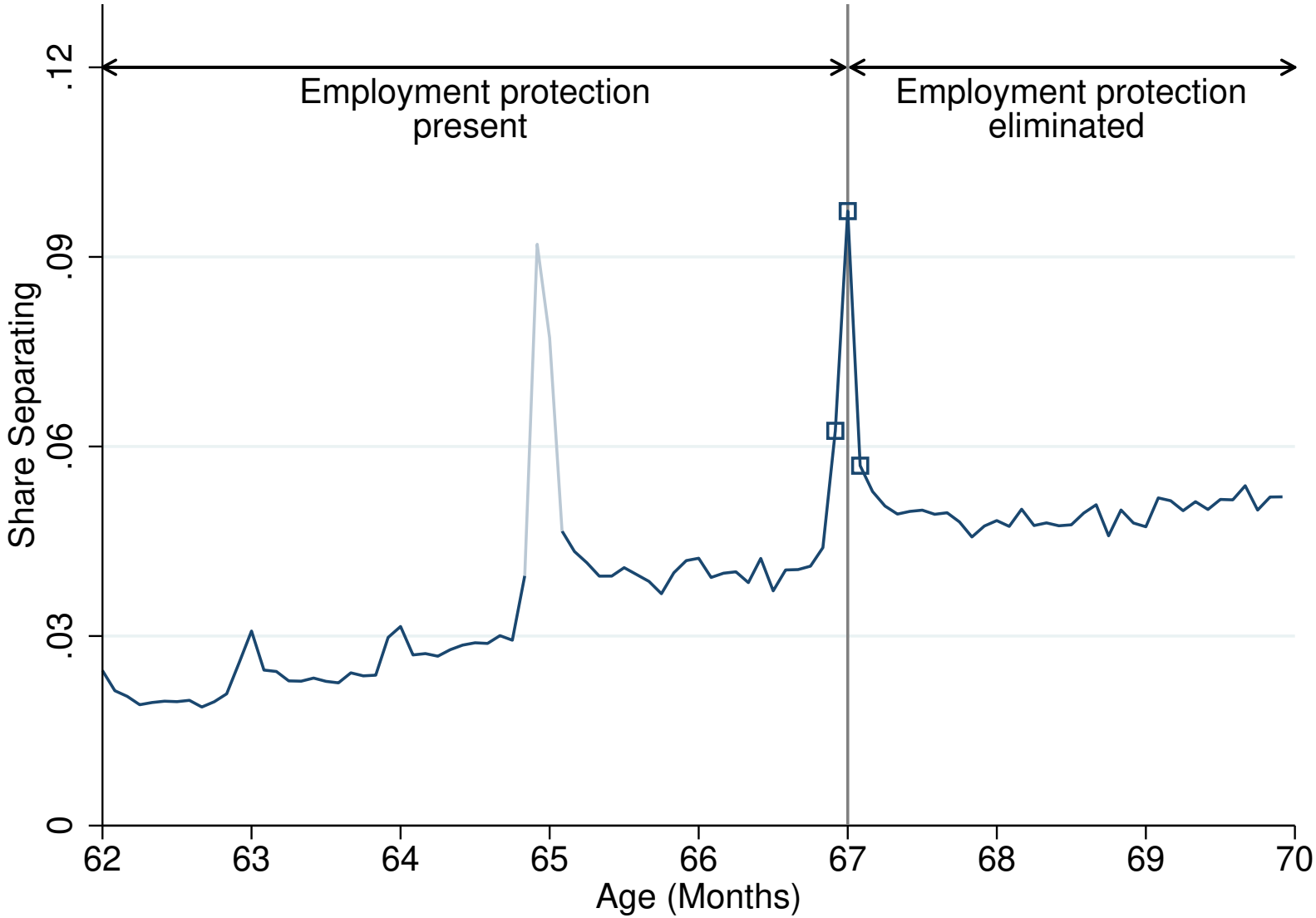
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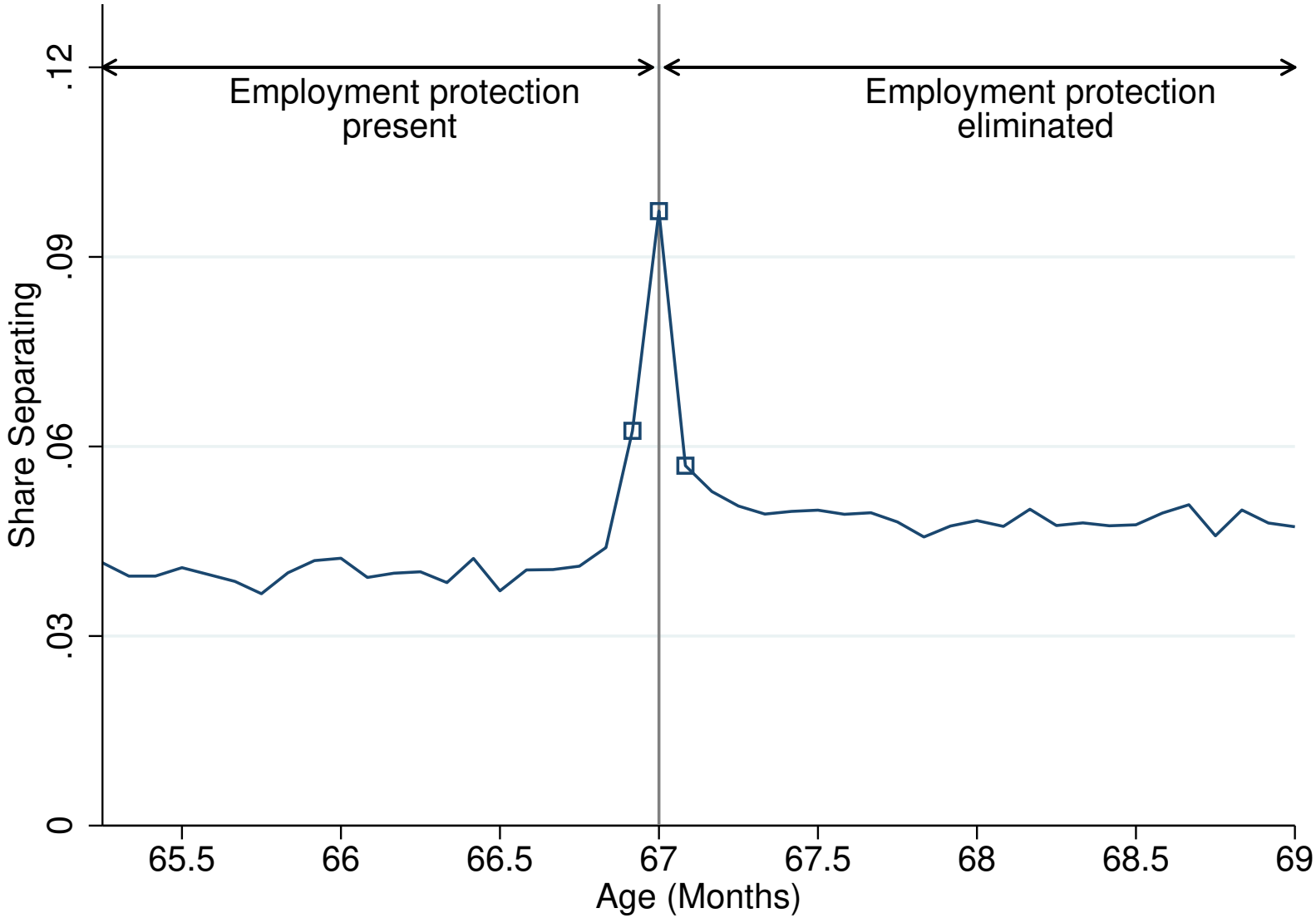


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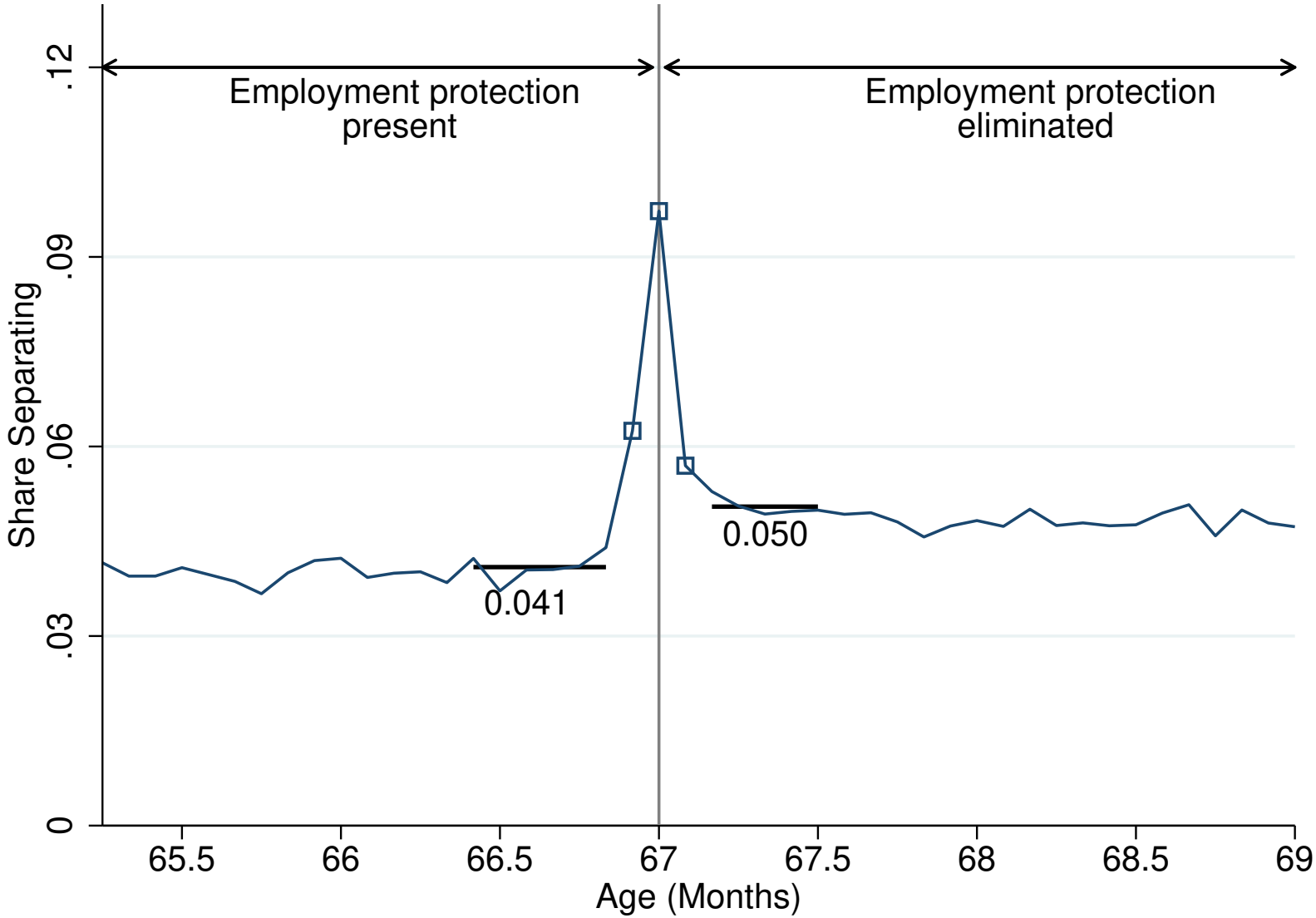
Basic Saez (2010) bunching method. Similar results w/ polynomial counterfactual (Chetty et al. 2014).

Quantifying the Effect: Bunching Analysis



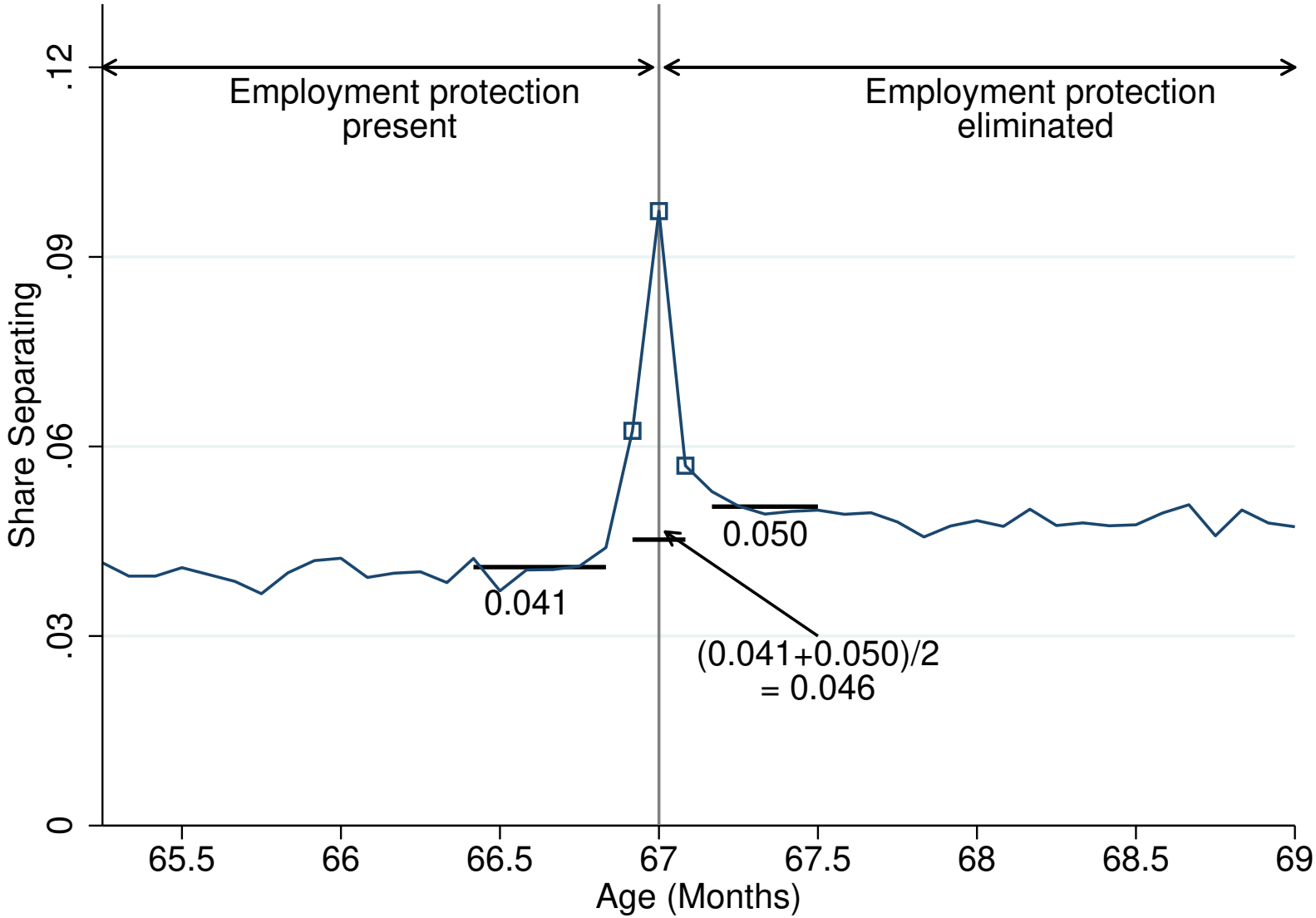
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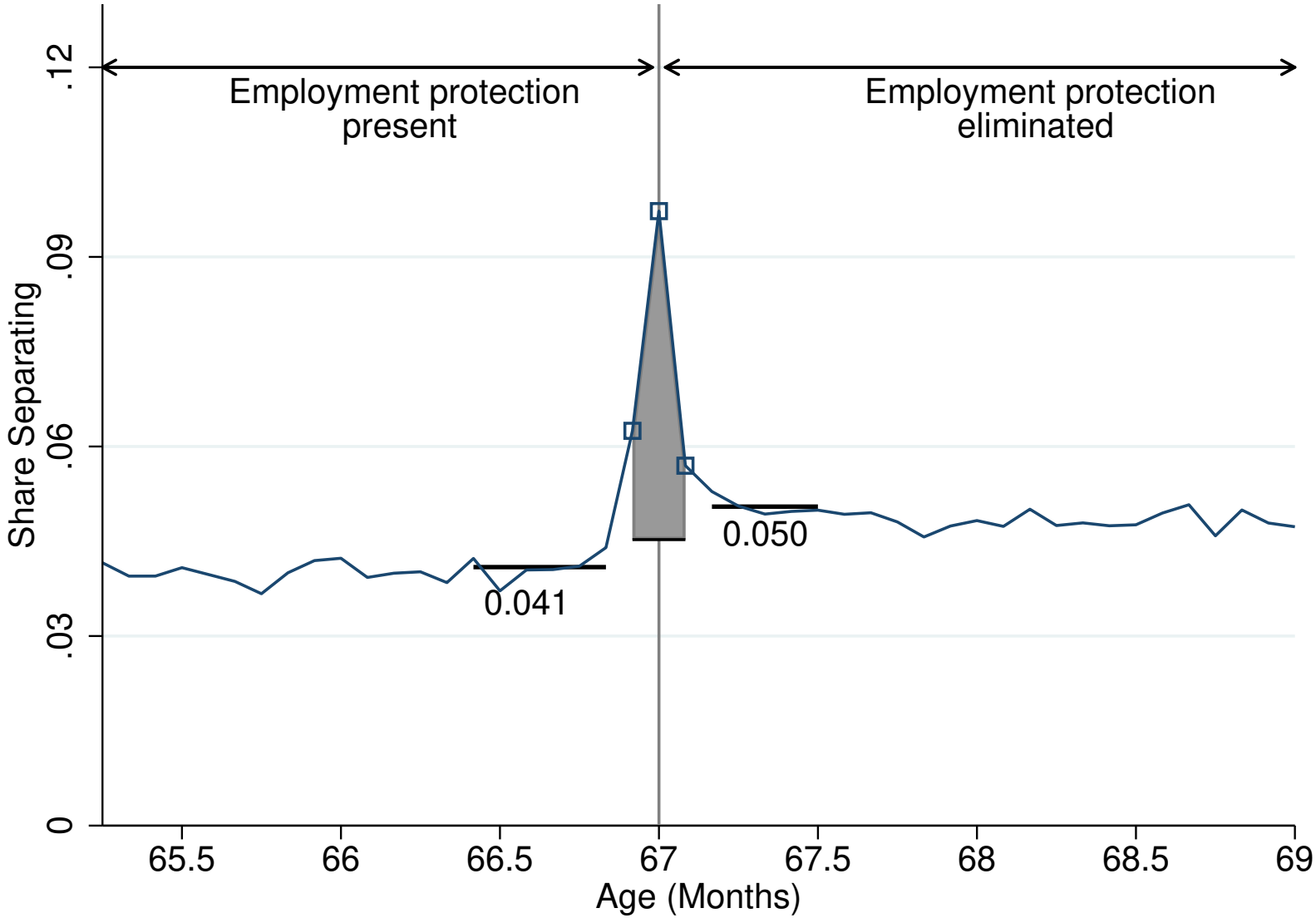
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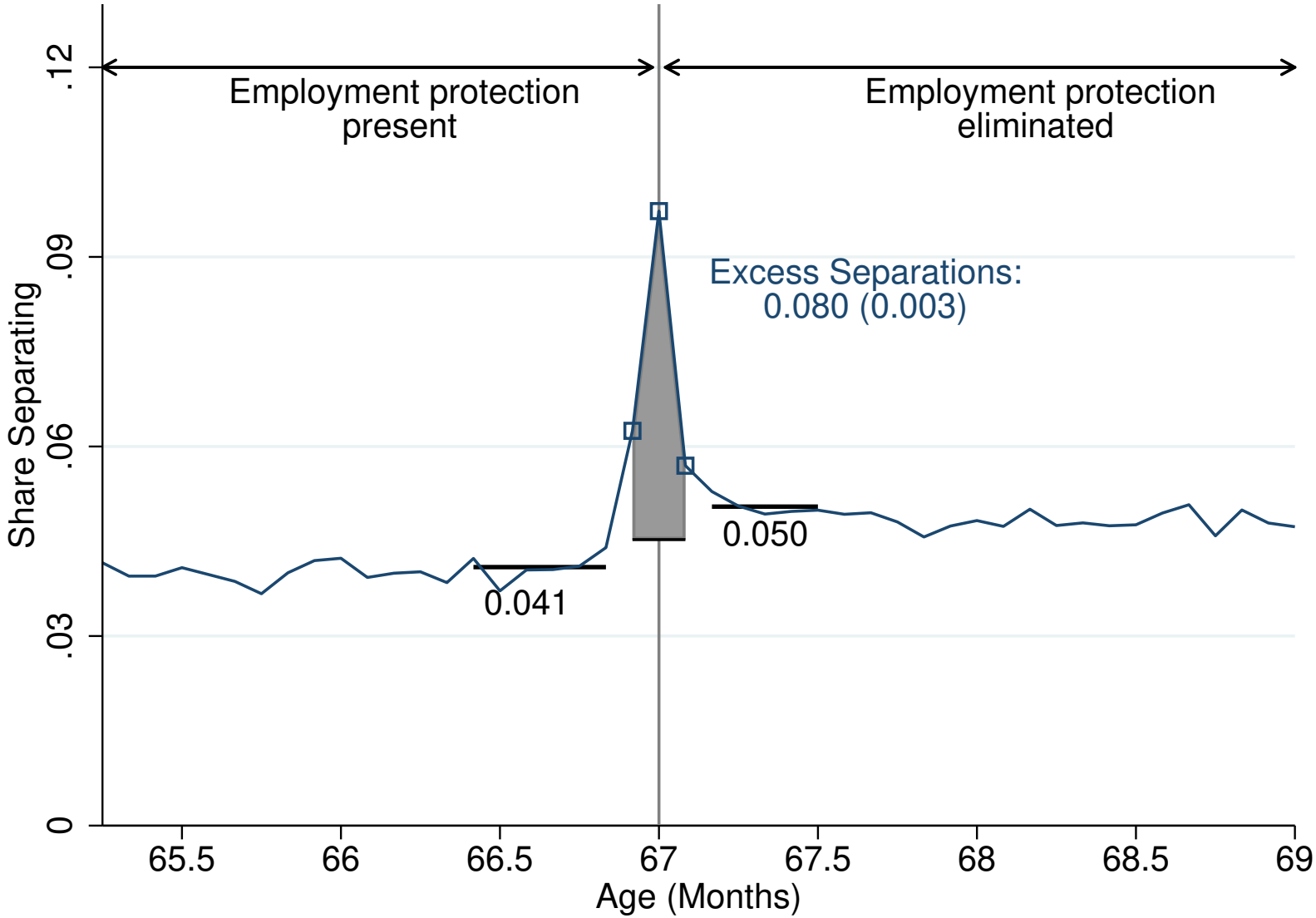
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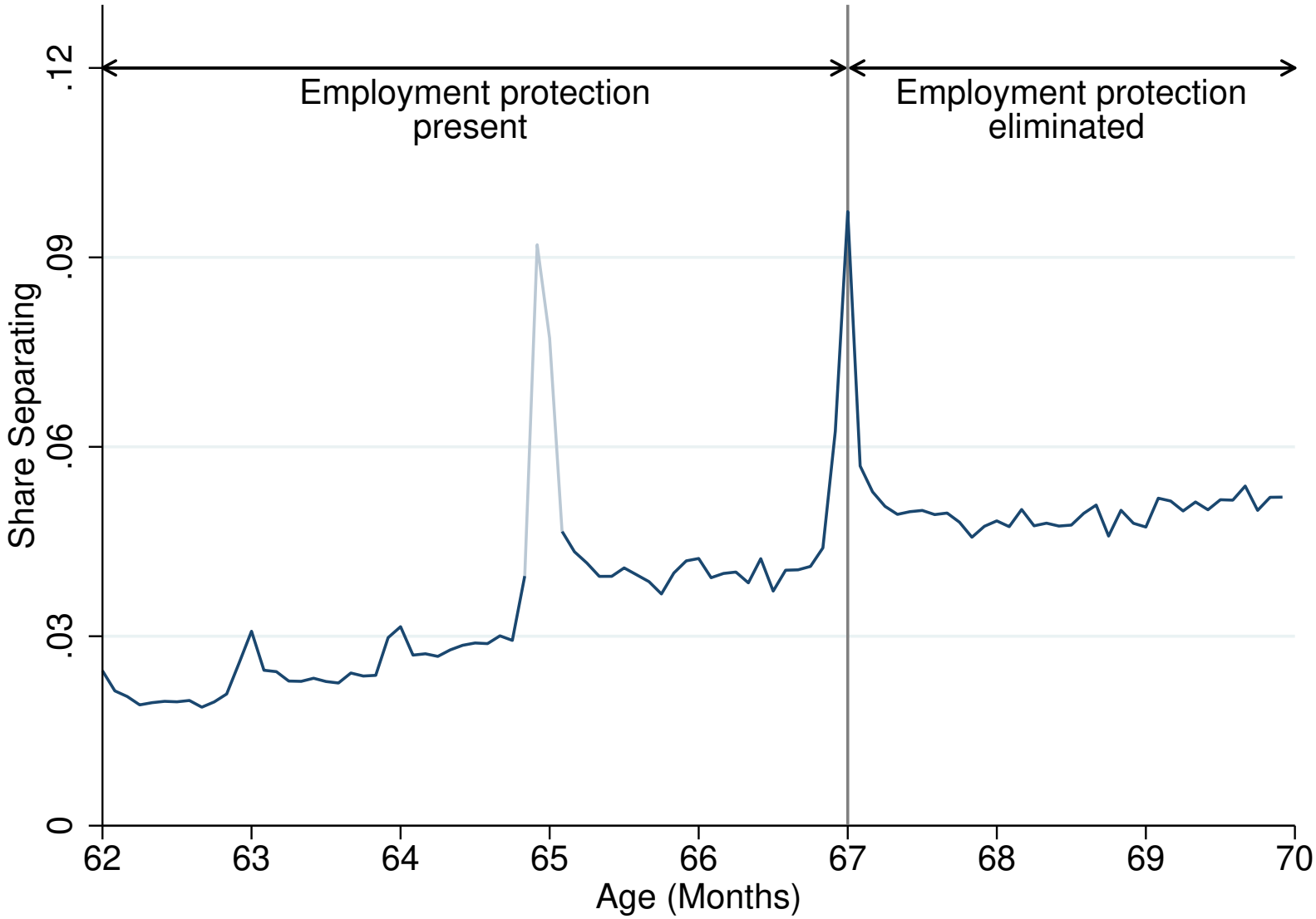
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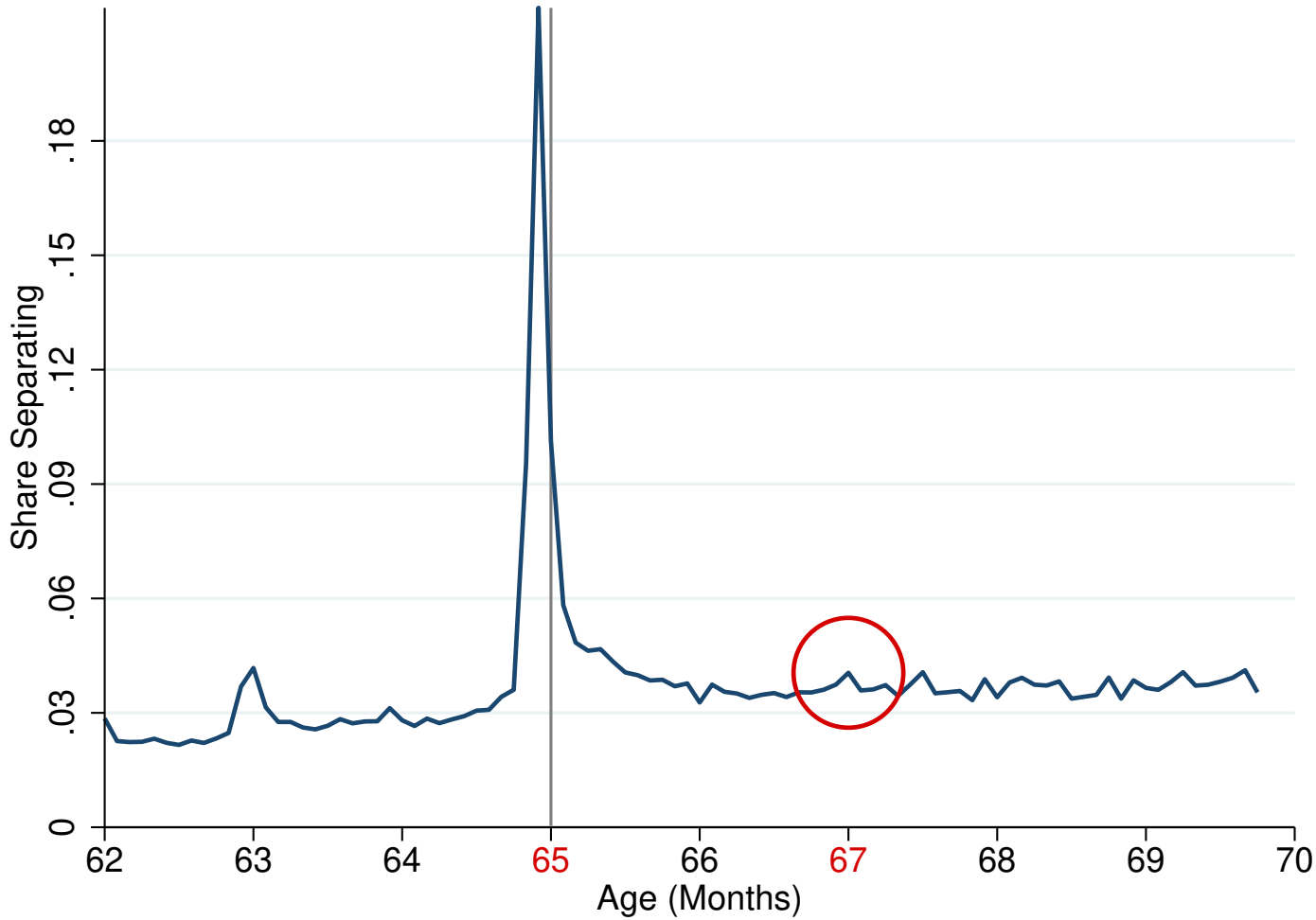
Validation of Effect: Causation by EPL?



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

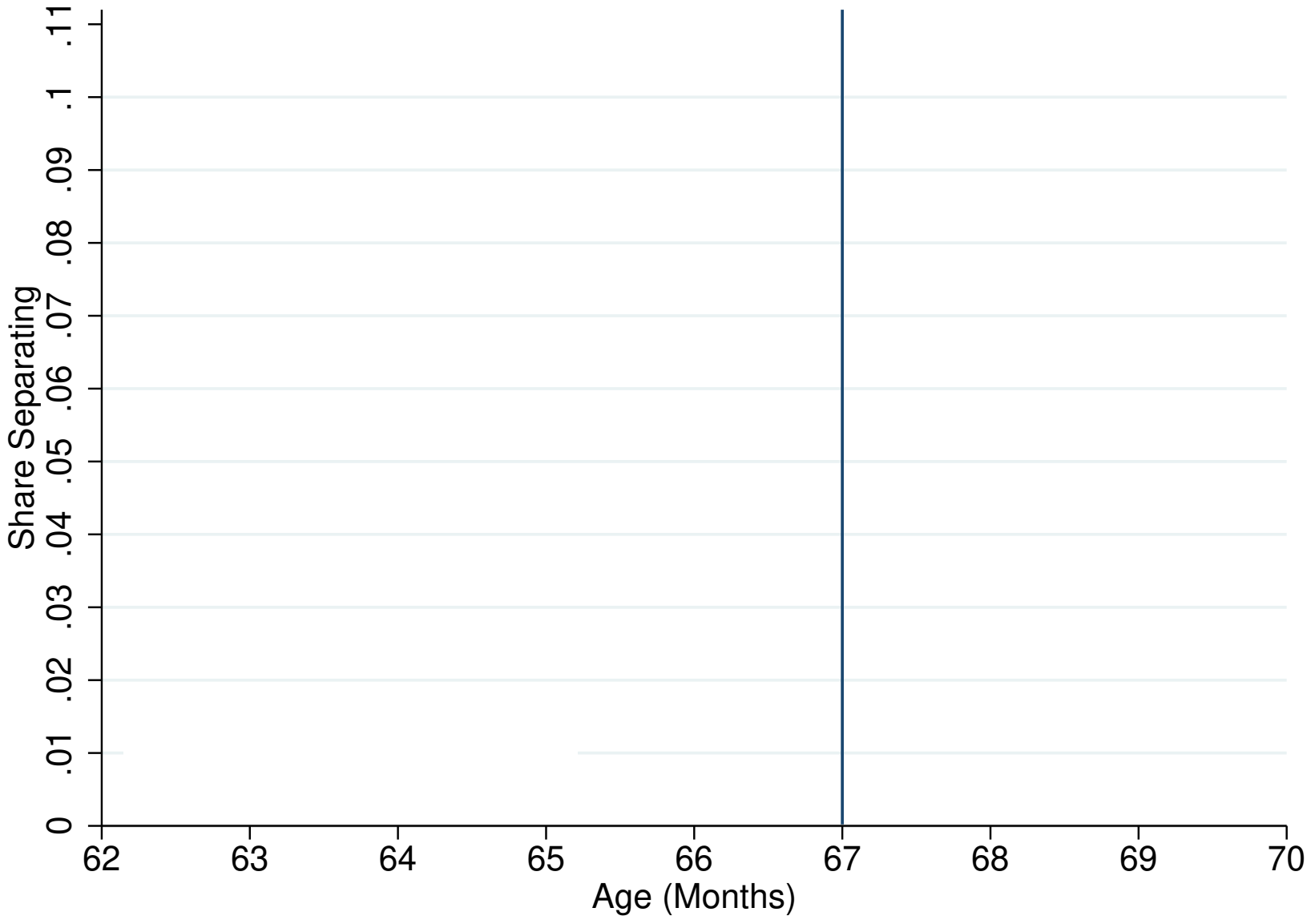
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Spike at 65 Larger: Confounding EPL with Retirement at 65

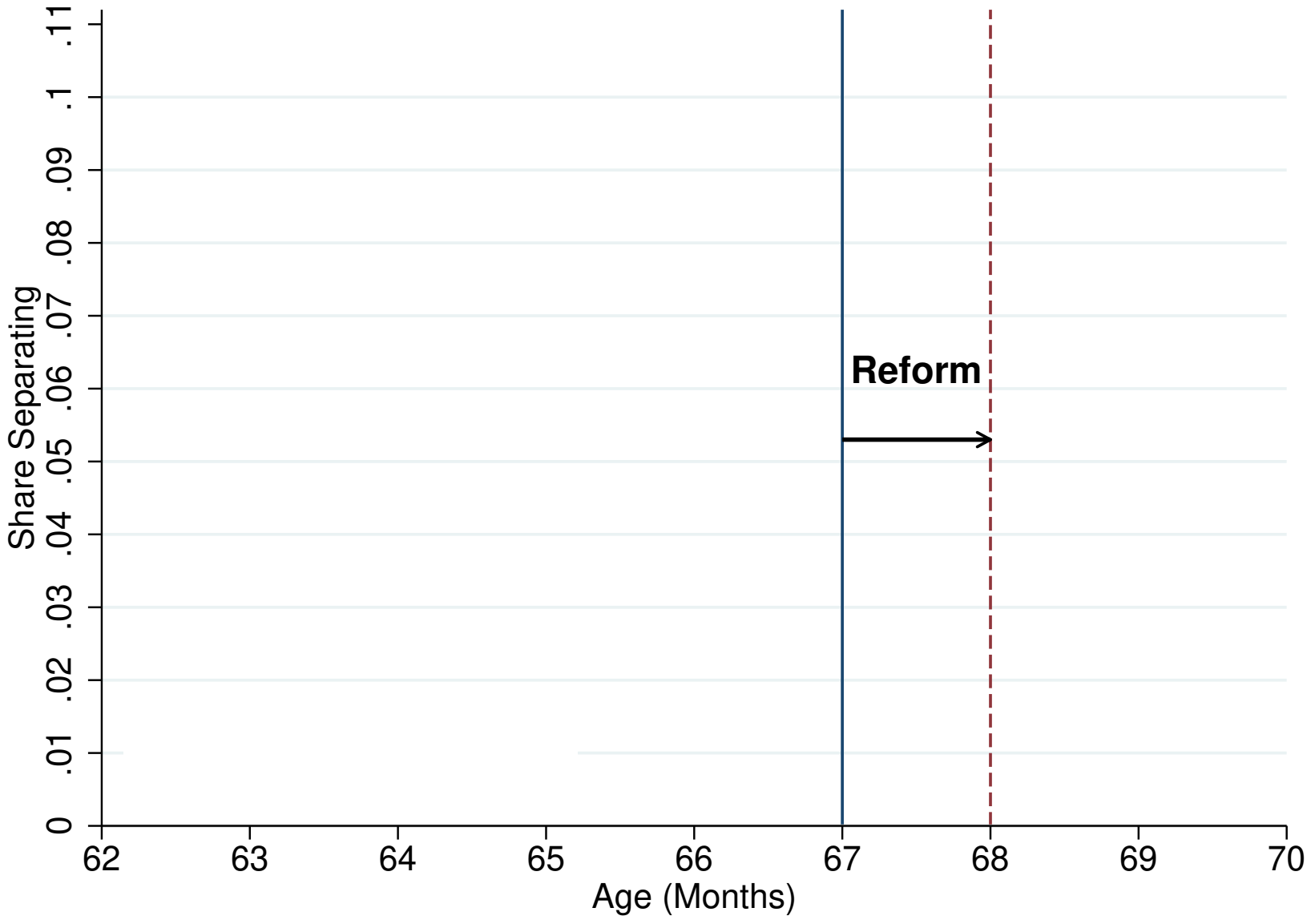


Note: due to (monthly) data quality limitations pre-2019 and retirement norms / incentives at 65 in those years, the spike at 65 pre-2003 does not lend itself to identifying EPL effects, and we focus on the post-2019 period.

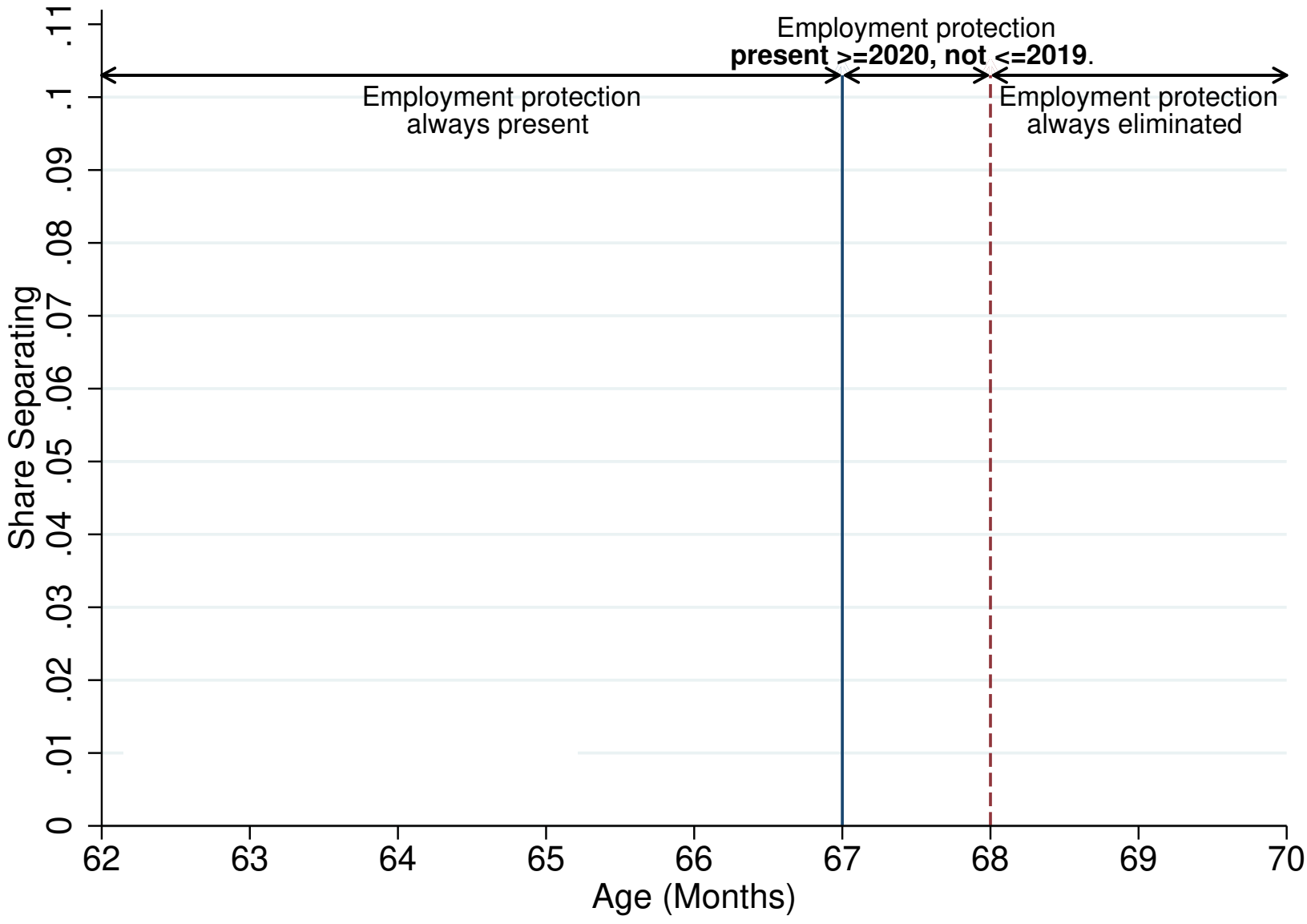
Reform in 2020: Cutoff Shifts from 67 to 68



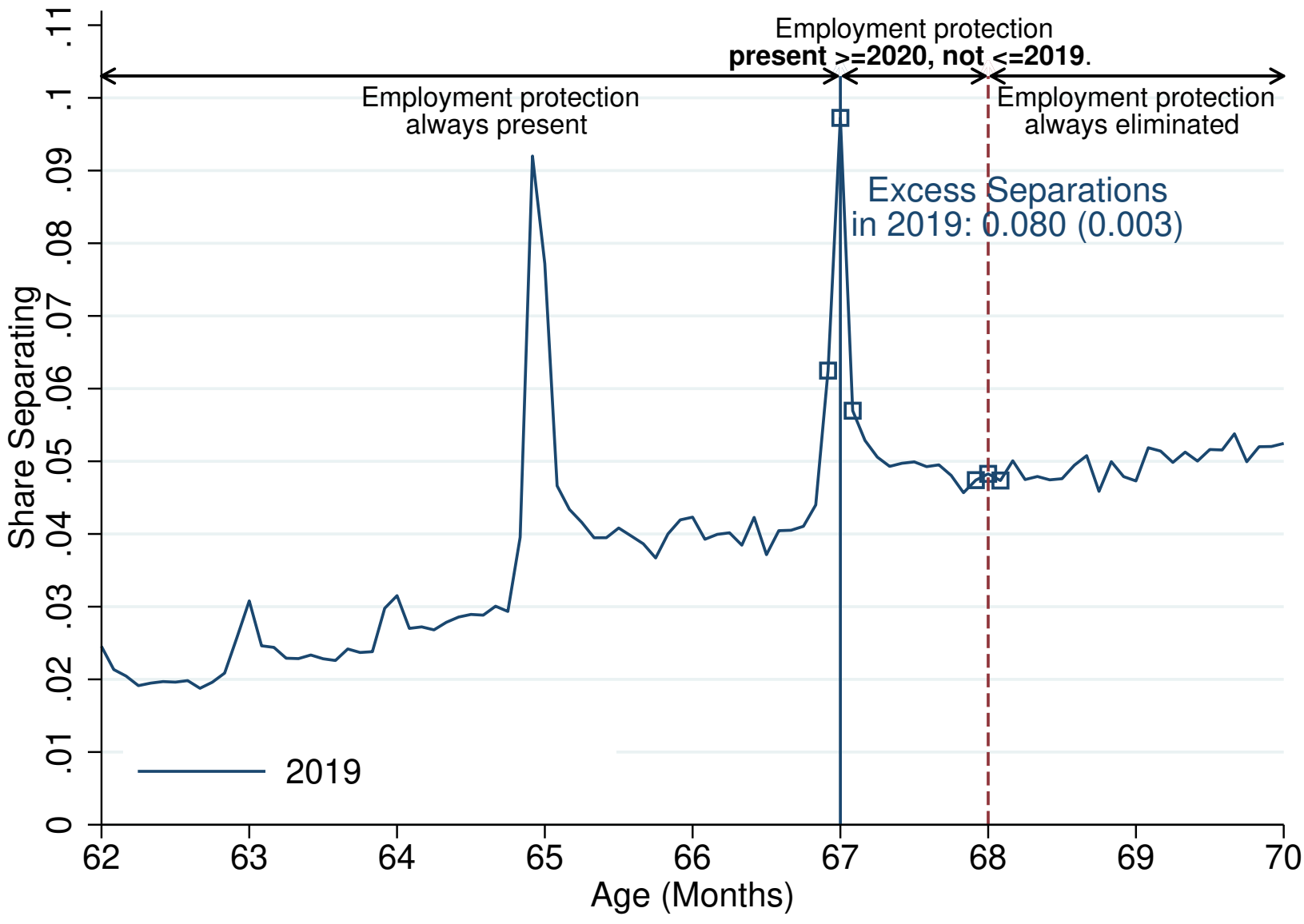
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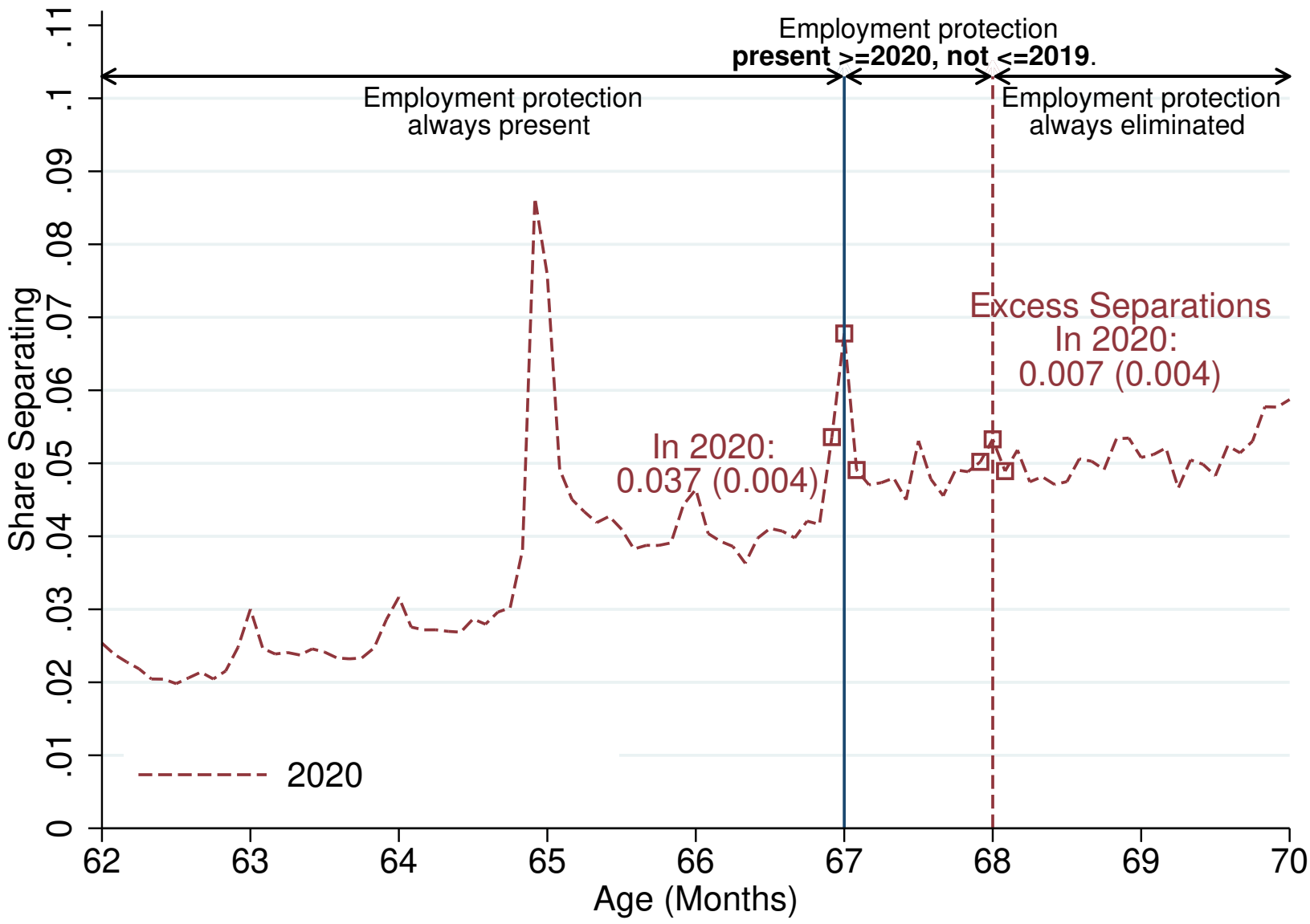
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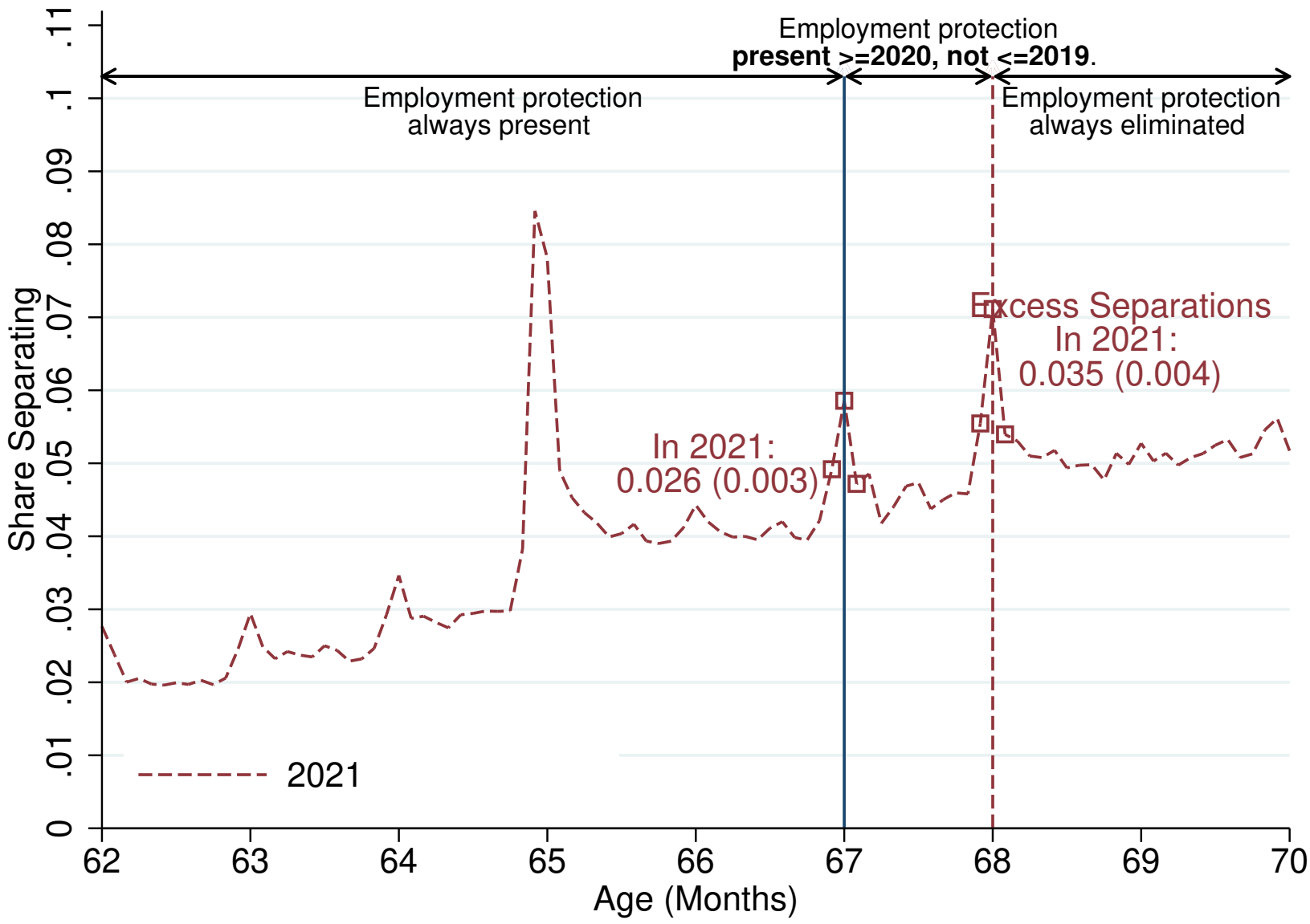
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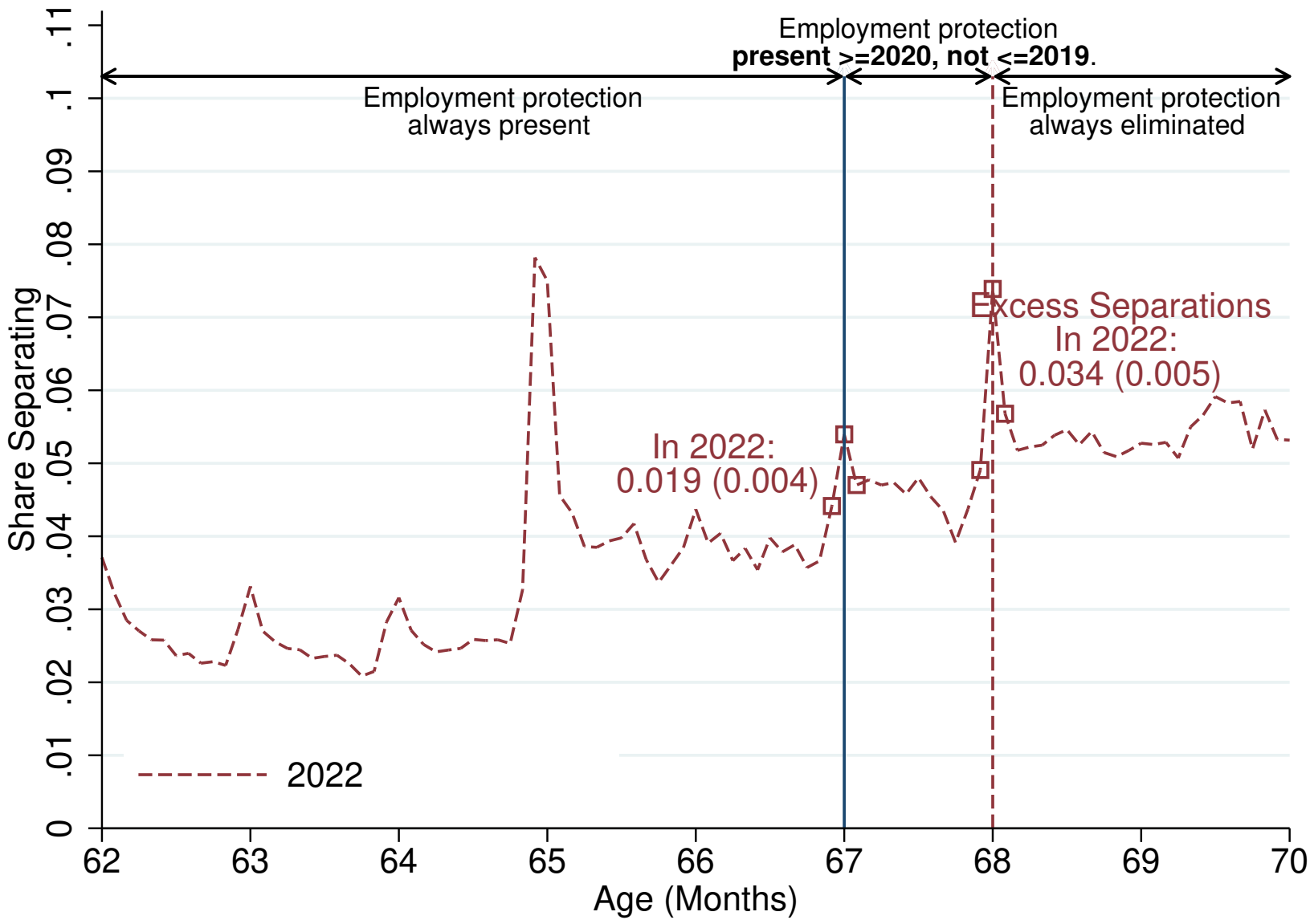
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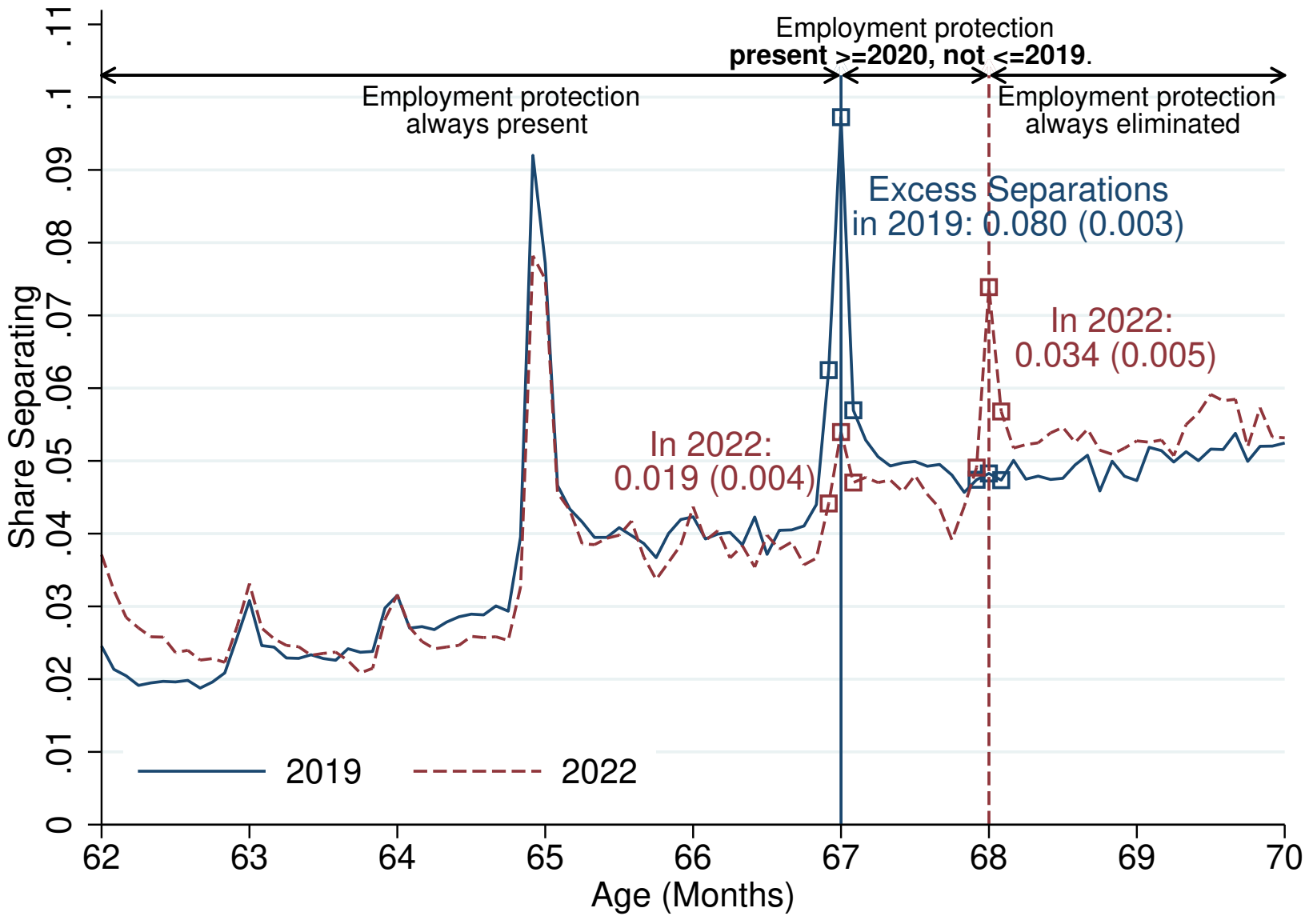
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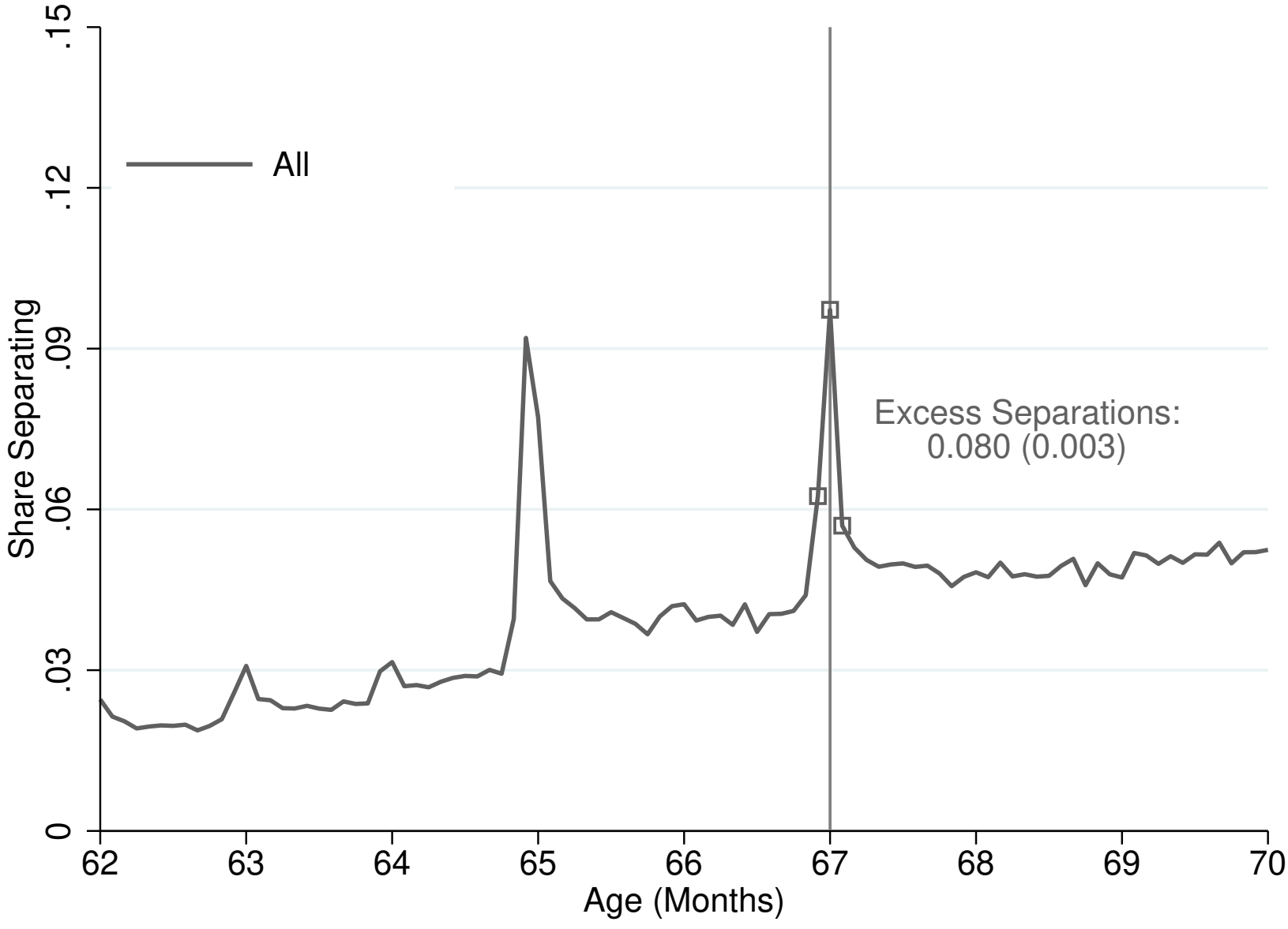


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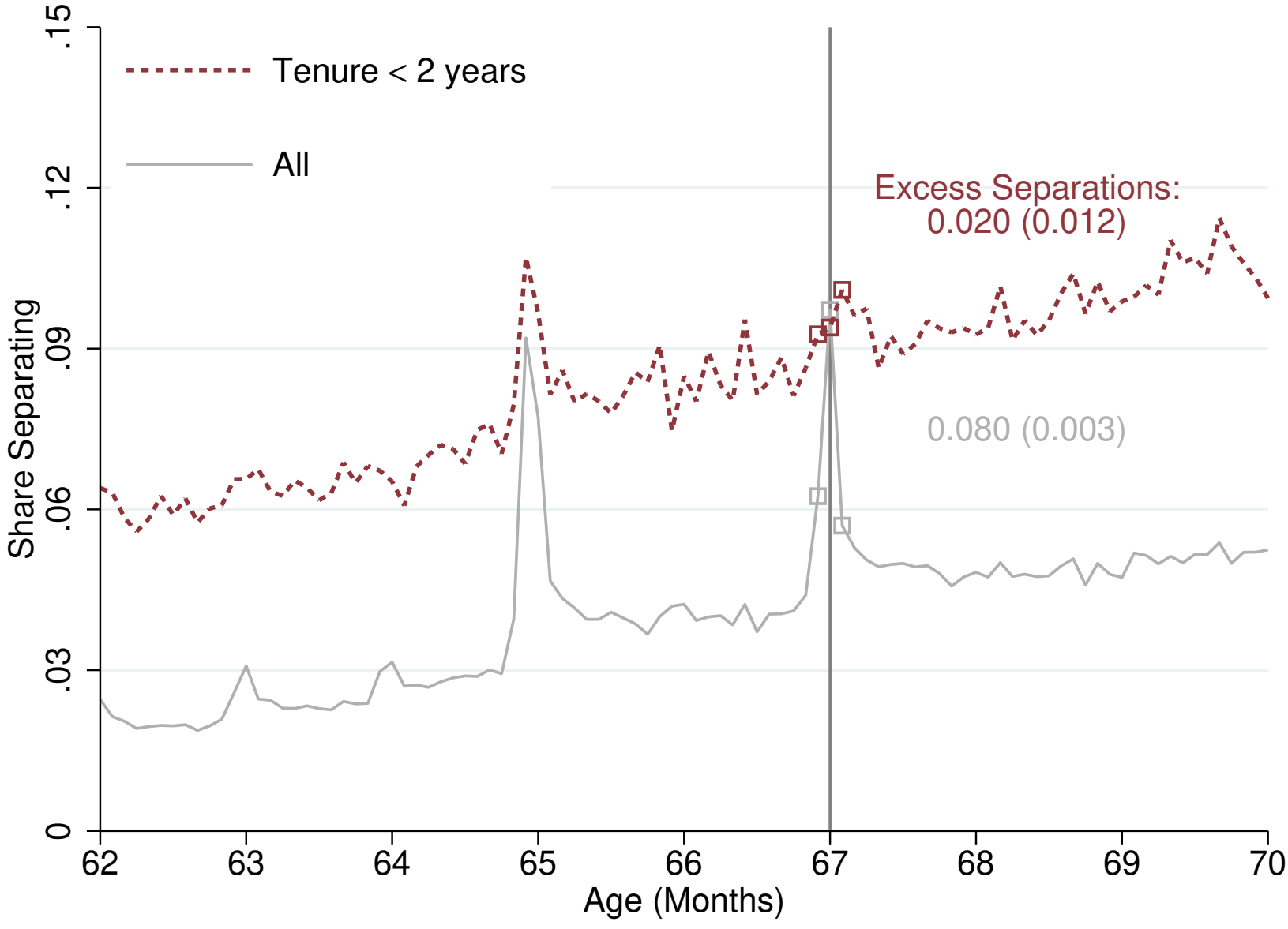


Heterogeneity by EPL Strength: Tenure

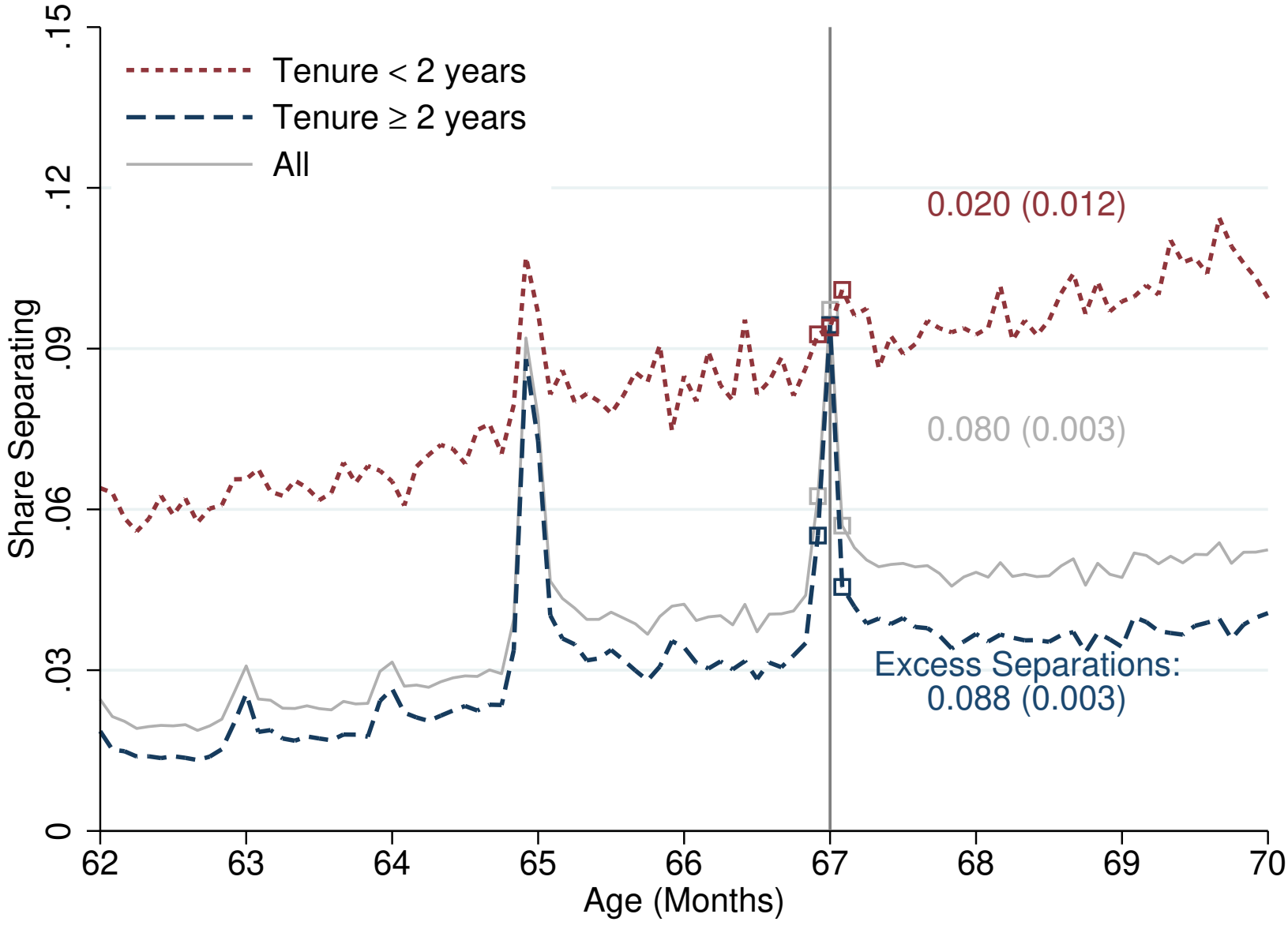
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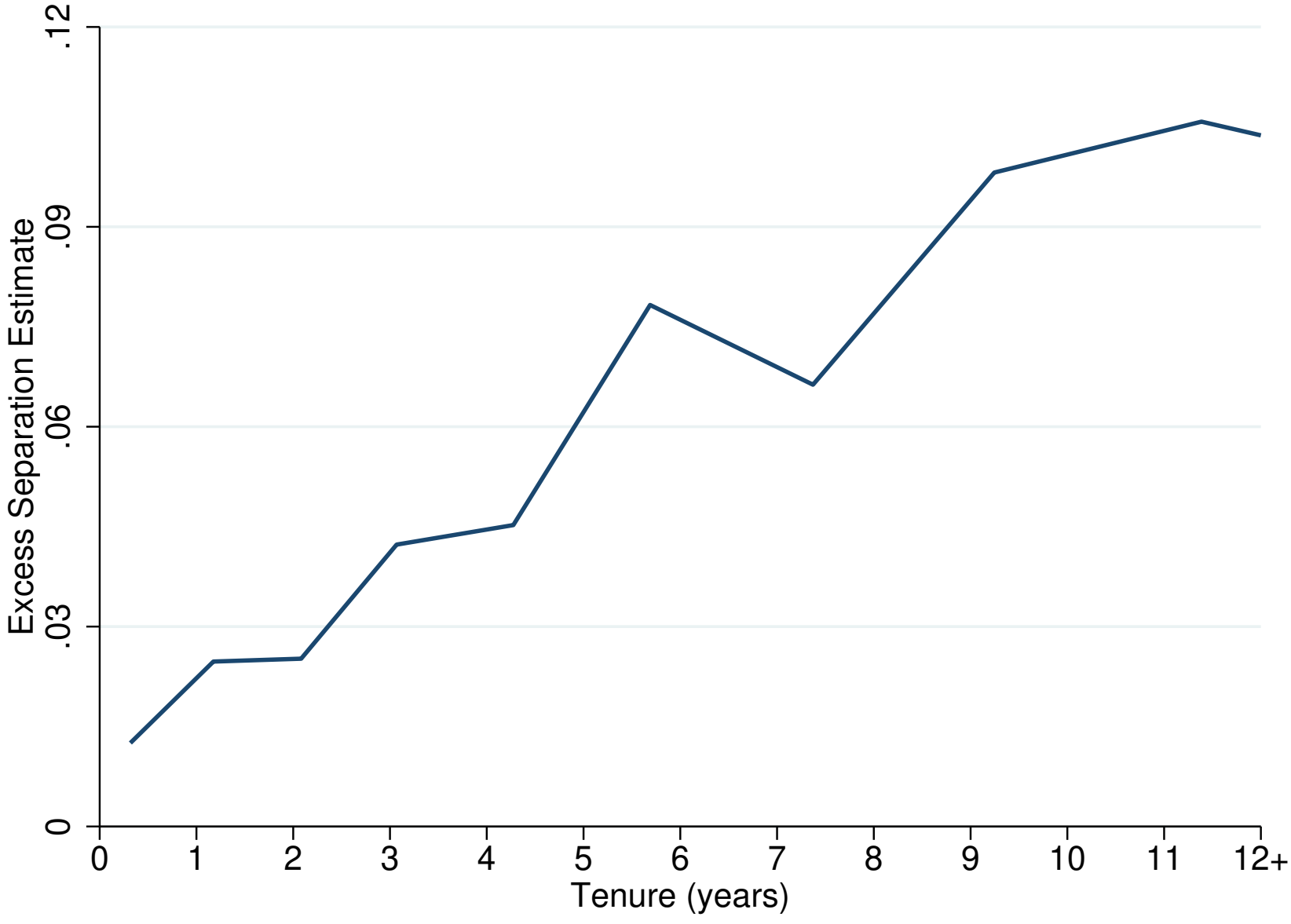
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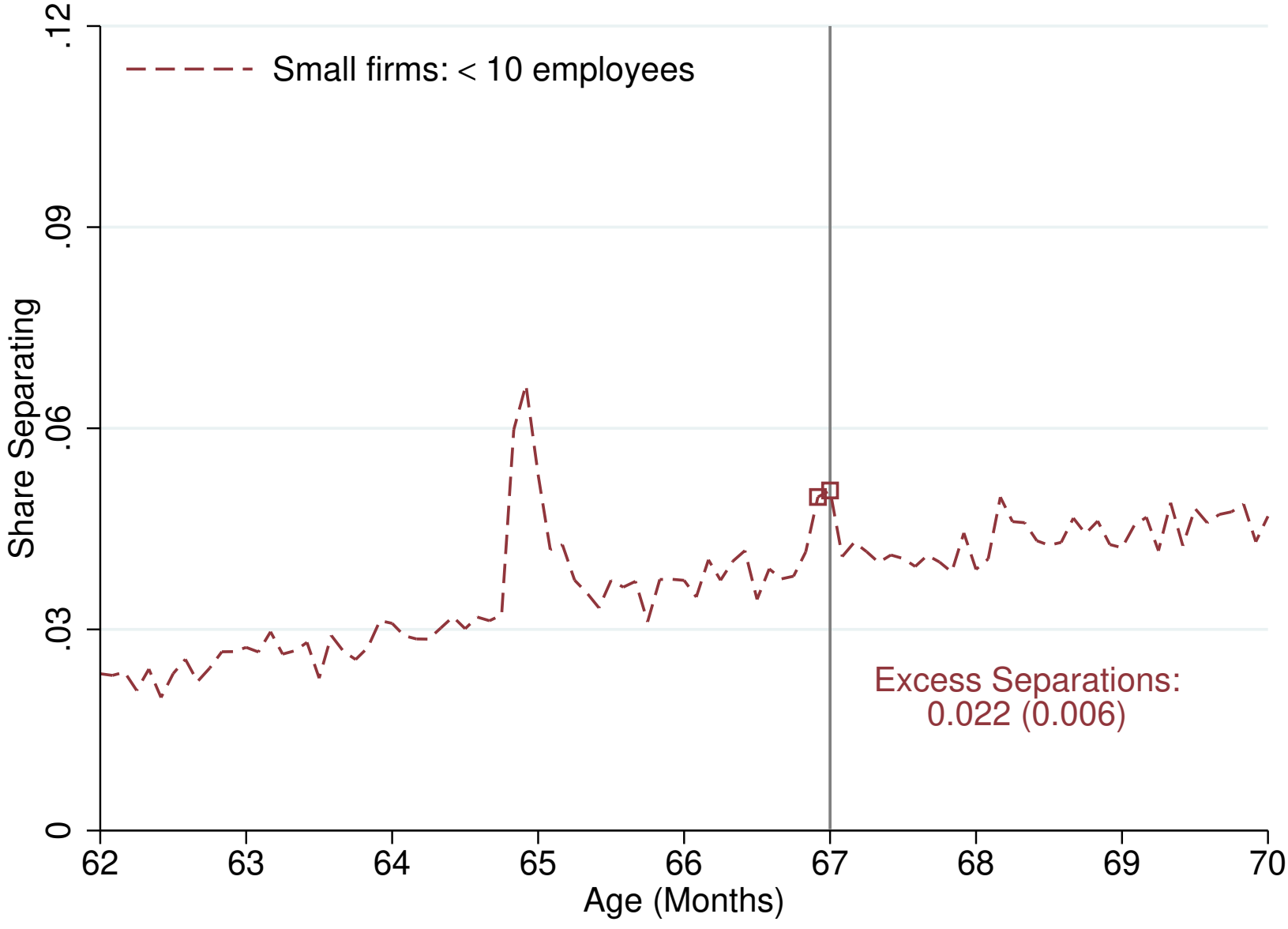
Heterogeneity by EPL Strength: Tenure Rank



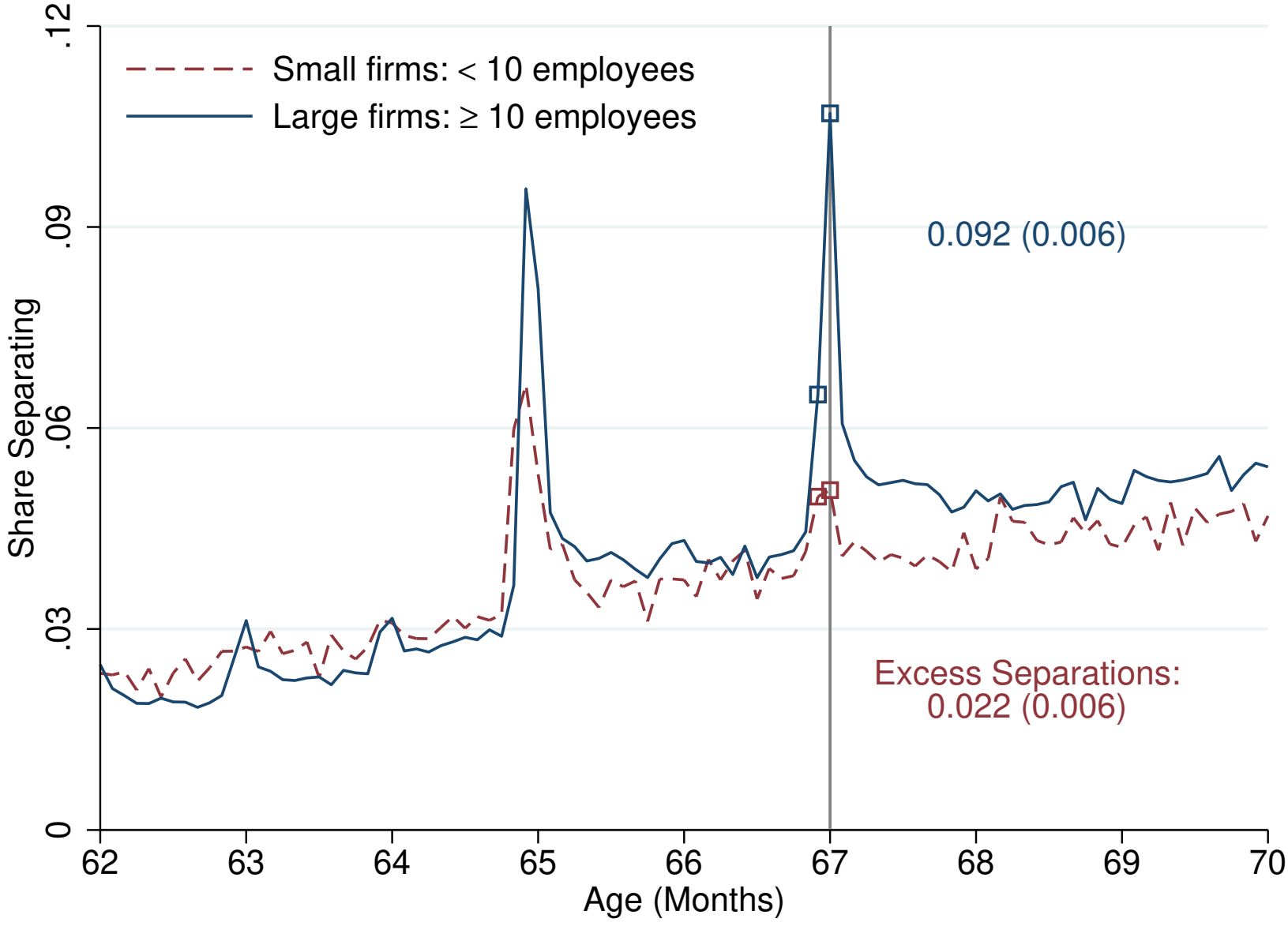
Heterogeneity by EPL Strength: Tenure



Heterogeneity by EPL Strength: Firm Size (LIFO)



Heterogeneity by EPL Strength: Firm Size (LIFO)



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:

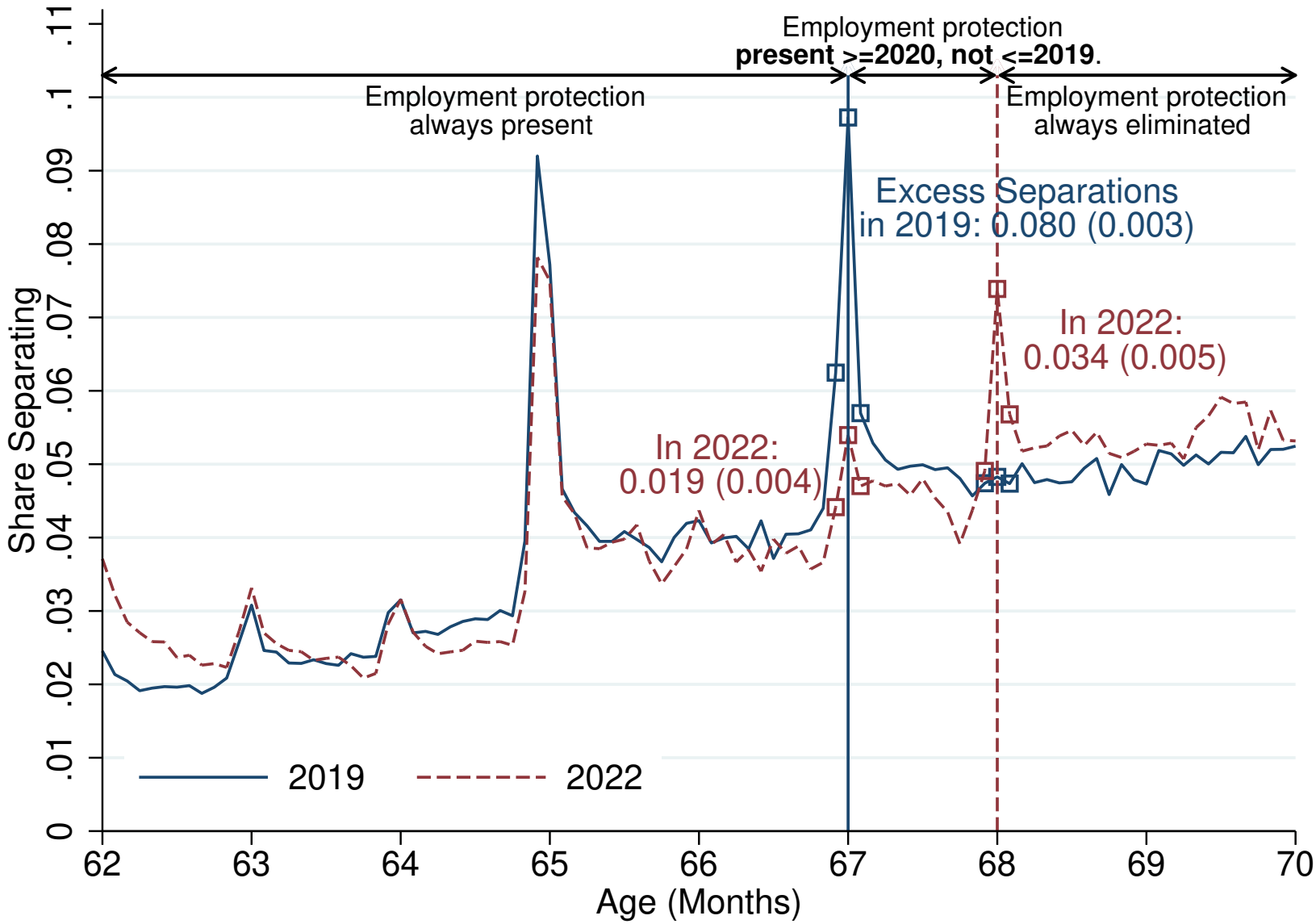
- Why so low?
- Which mechanisms can account for the spike?
- Which jobs and workers drive the effect?

Afterwards: beyond separations—total labor market effects

Empirical Roadmap

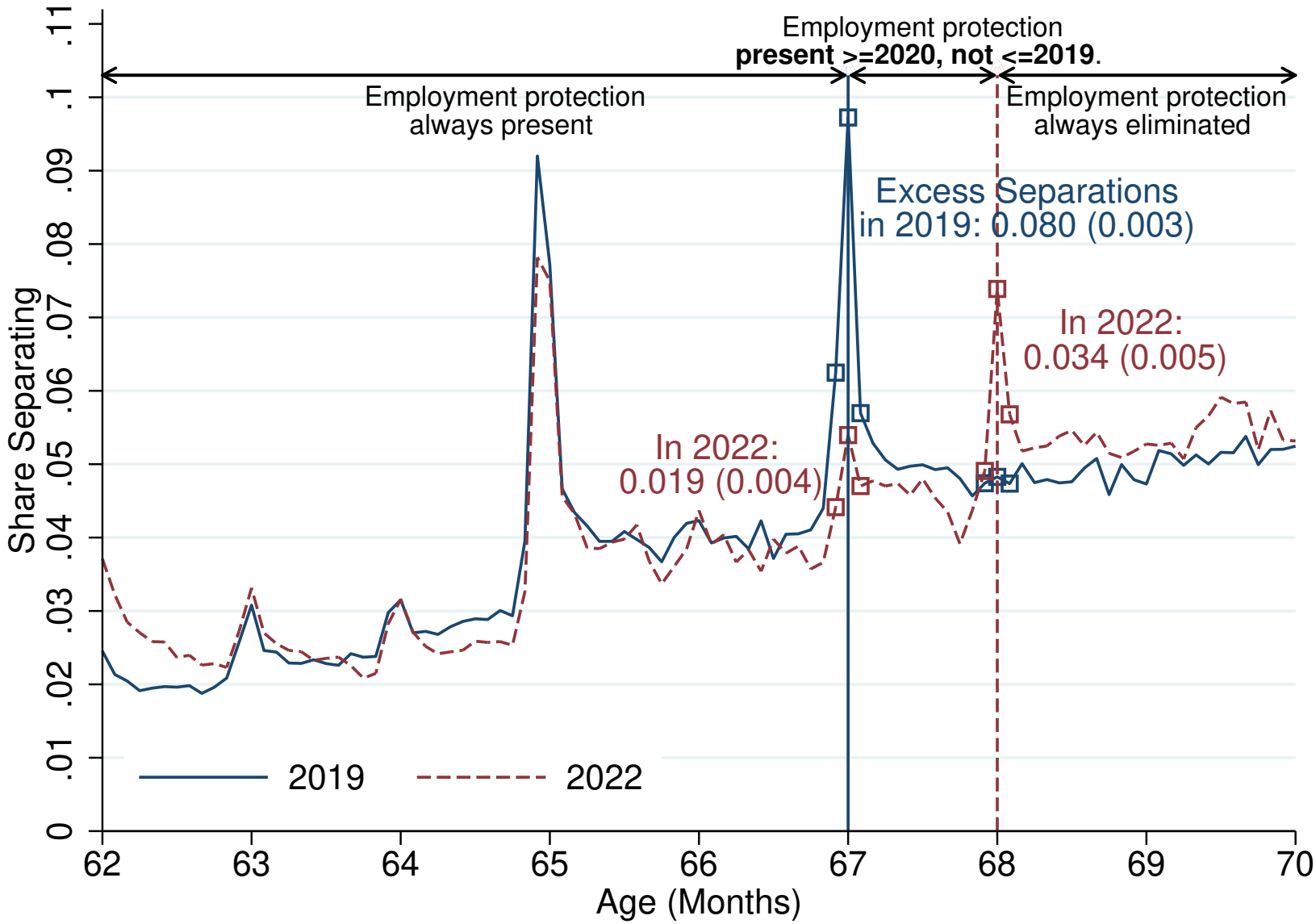
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2. Next: Understanding the effect
3. Beyond separations: effects on contracts of stayers
4. Total effect: employment, hiring, earnings
5. Policy evaluation and counterfactual: reform-based EPL shifts

Recap: Spike Moves from 67 to 68 with Cutoff

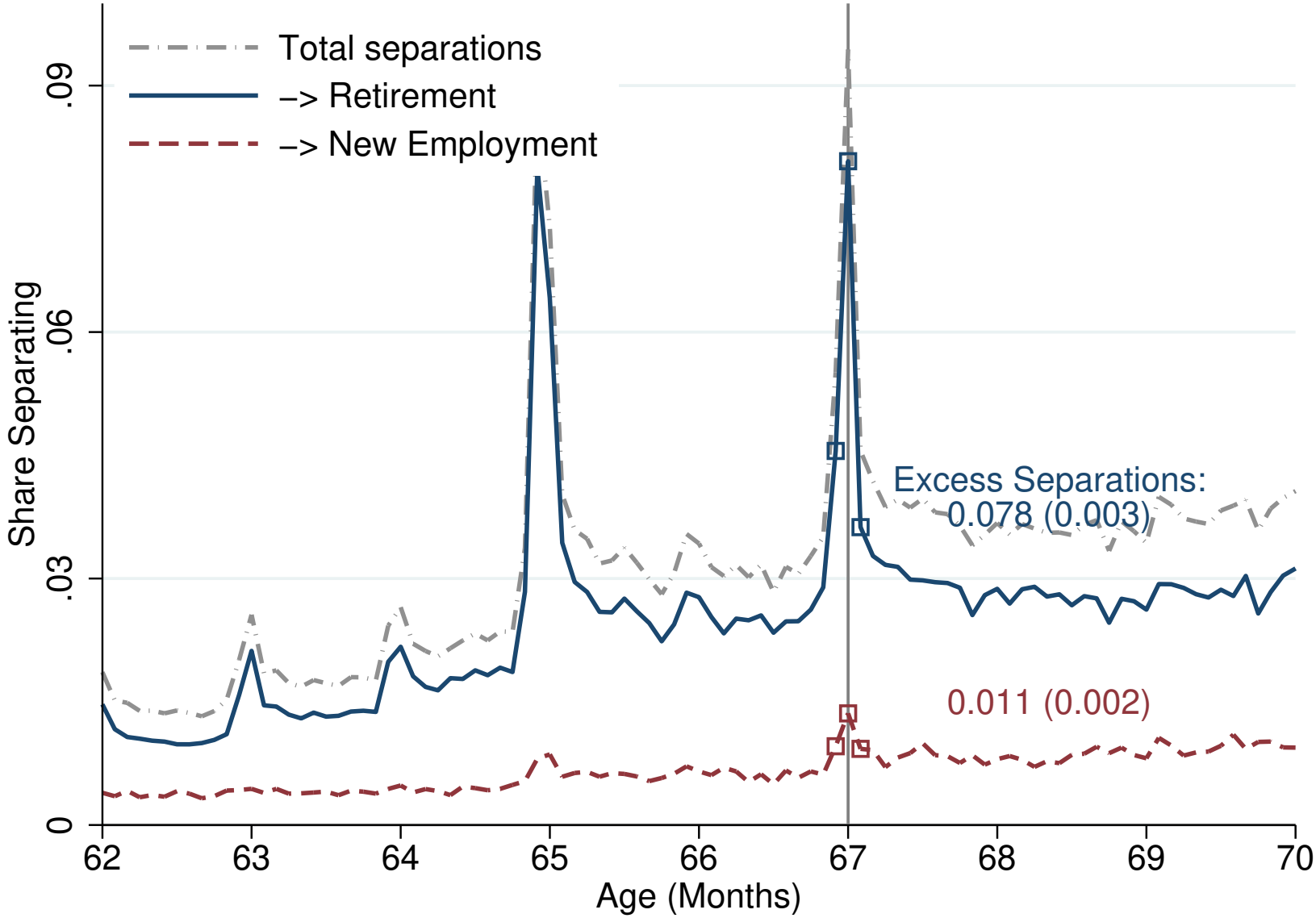


Recap: Spike Moves from 67 to 68 with Cutoff

⇒ **Spike Captures Sep's Involuntary to Worker**

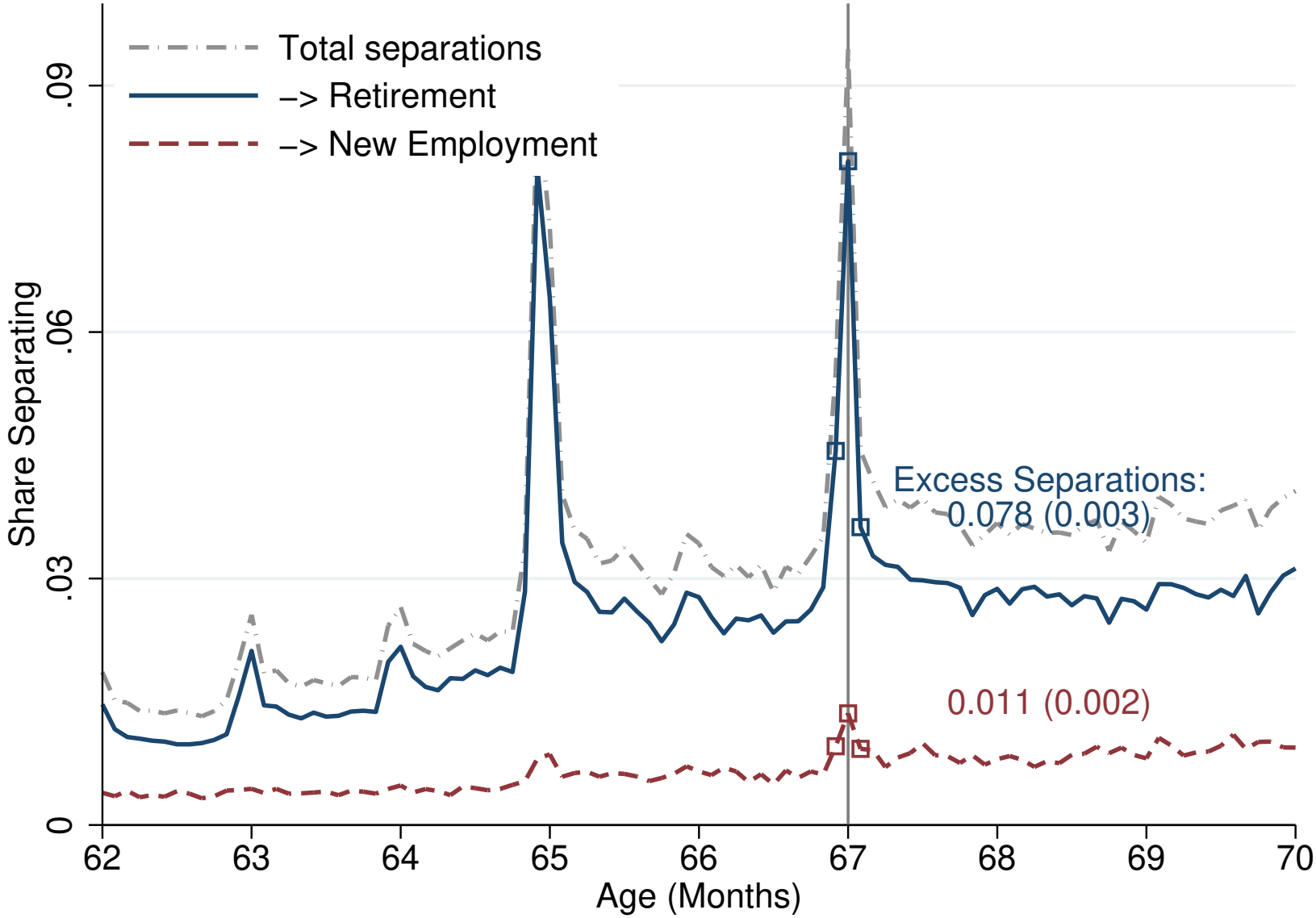


Spike Goes Into Permanent Nonemployment

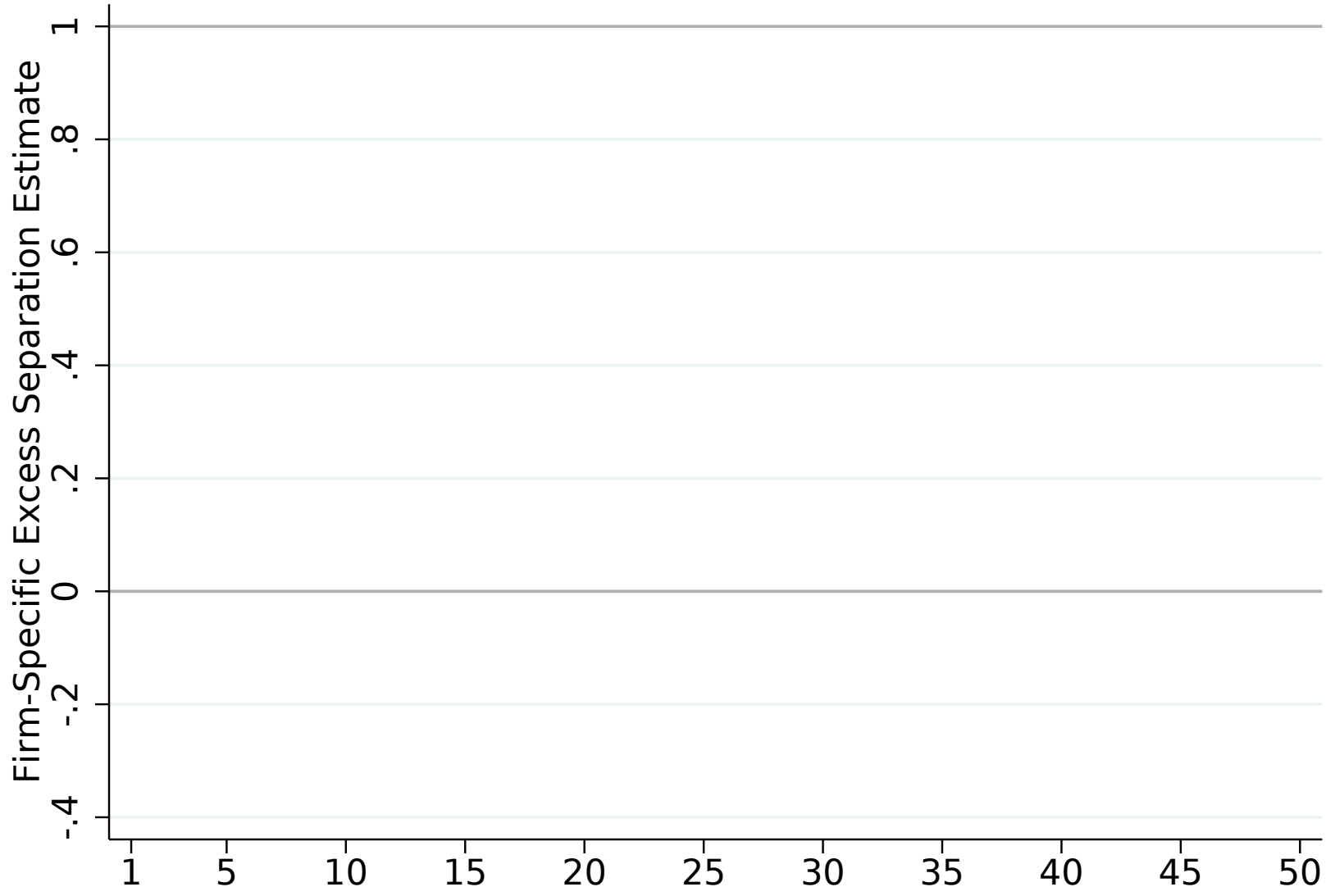


Spike Goes Into Permanent Nonemployment

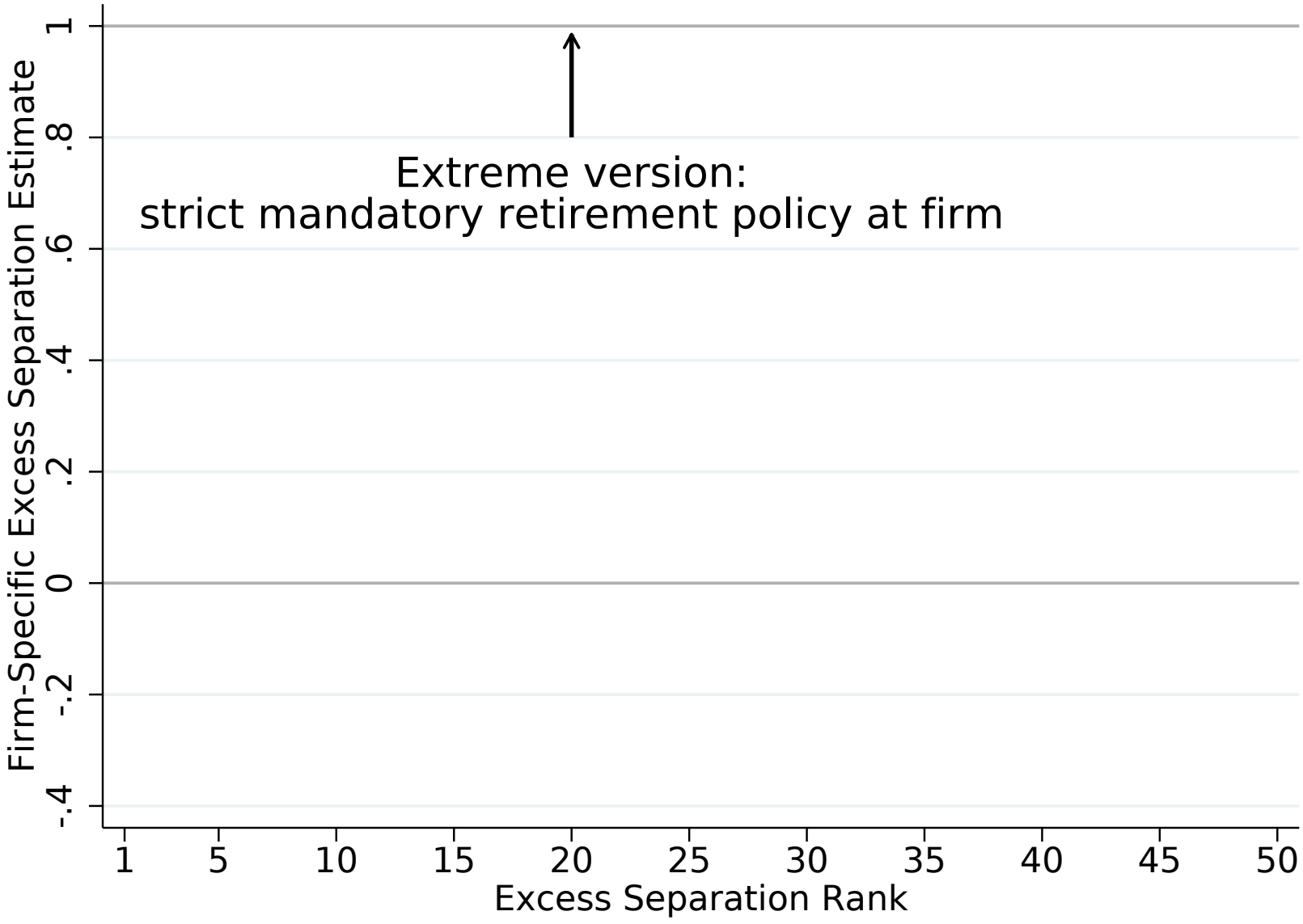
⇒**Happily Stay Put—But Won't Find/Take Other Job**



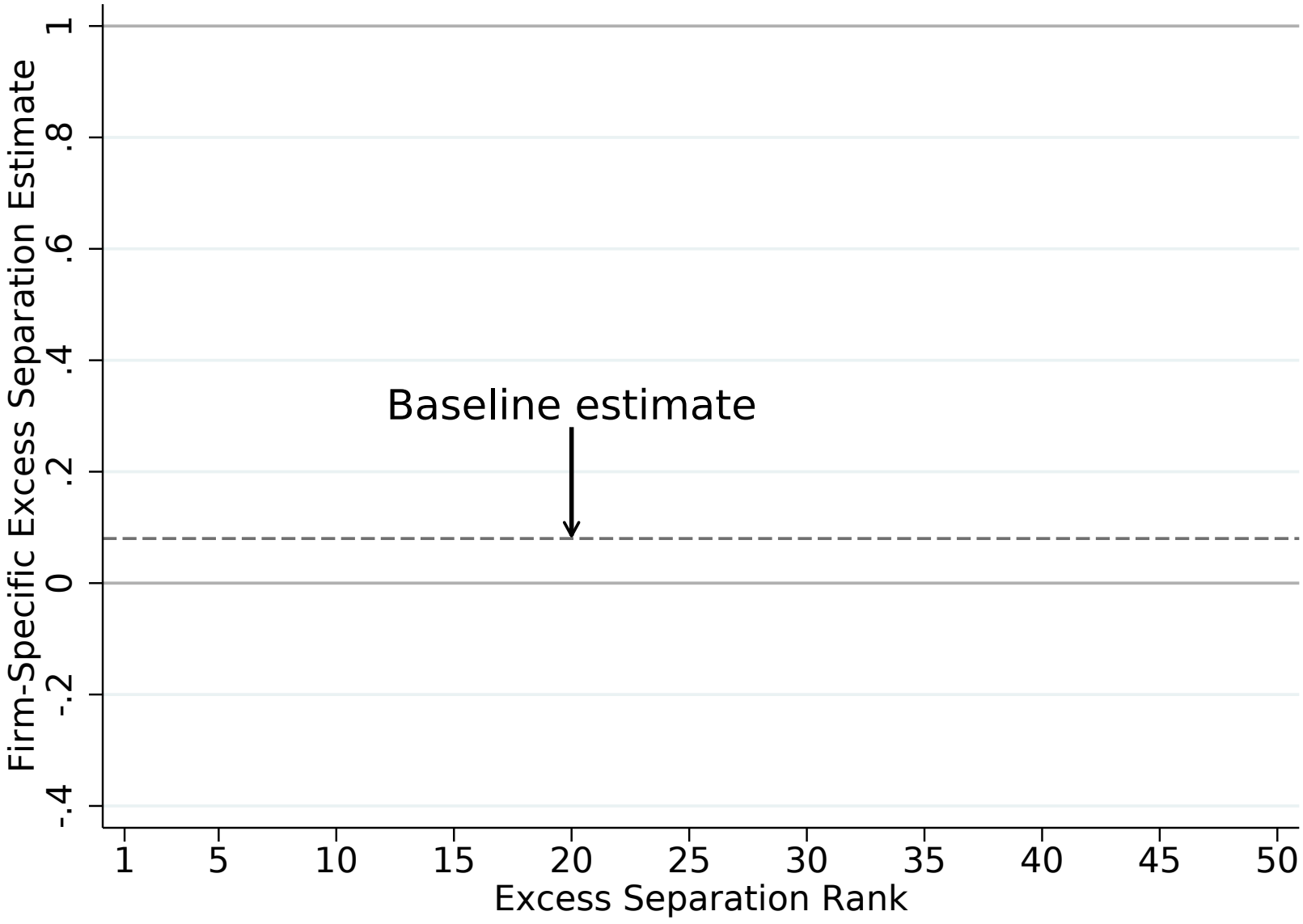
Retirement Bunching Not Bunched Across Firms



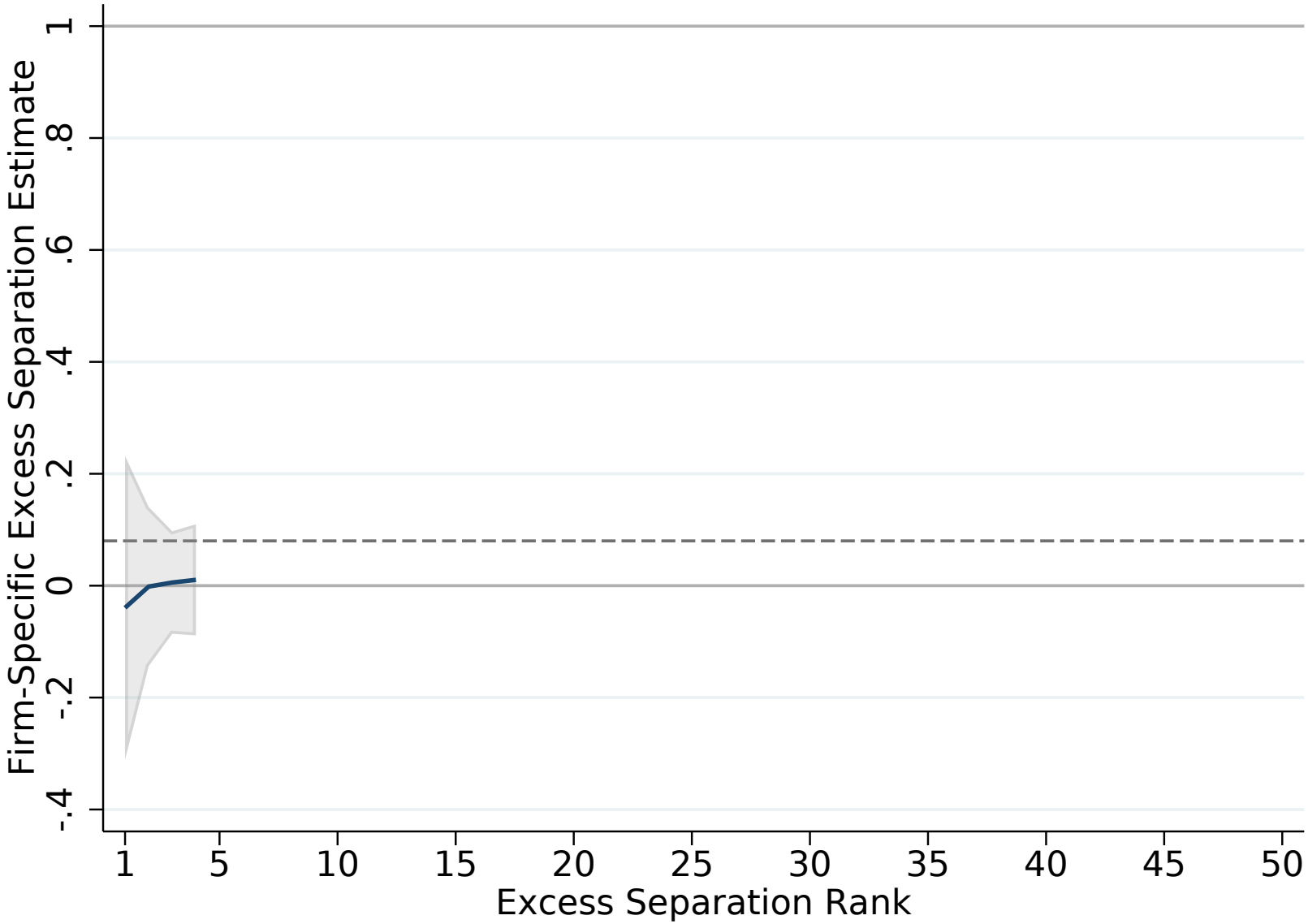
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Retirement Bunching Not Bunched Across Firms

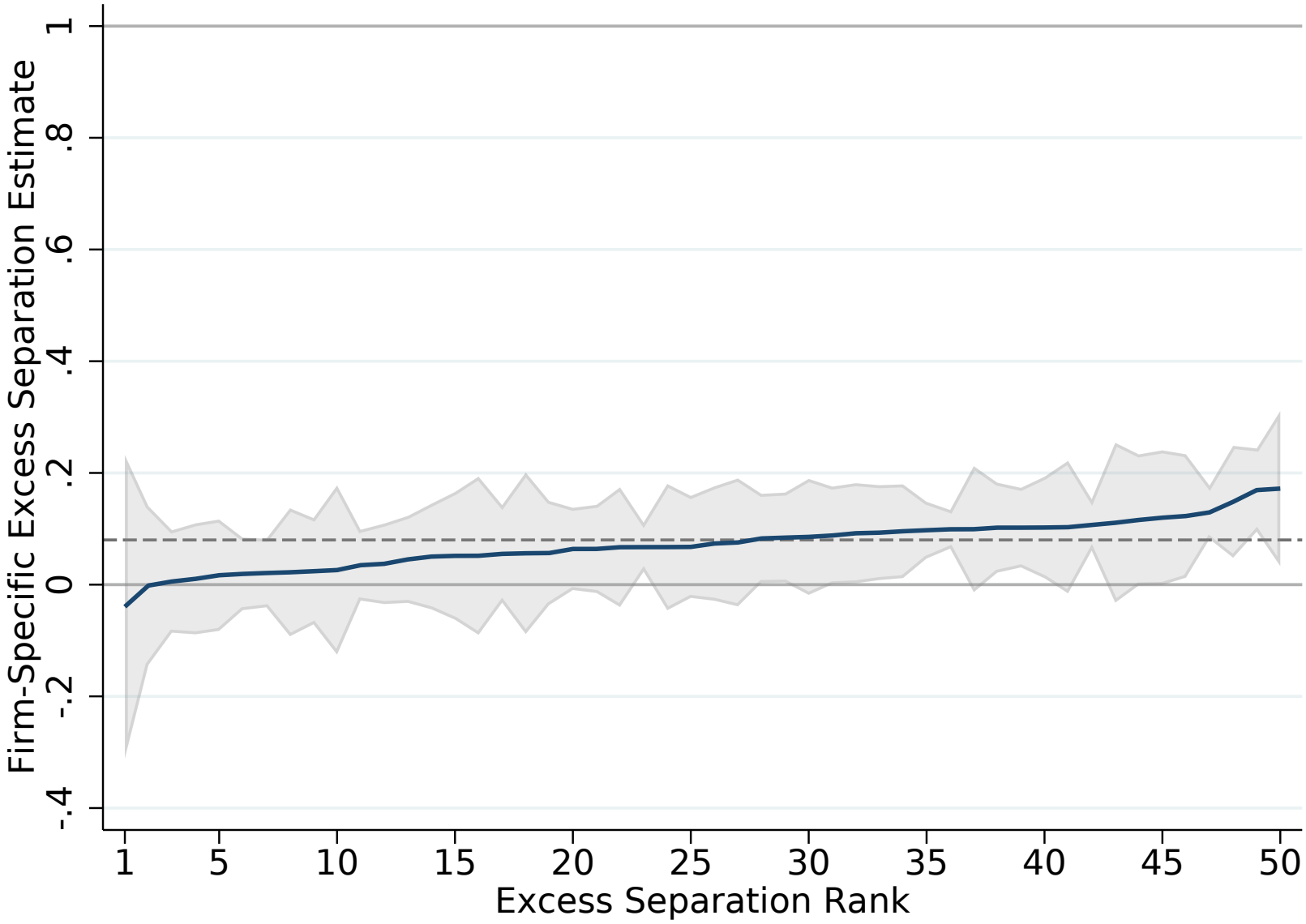


Retirement Bunching Not Bunched Across Firms

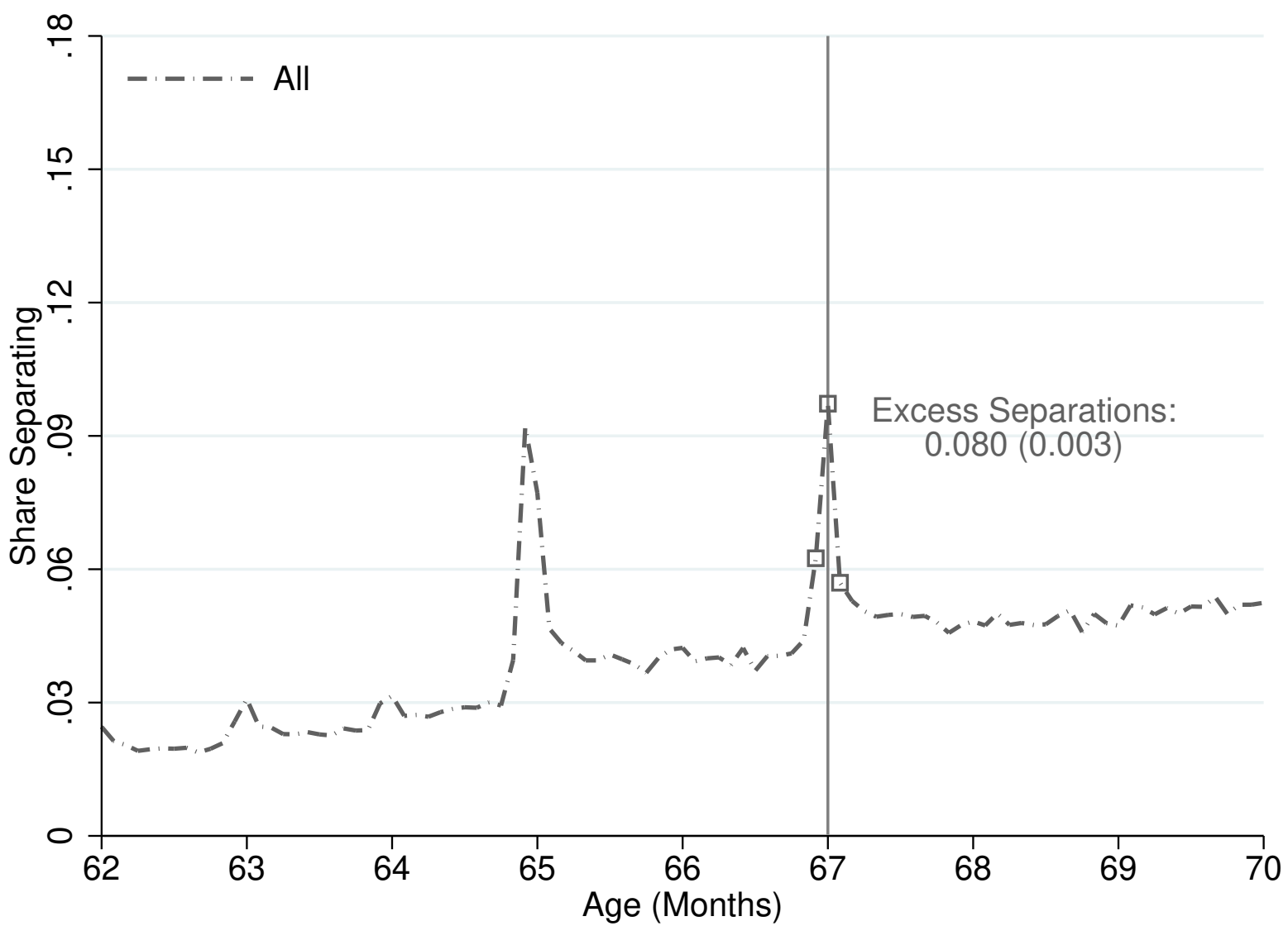


Retirement Bunching Not Bunched Across Firms

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

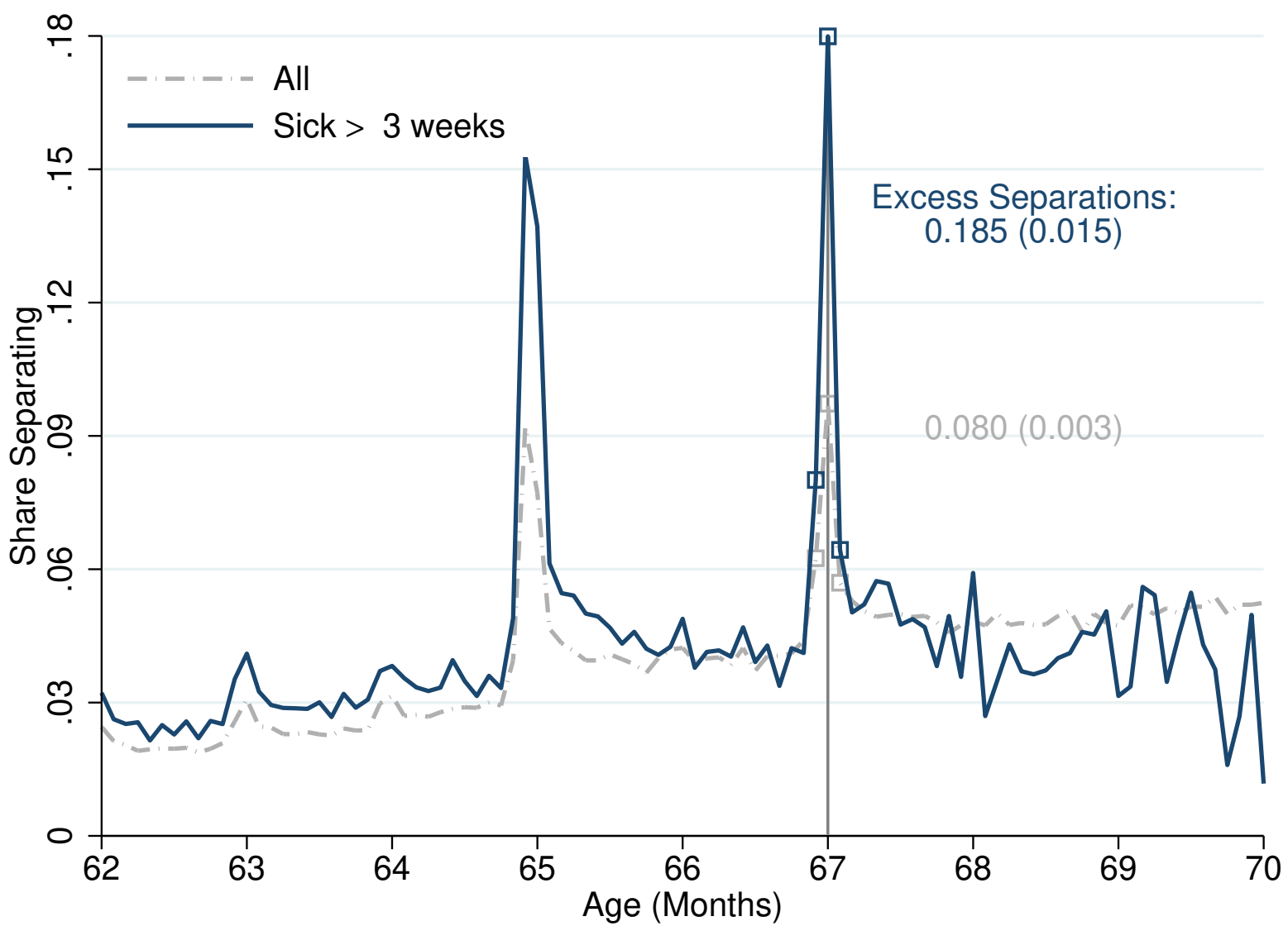


Recently (in 2018) Sick Workers Separate at 67



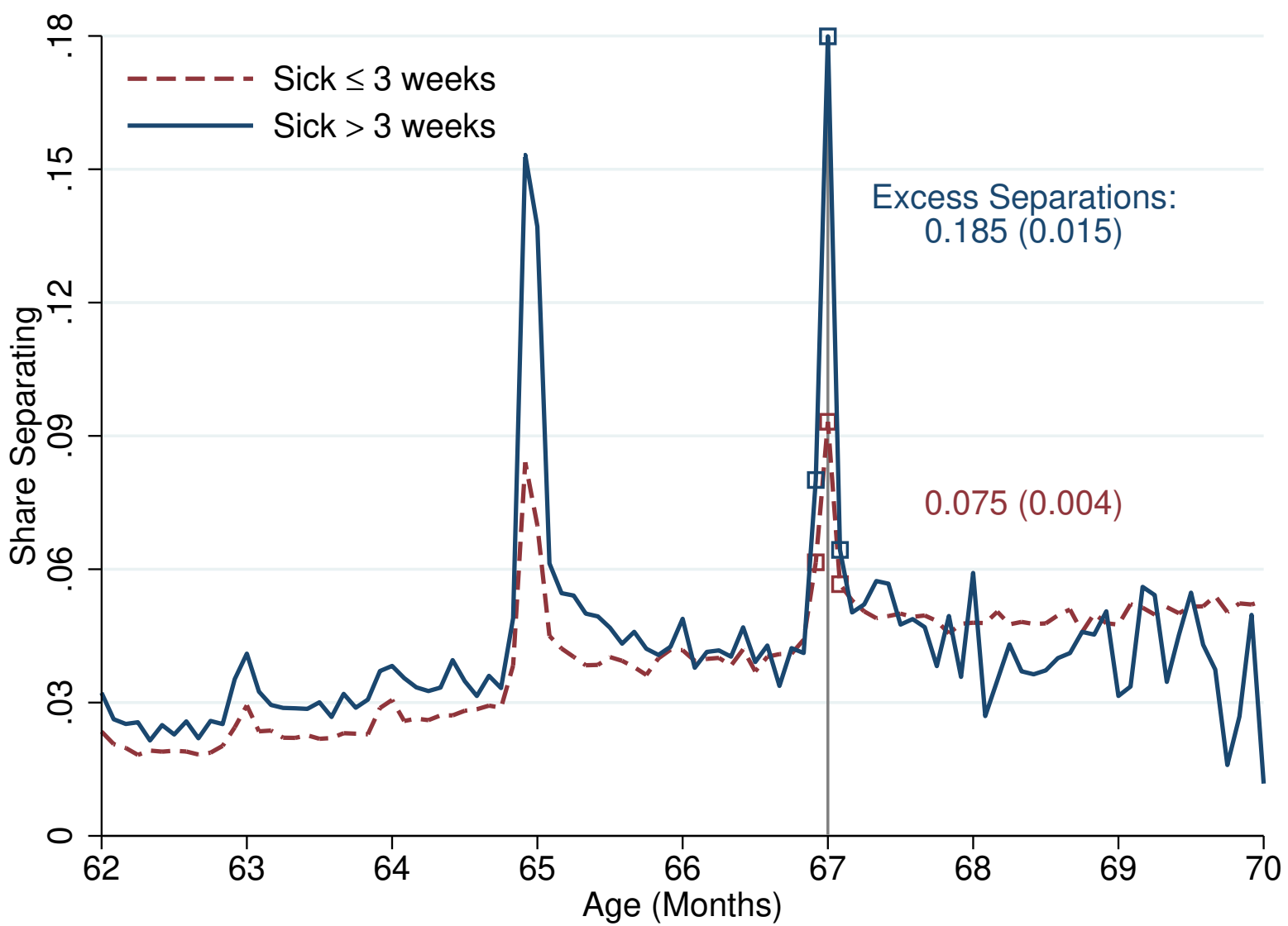
Sickness in 2018 flagged in administrative data corresponding to about 3 weeks of sickness.

Recently (in 2018) Sick Workers Separate at 67



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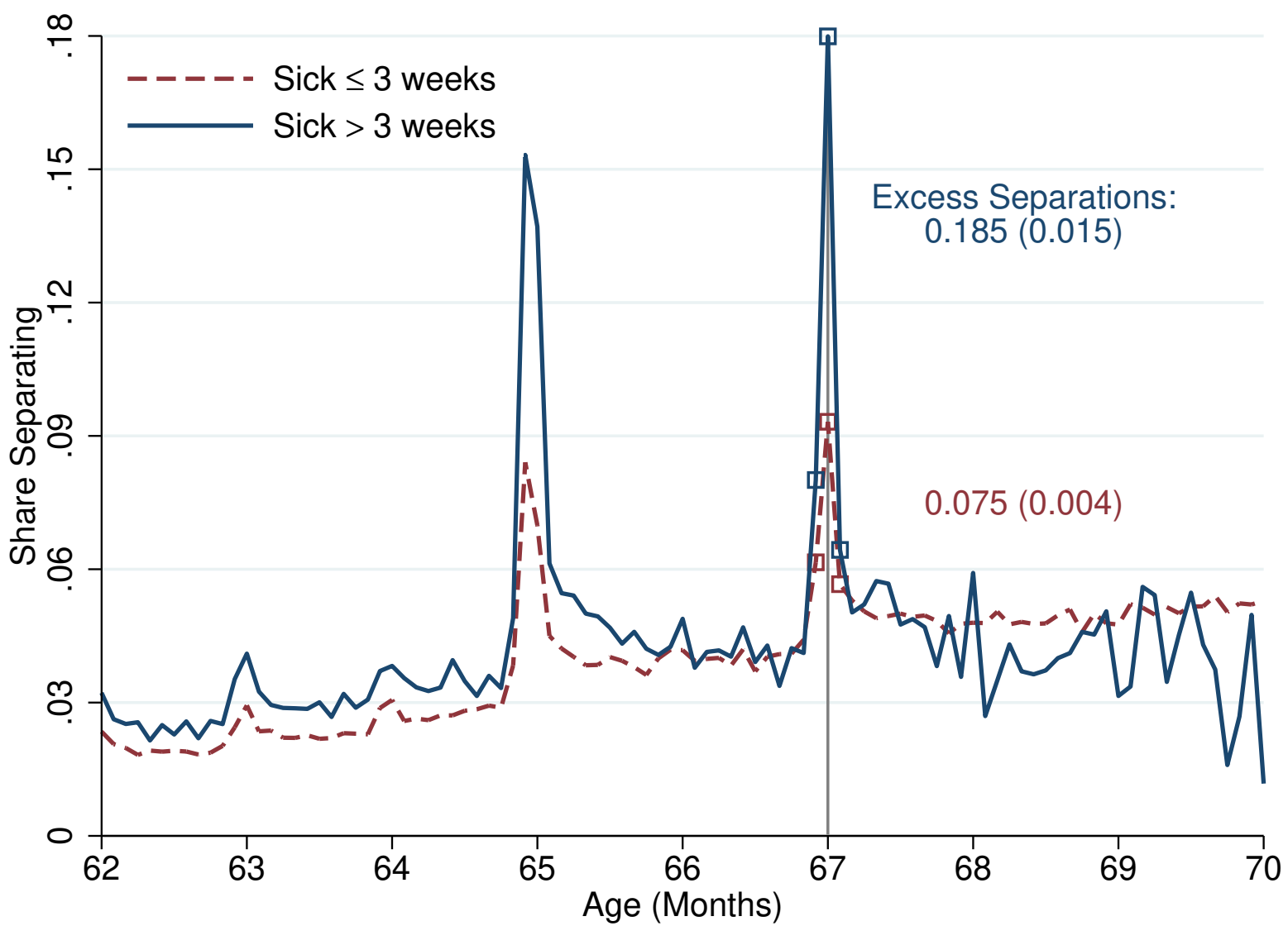
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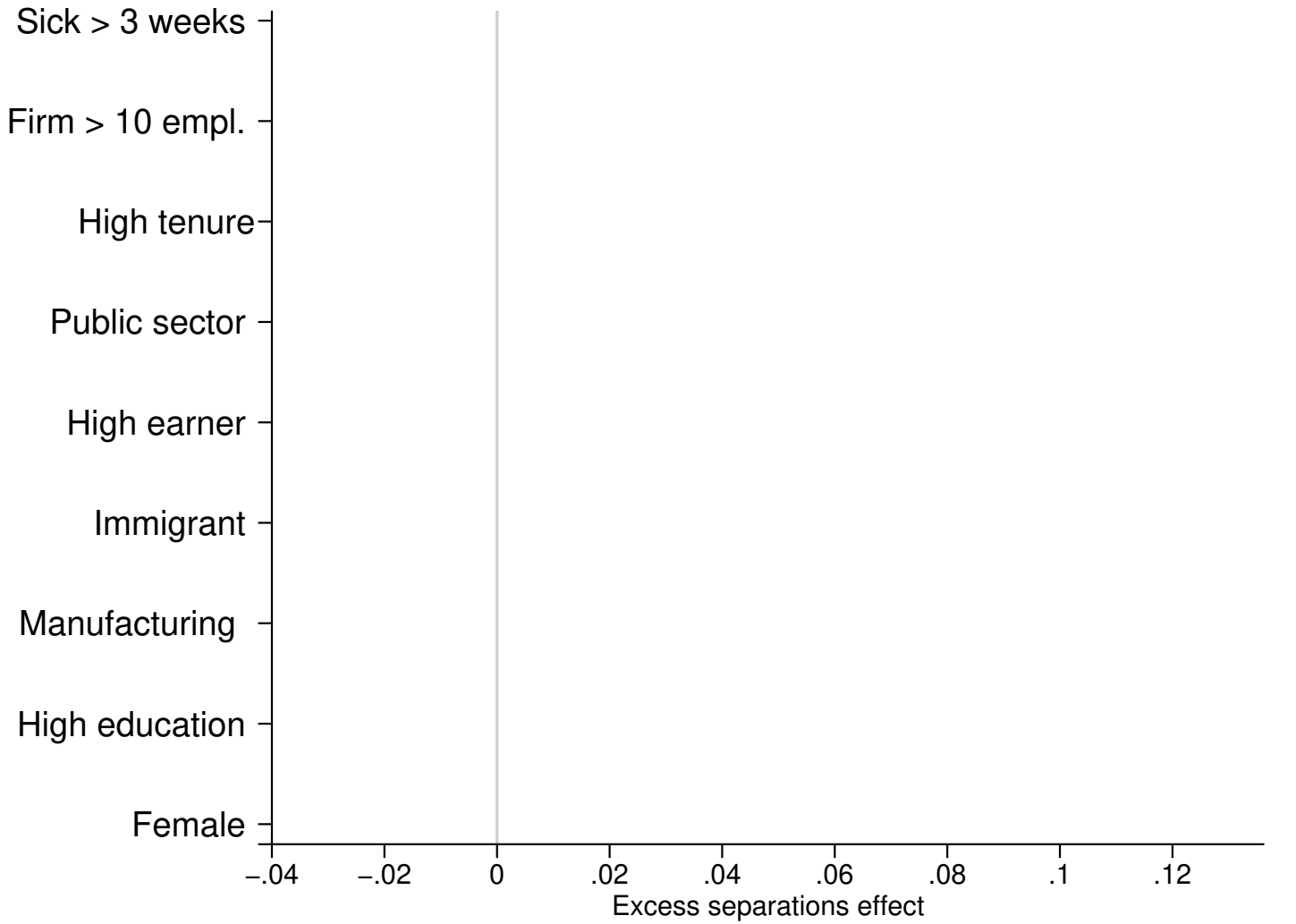
Recently (in 2018) Sick Workers Separate at 67

⇒ **Firms Getting Rid of Less Productive Workers?**



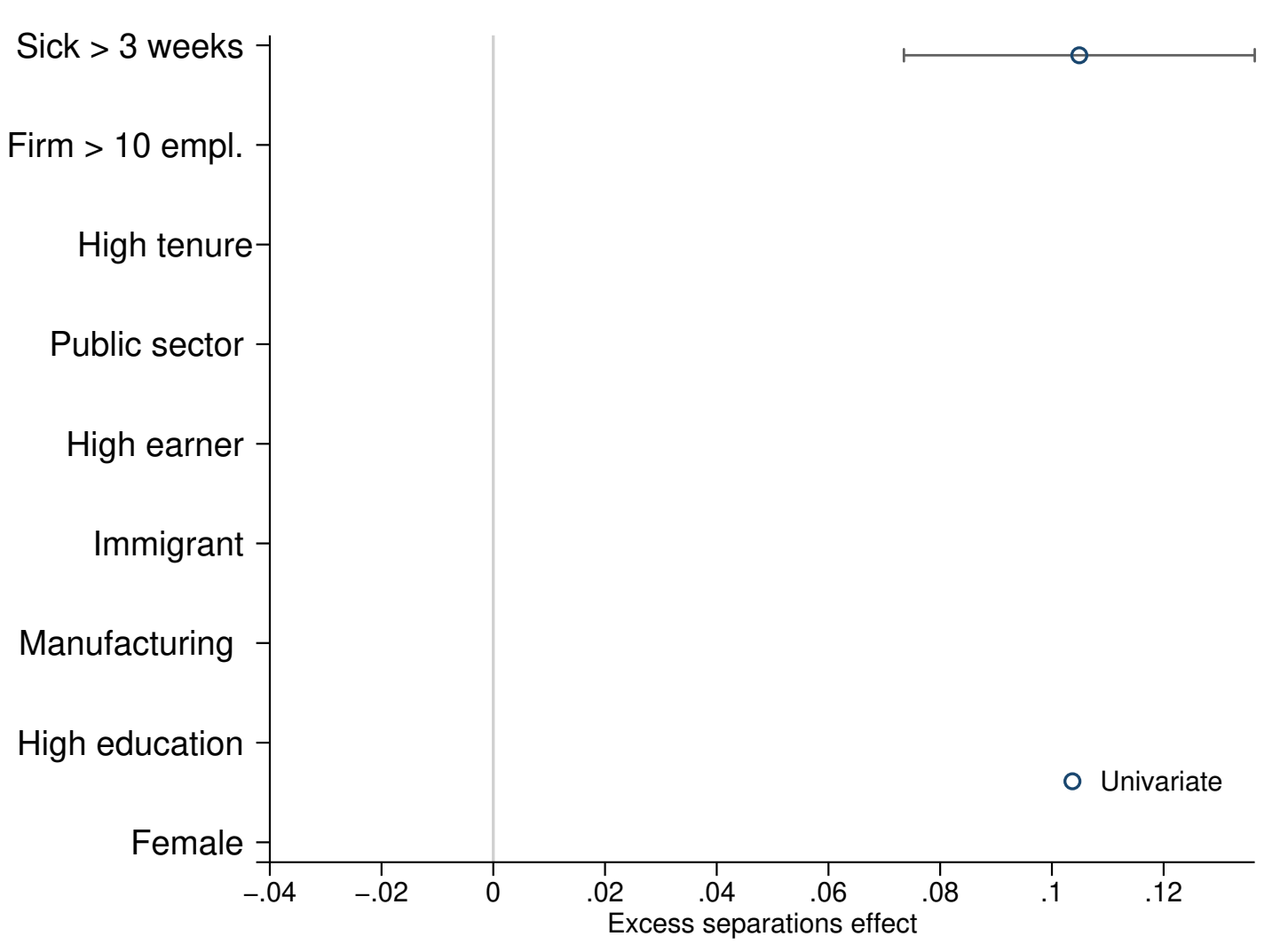
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Heterogeneity: Regression Analysis: Uni-variate



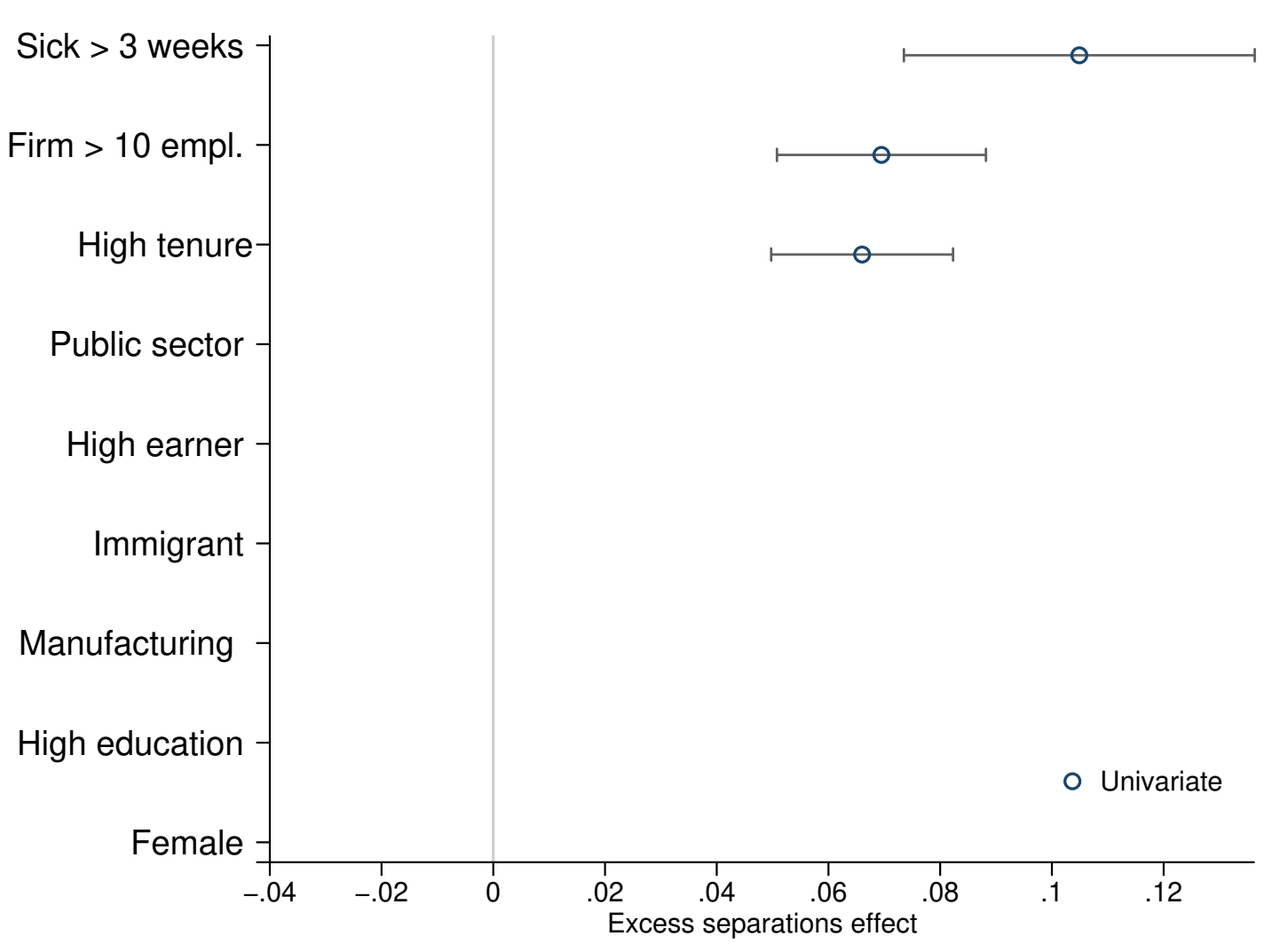
Method of regression-based bunching analysis: regression in micro data with age dummies interacted with binary variable(s); bunching analysis is done on the basic of interaction coefficients on focal ages as in baseline bunching analysis.

Heterogeneity: Regression Analysis: Uni-variate



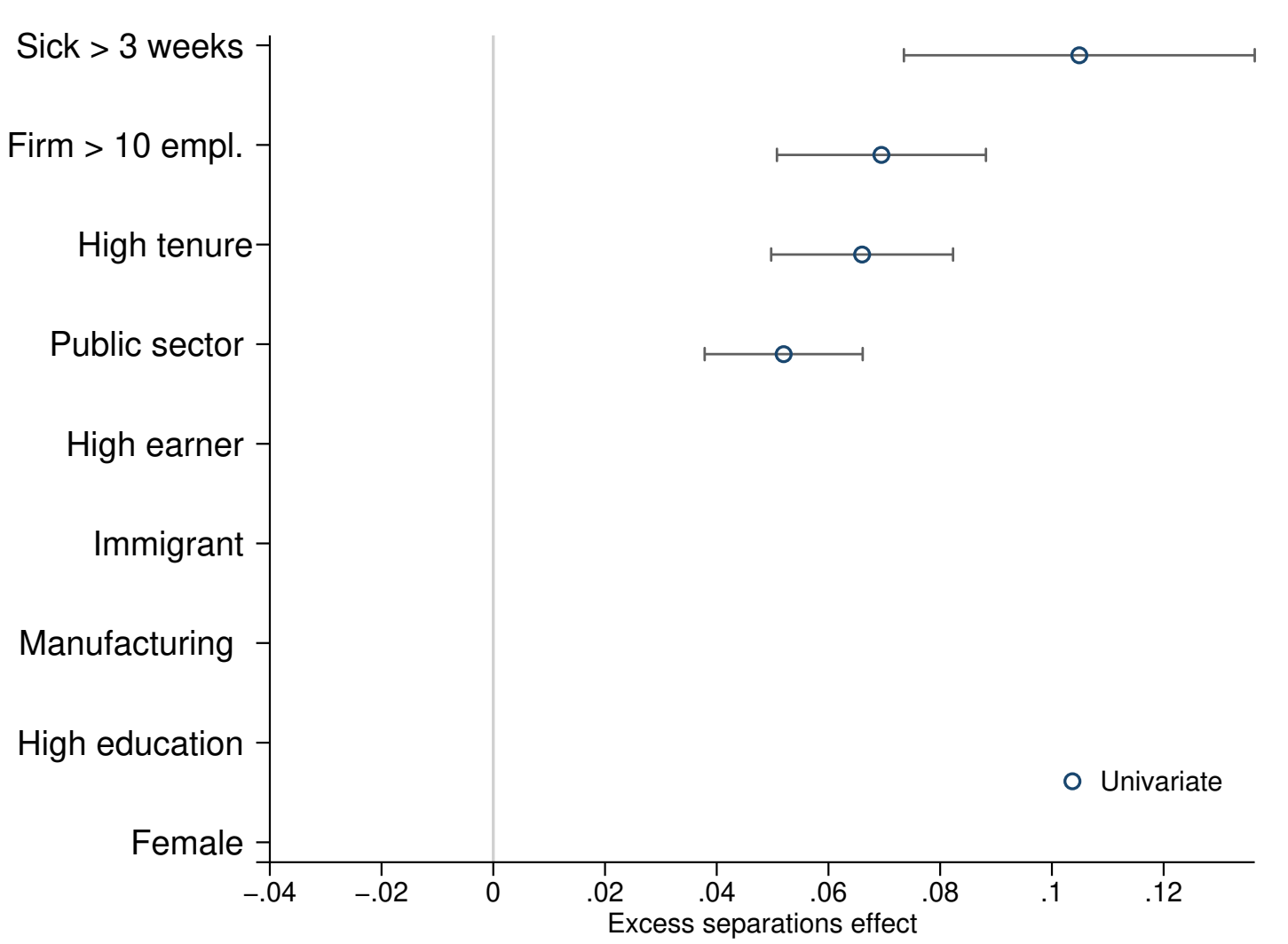
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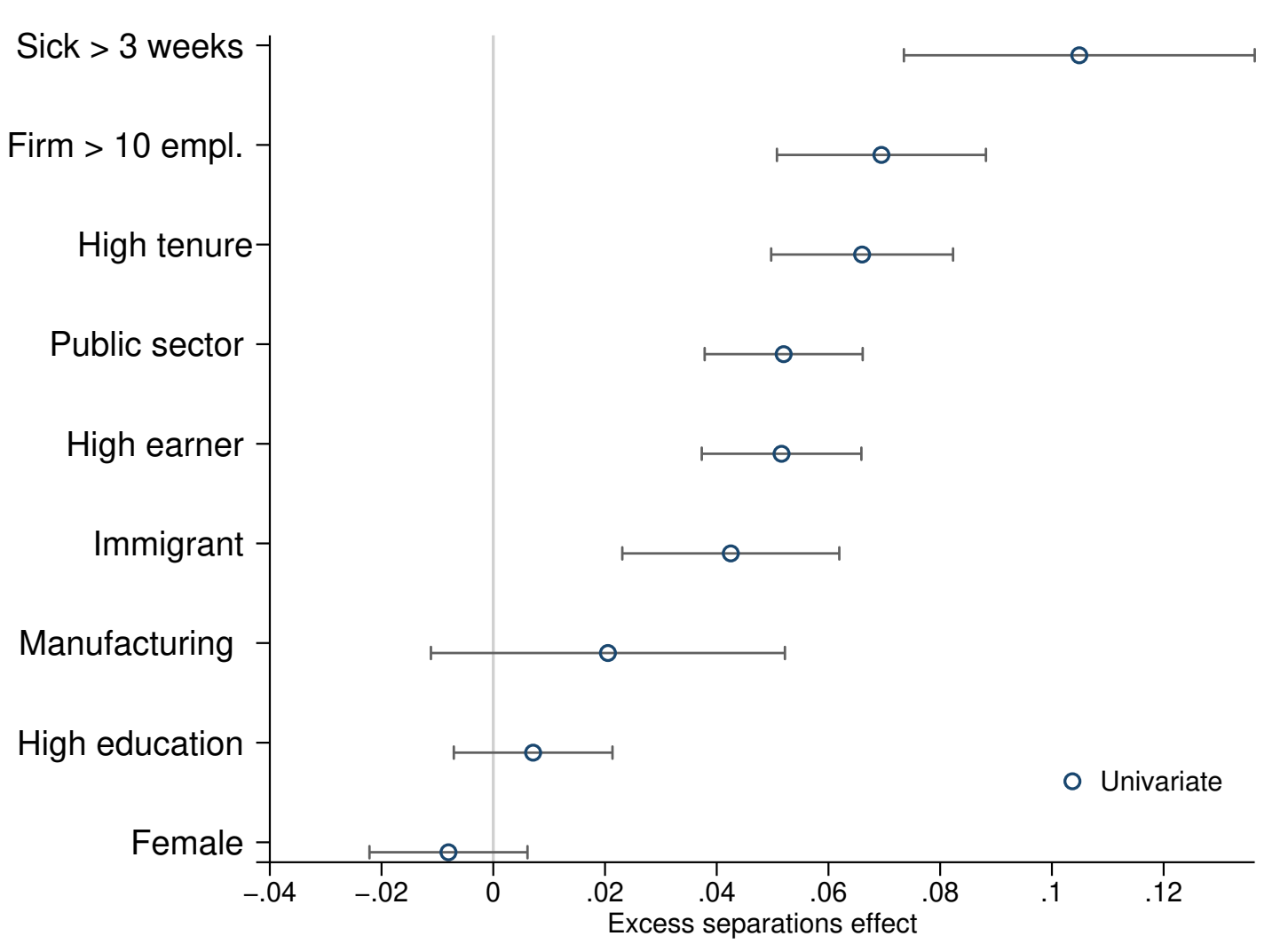
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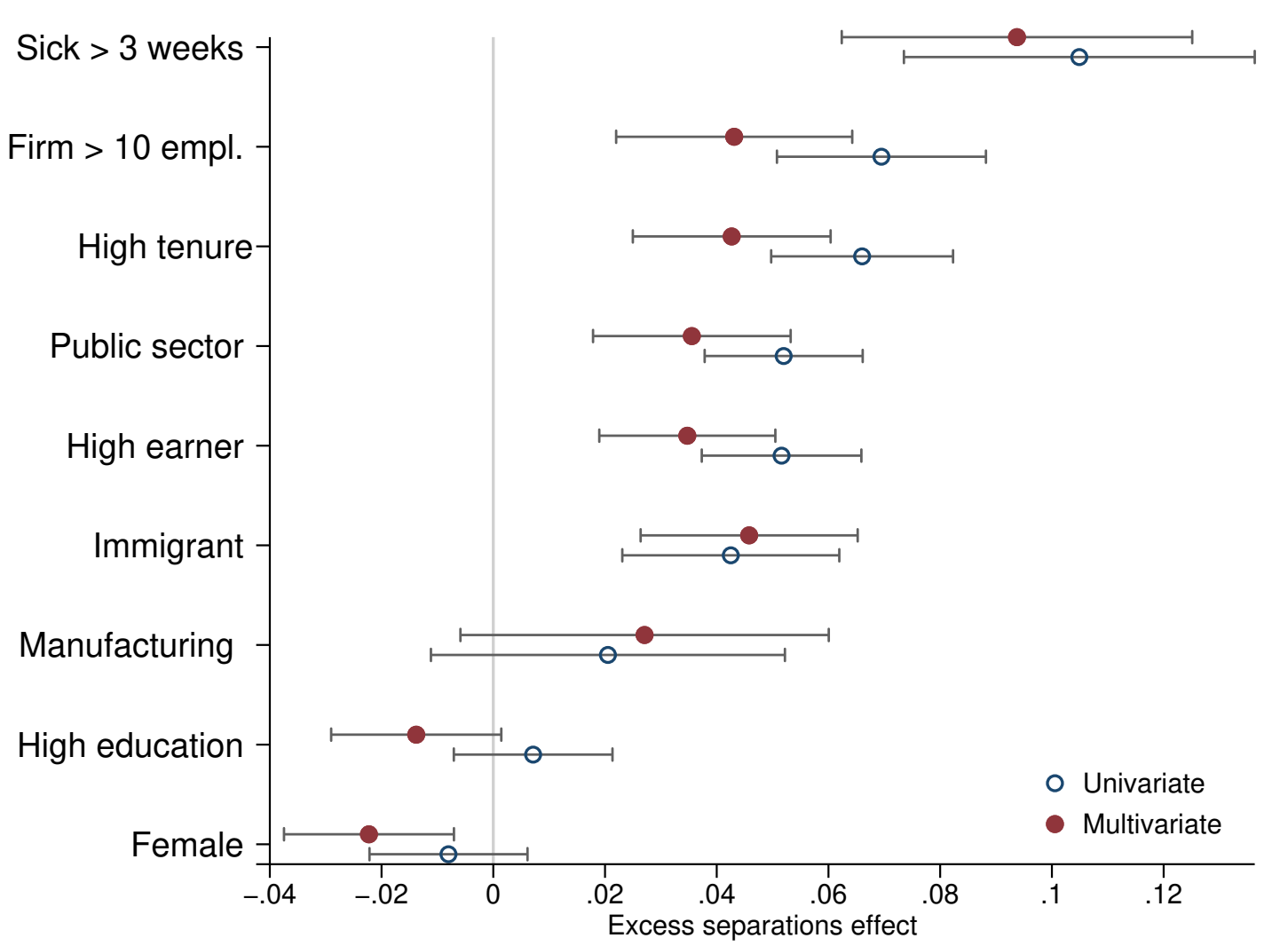
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Heterogeneity: Regression Analysis: Uni-variate



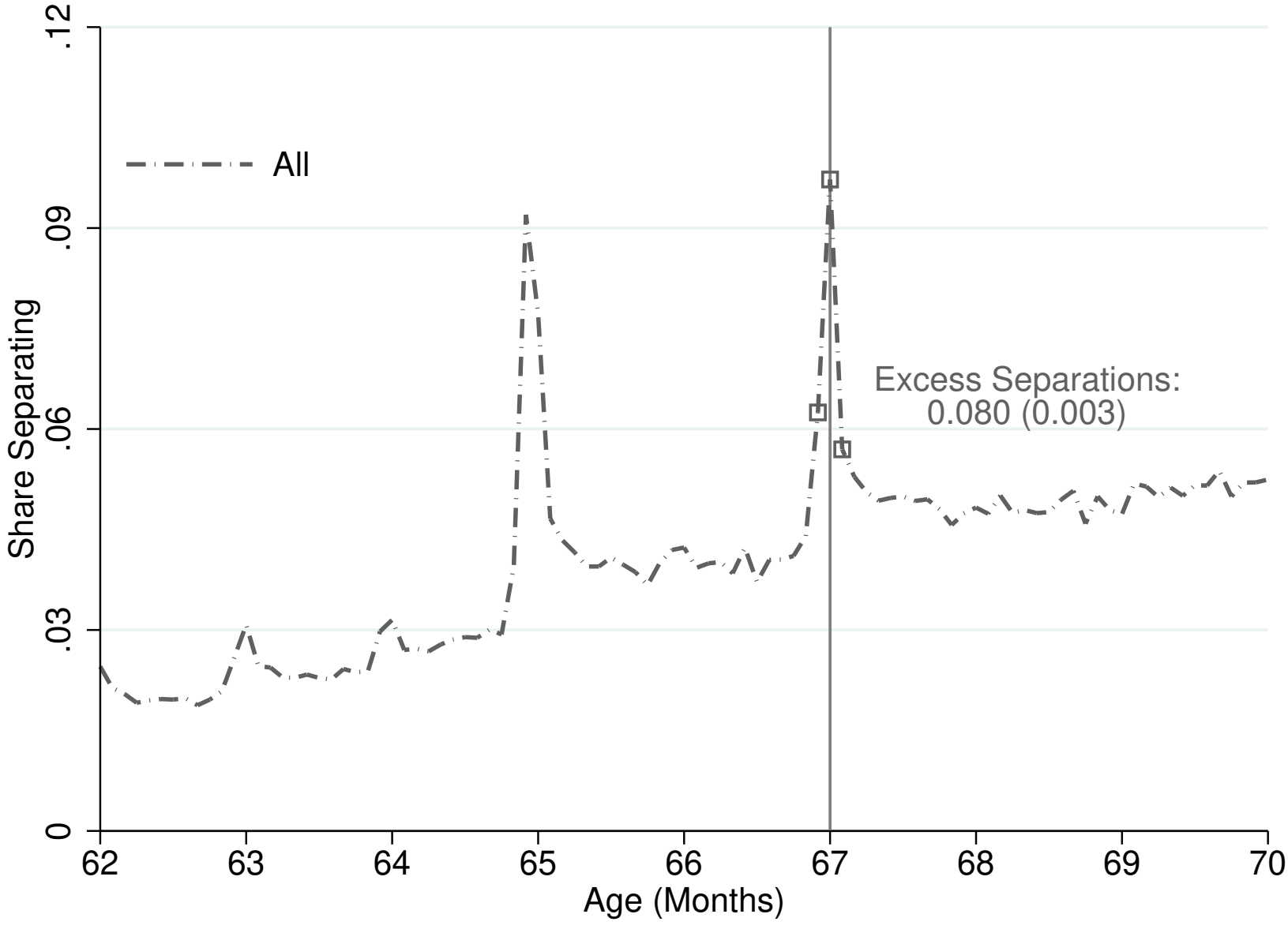
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Heterogeneity: Regression Analysis: MULTI-var

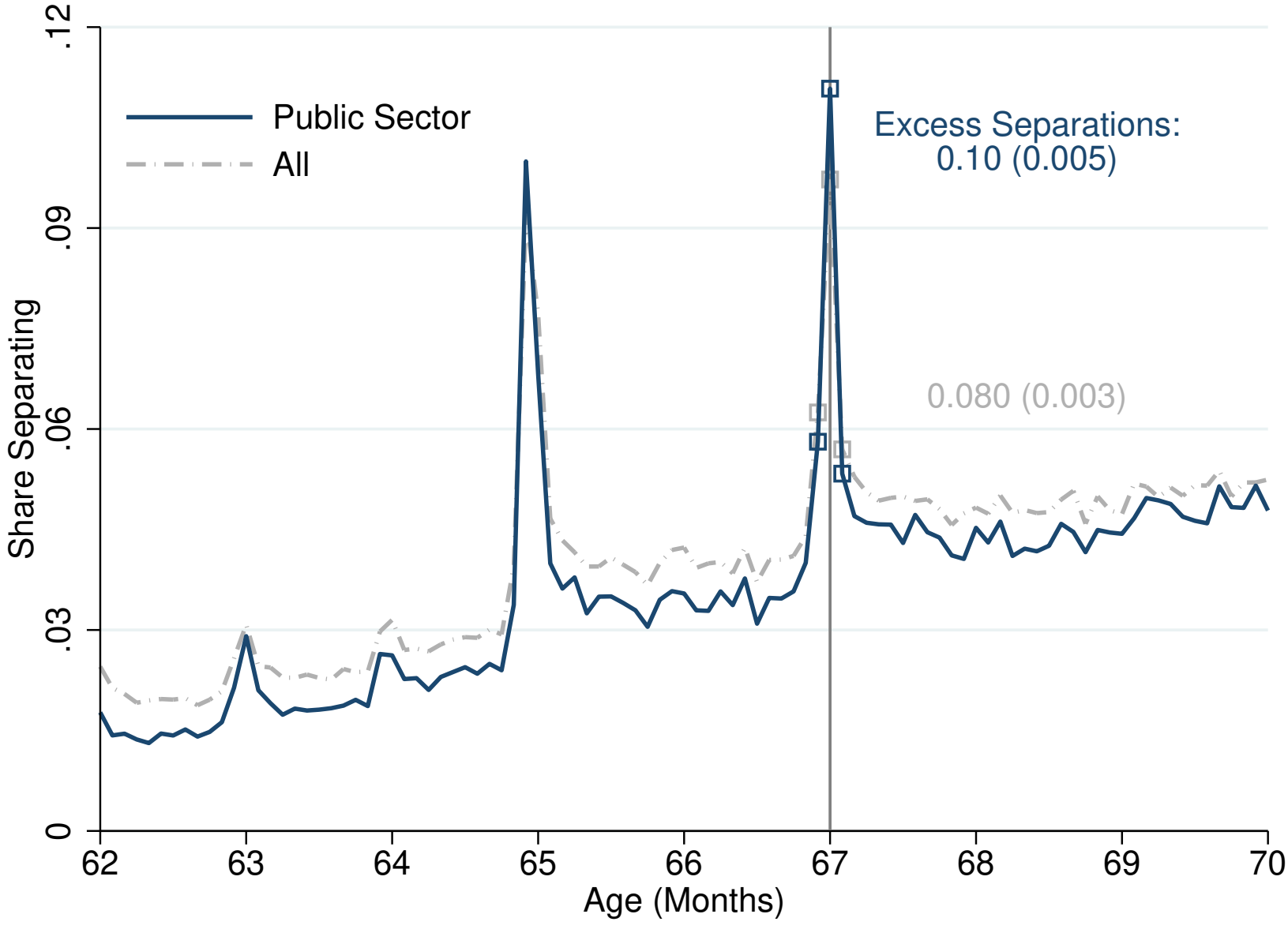


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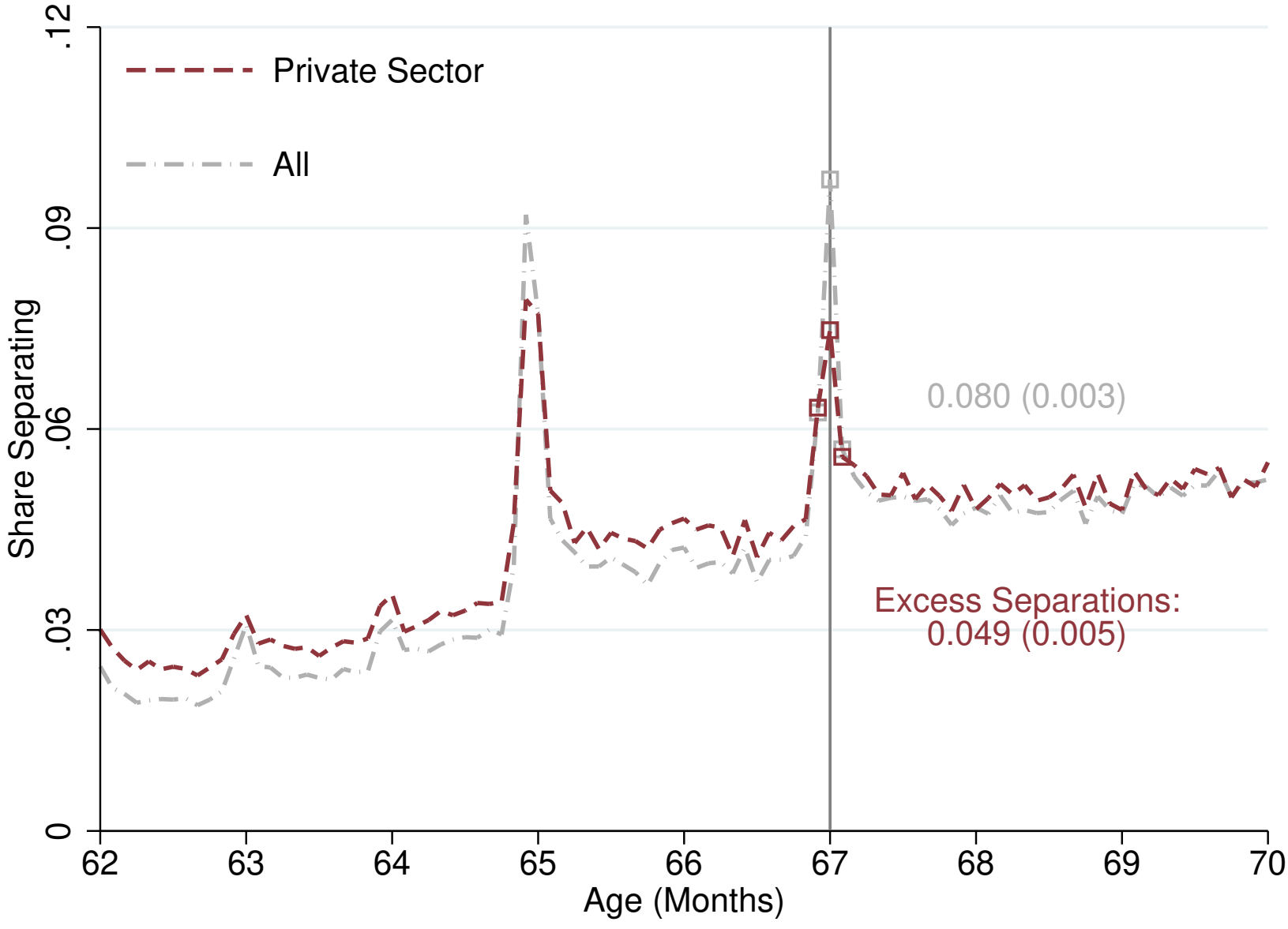
Effect Stronger in Public Sector



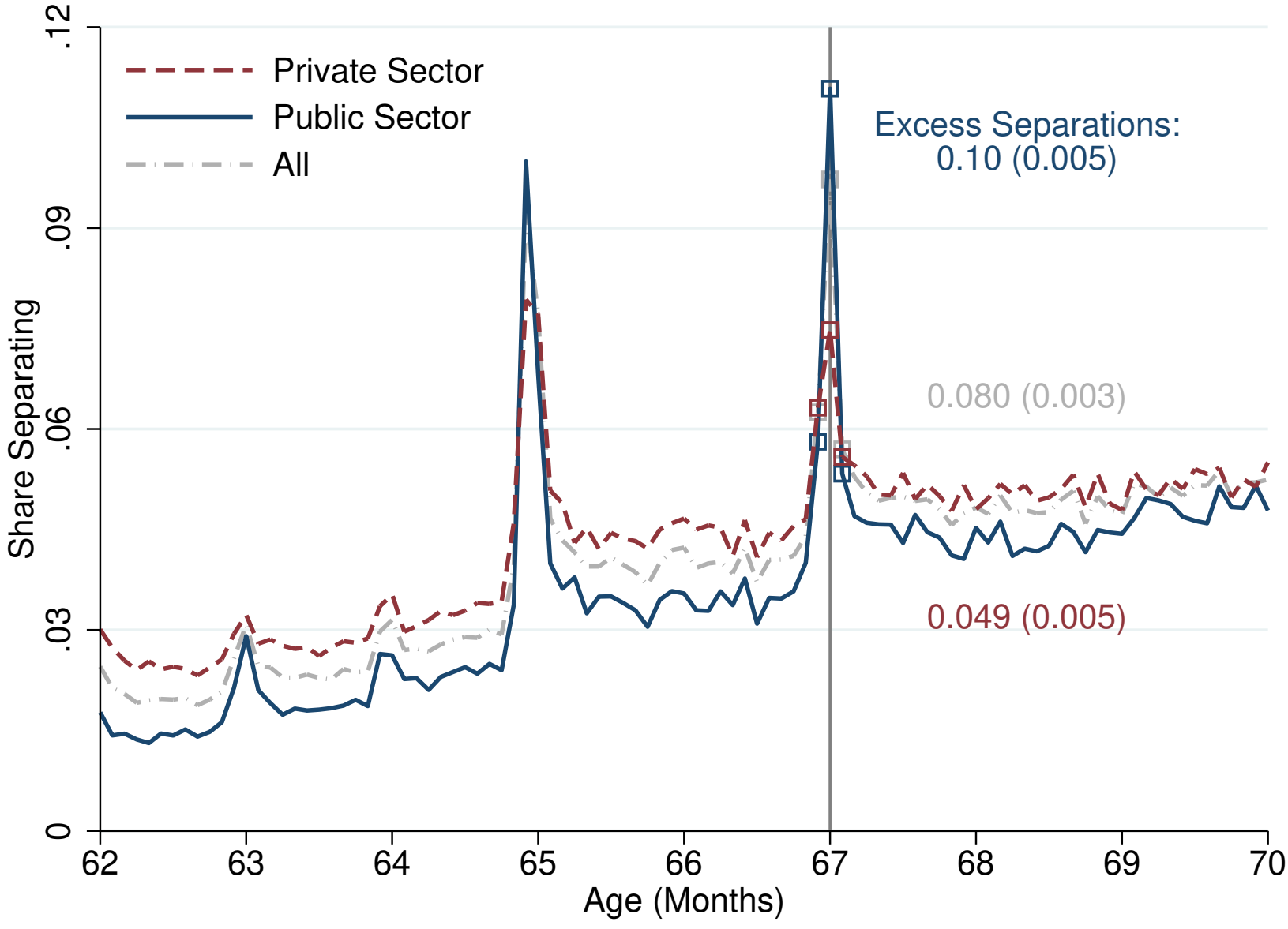
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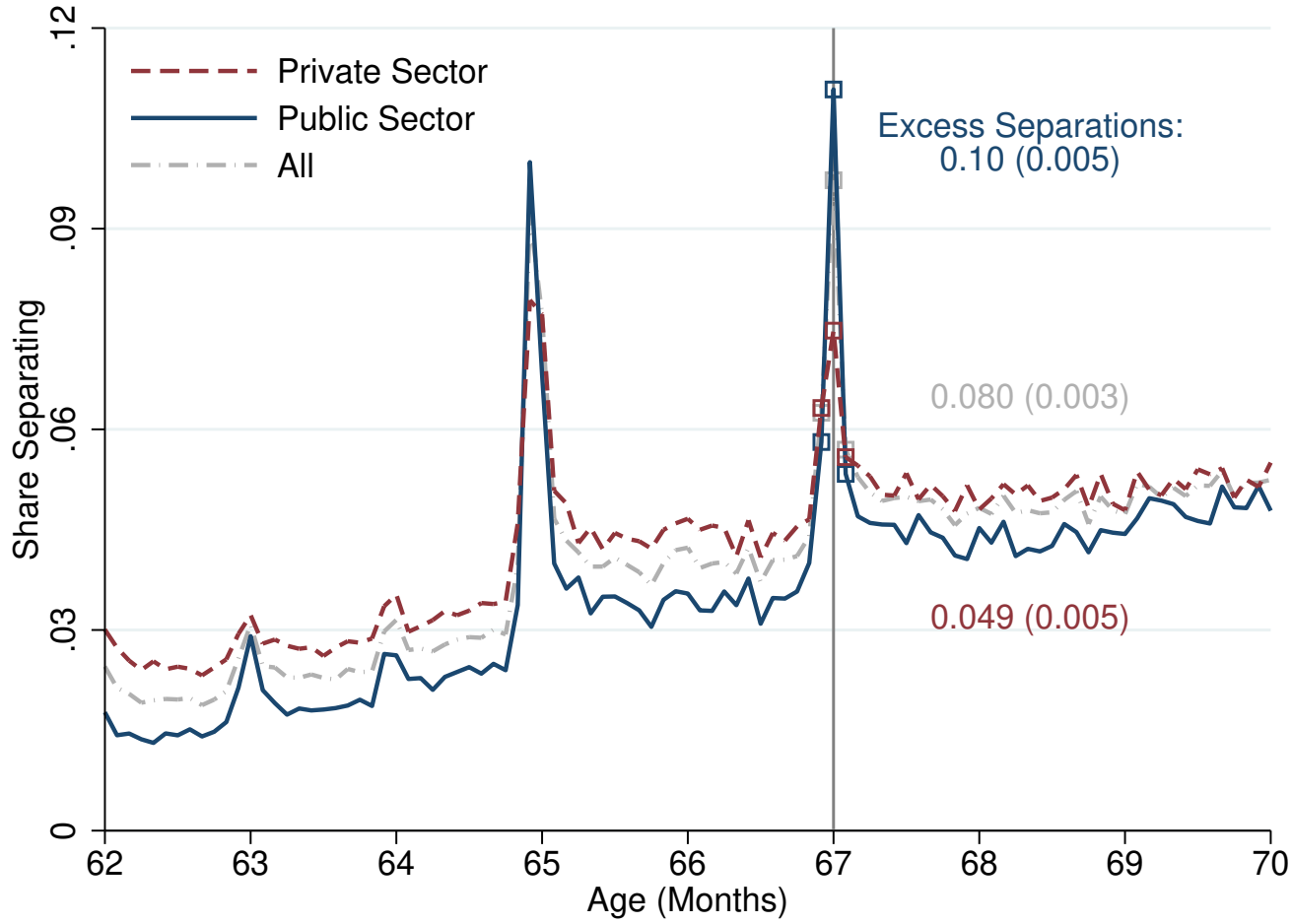
Effect Stronger in Public Sector



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)



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 disappears when EPL gets extended
- Suggestive of lower productivity (sickness proxy)
- Workers driving the spike appear happy to work in this job (presumably at a rent), but do not take/find other job post-separation
- Separations effect driving by public sector—private employers appear to get around EPL much better

Next: total labor market effects (beyond separations)

Empirical Roadmap

1. Direct effect on separations
2. Understanding the effect
3. Next: Beyond separations: effects on contracts of 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: contract adjustment among **stayers** along margins such as wages and hours

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

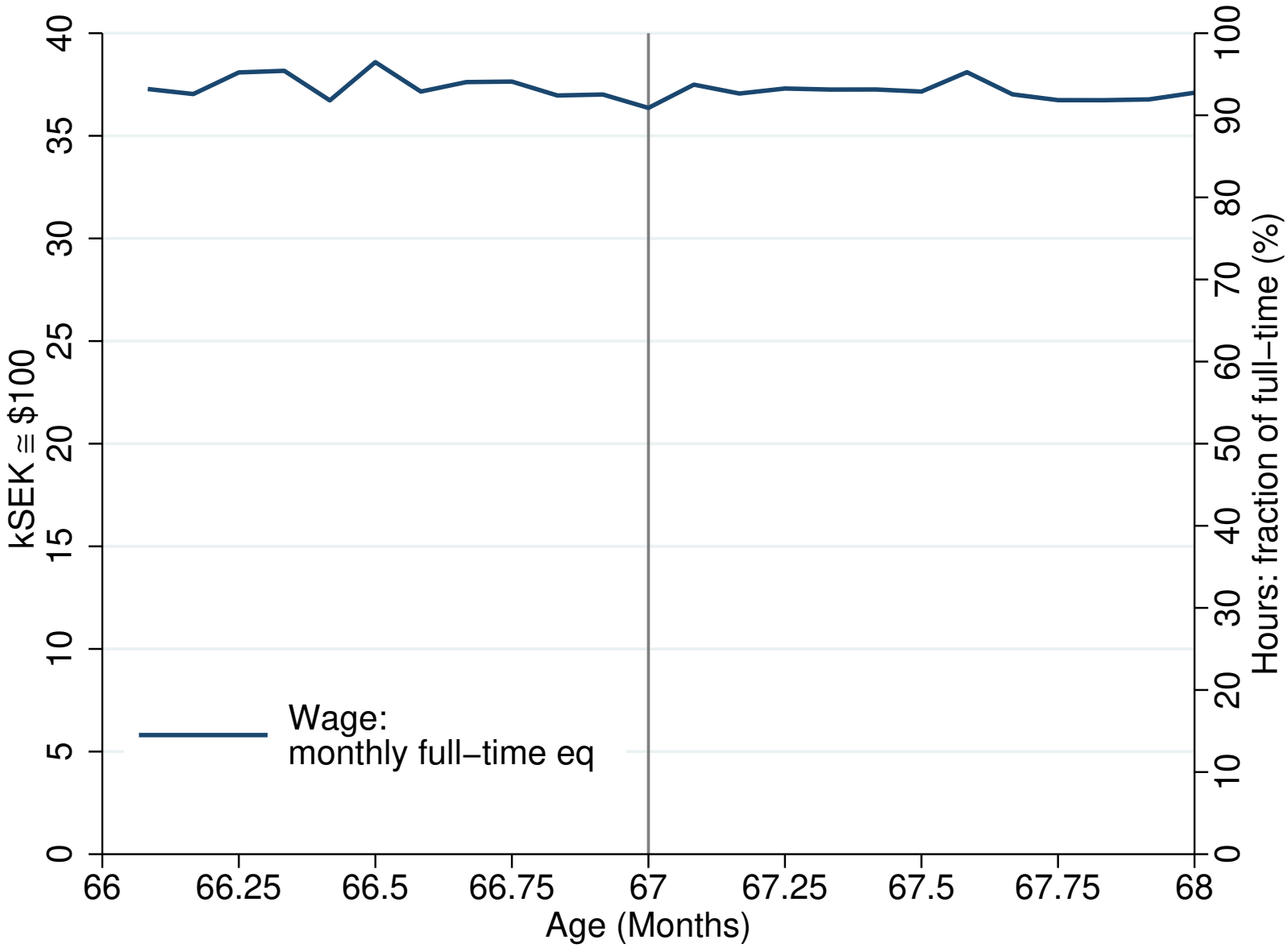
Solution: draw on **Structure of Earnings Survey** to study hours (fraction of full time) and wages; Labor Force Survey for contract type

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

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

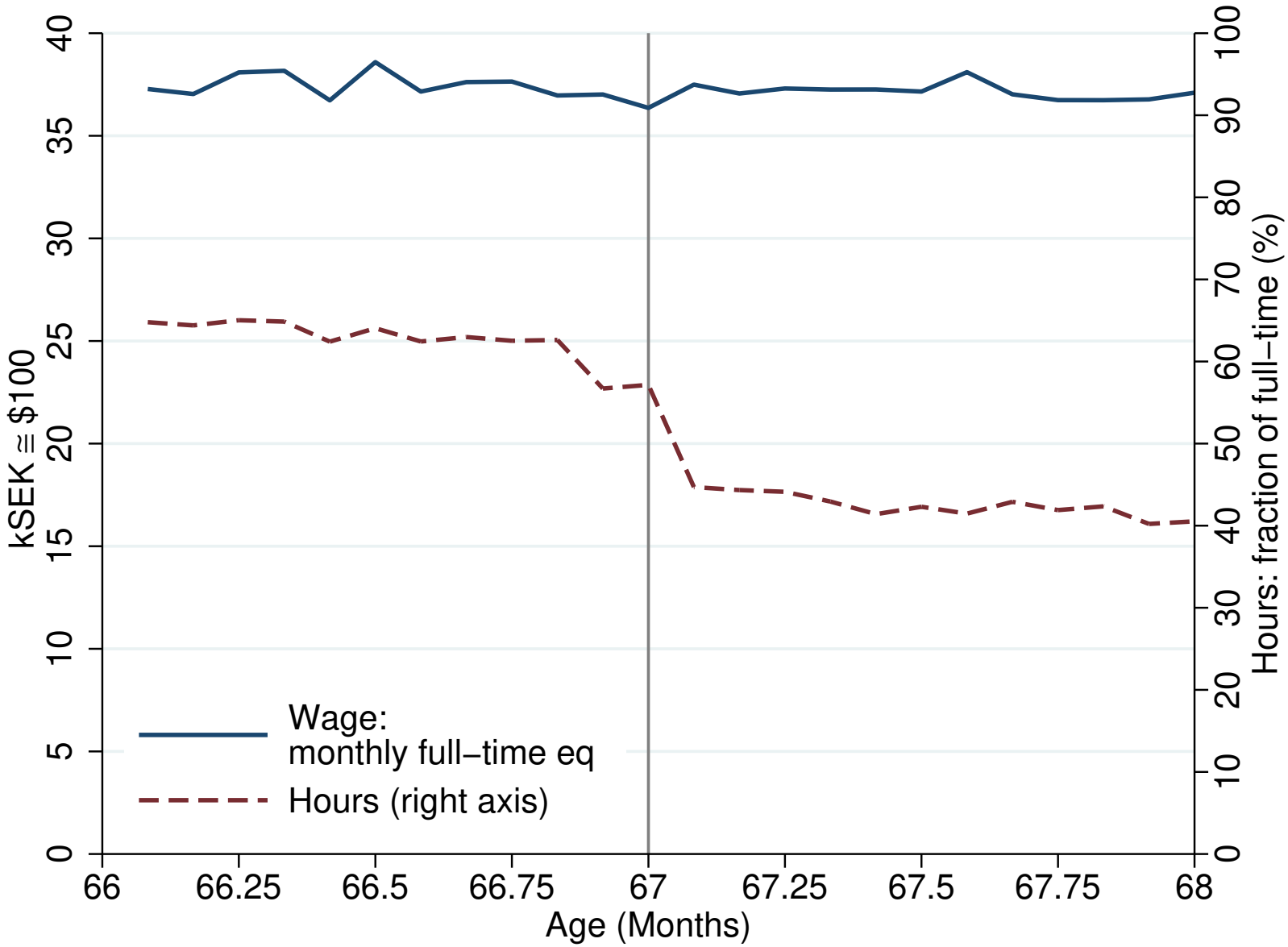
Panel Analysis of Stayers: Hours and Wage

Structure Earnings Survey, Public Sector



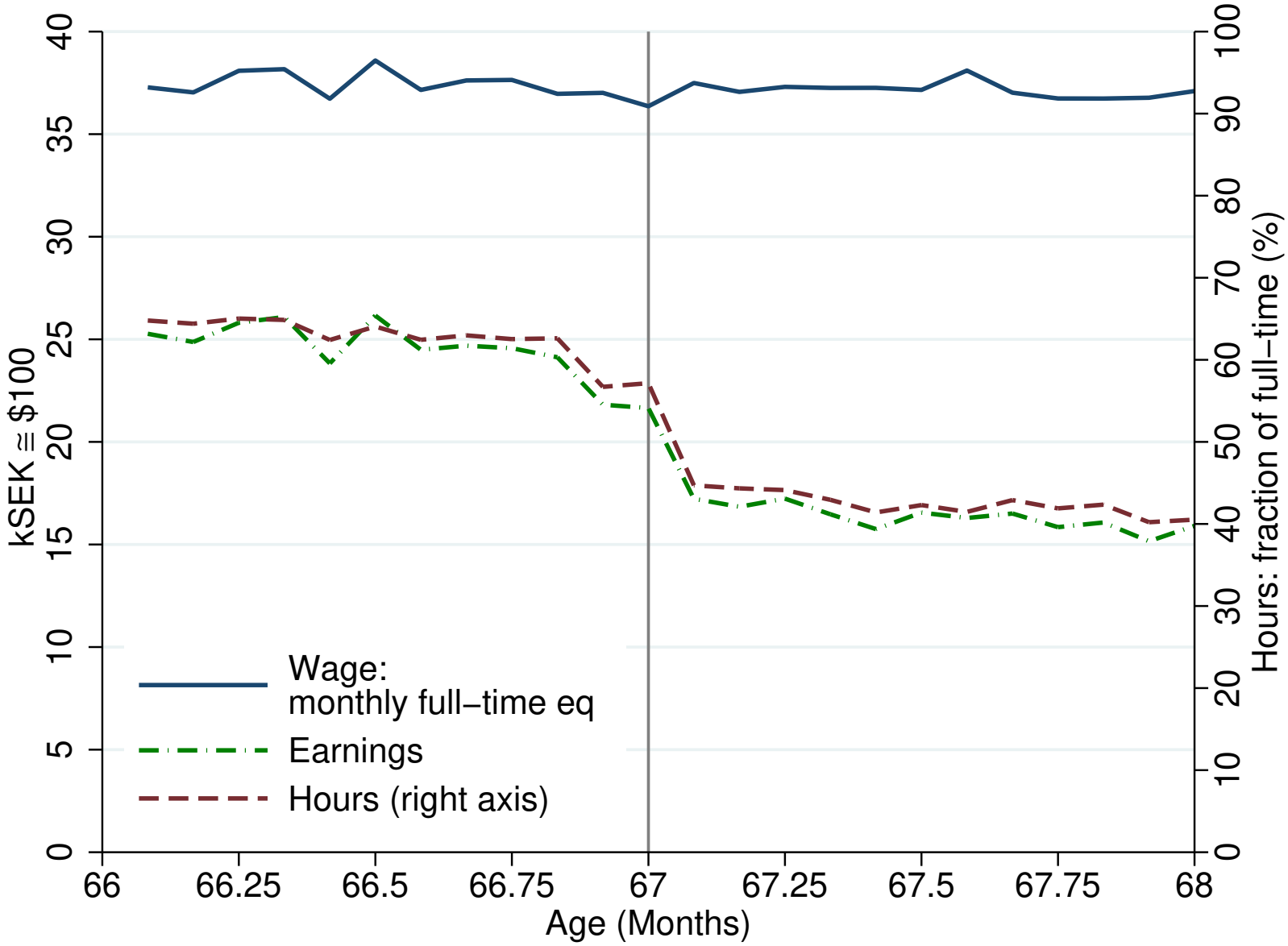
Panel Analysis of Stayers: Hours and Wage

Structure Earnings Survey, Public Sector



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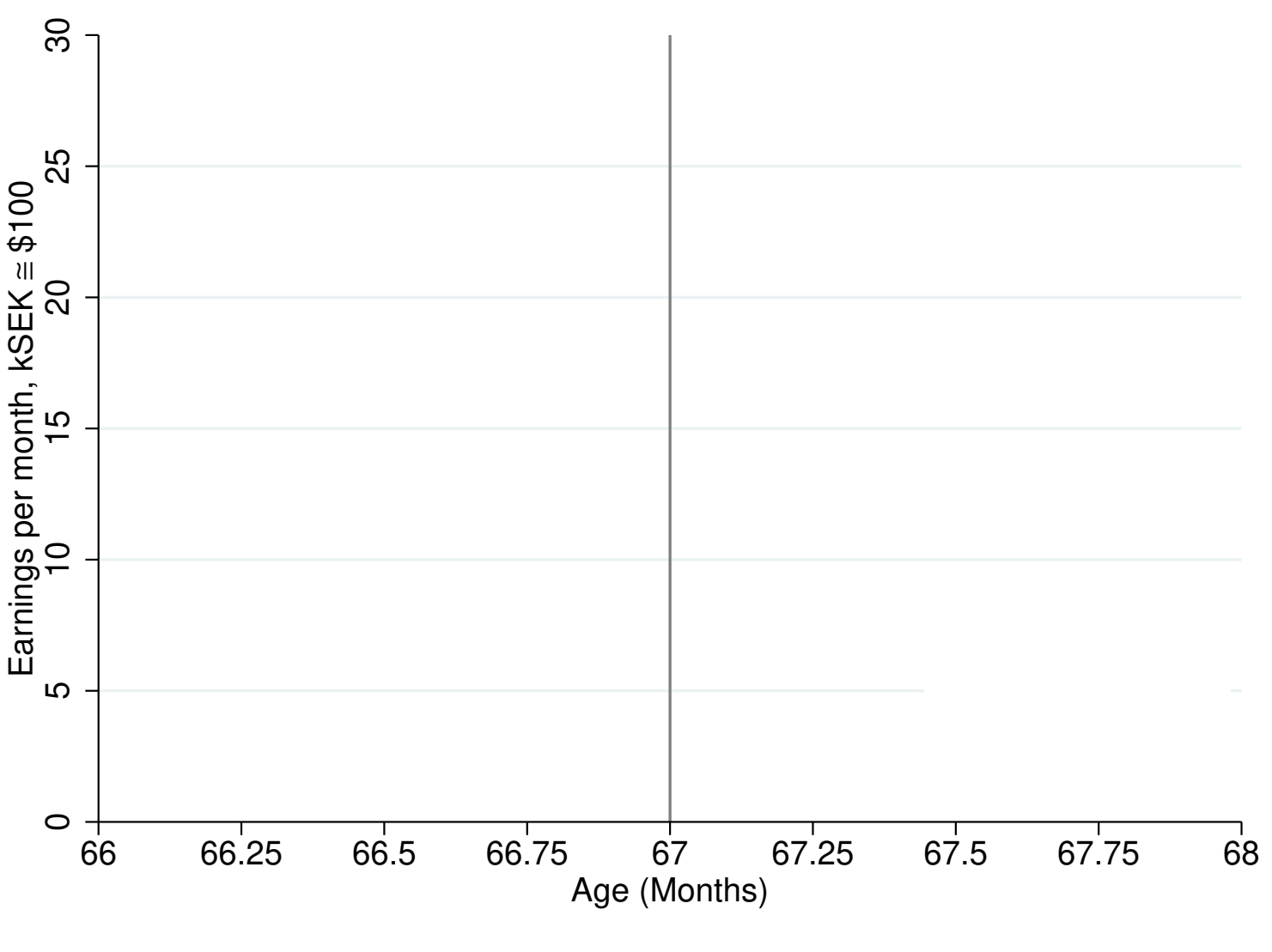
Hours, Wage, Earnings Structure Earnings Survey, Public Sector



Panel Analysis of Stayers:

Earnings

Now Back to Admin Data, incl Private

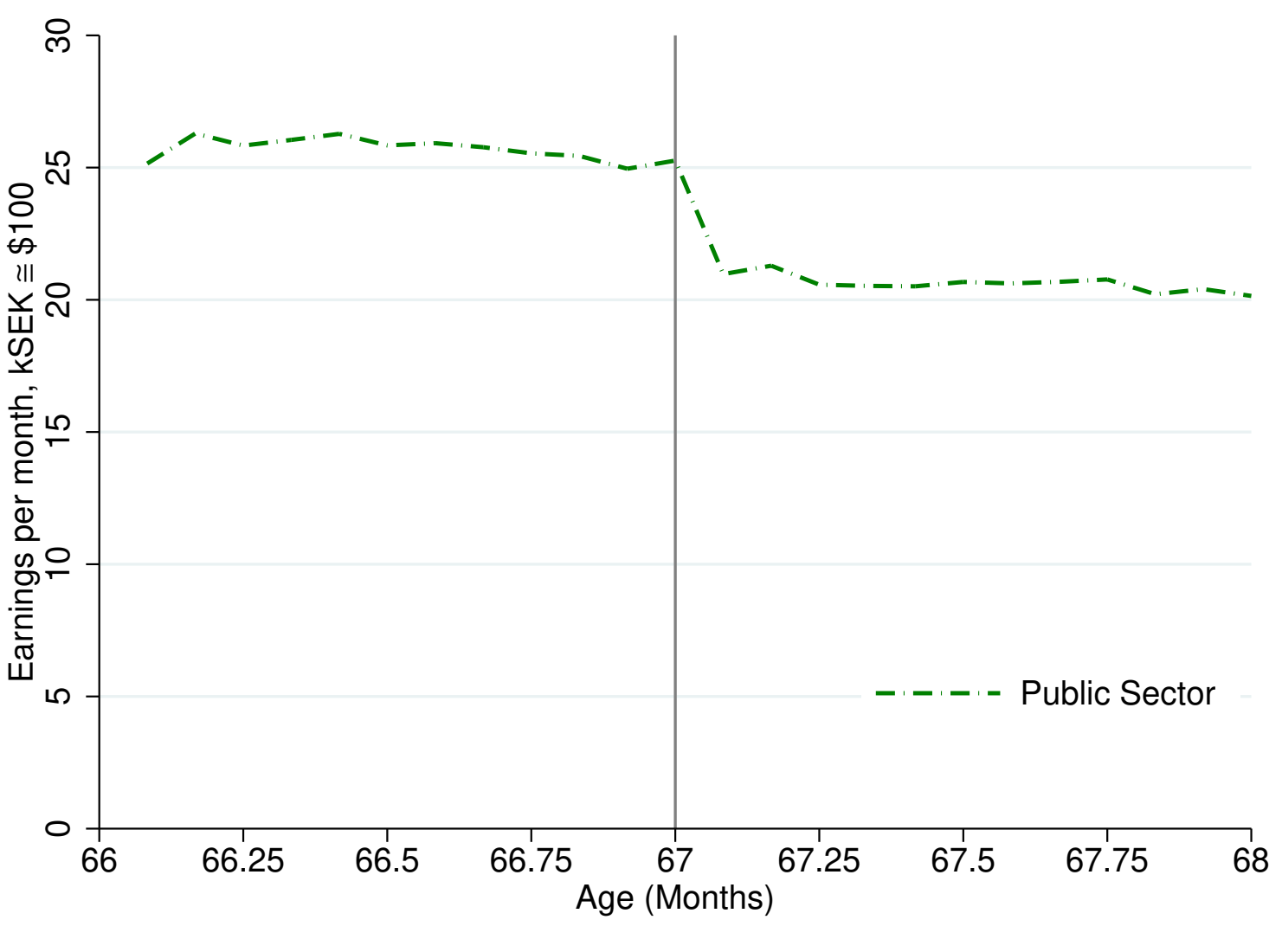


Stayers continuously employed with same employer between age 66 and 67 and 4 months; starting 67.5, only stayers' outcomes.

Panel Analysis of Stayers:

Earnings

Now Back to Admin Data, incl Private

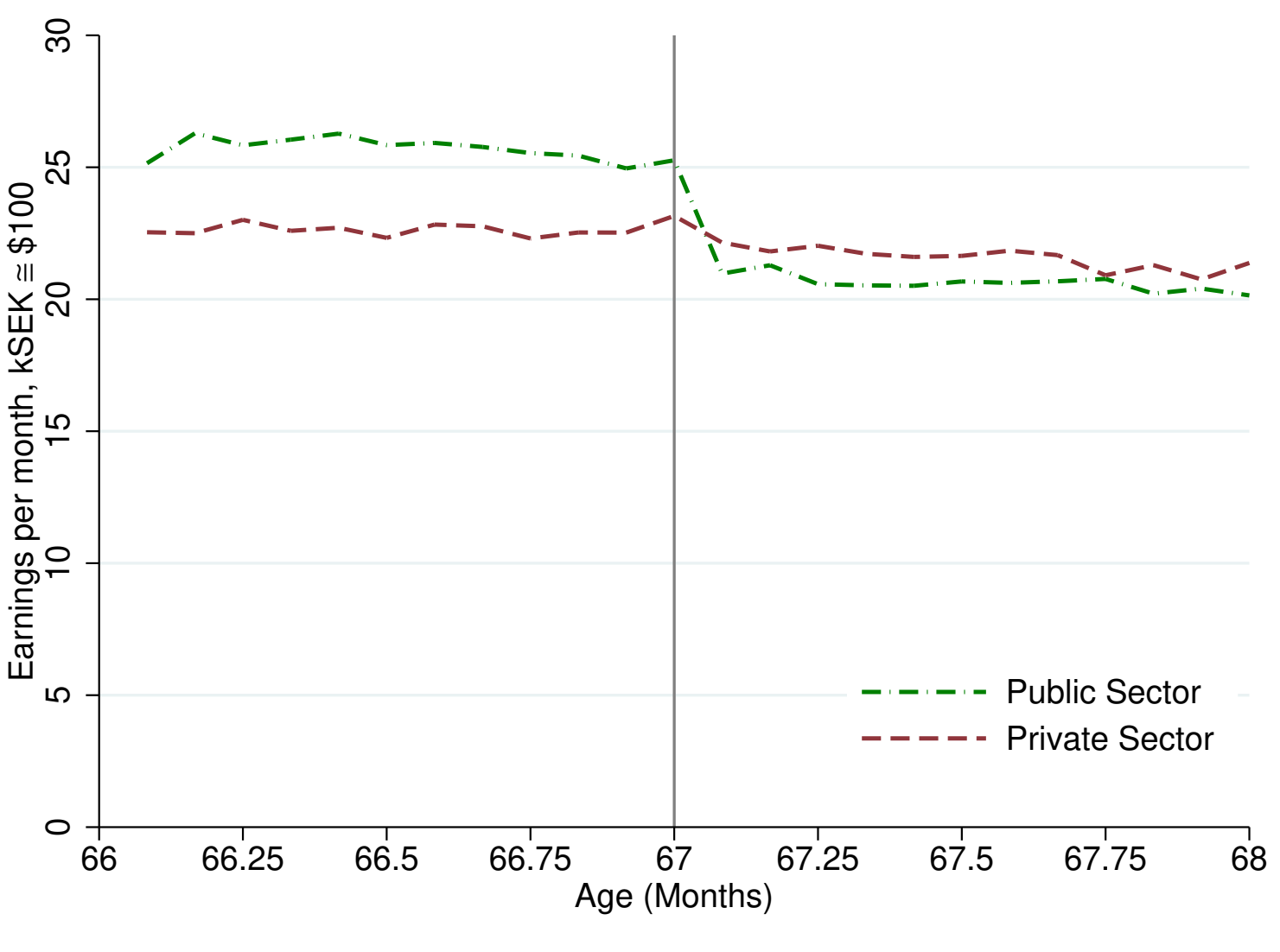


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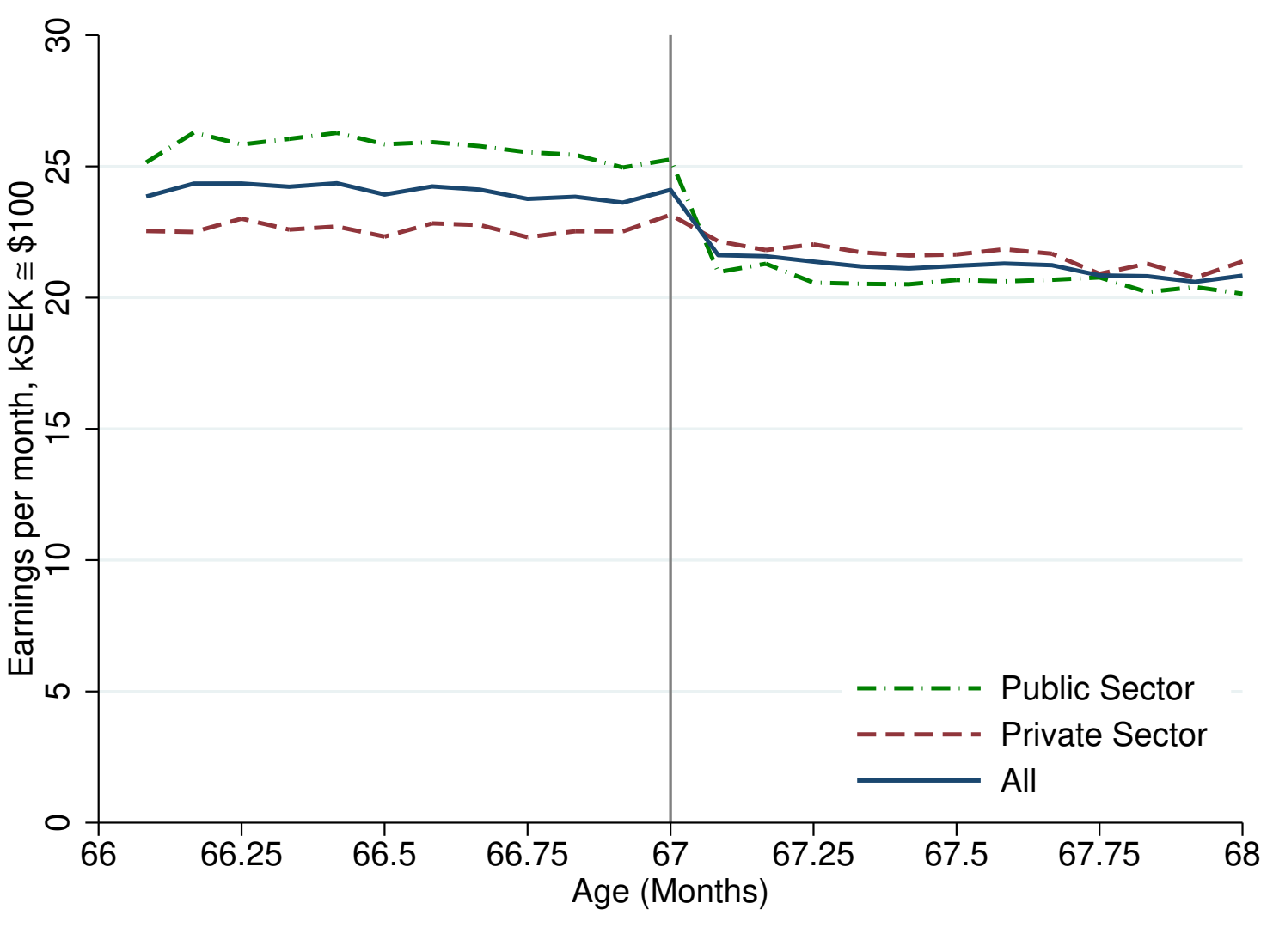


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Panel Analysis of Stayers:

Earnings

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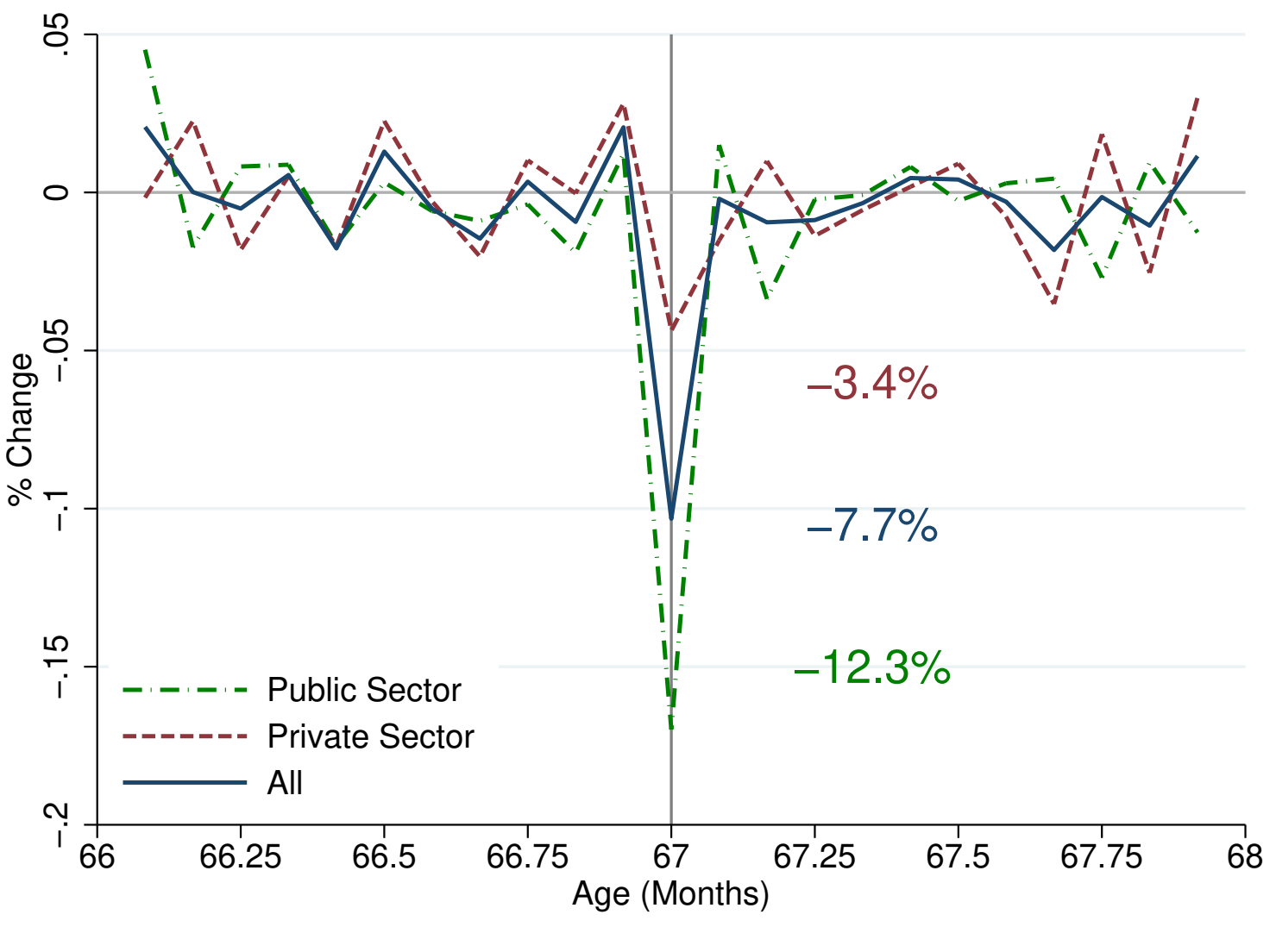


Stayers continuously employed with same employer between age 66 and 67 and 4 months; starting 67.5, only stayers' outcomes.

Panel Analysis of Stayers:

Earnings Growth

Now Back to Admin Data, incl Private

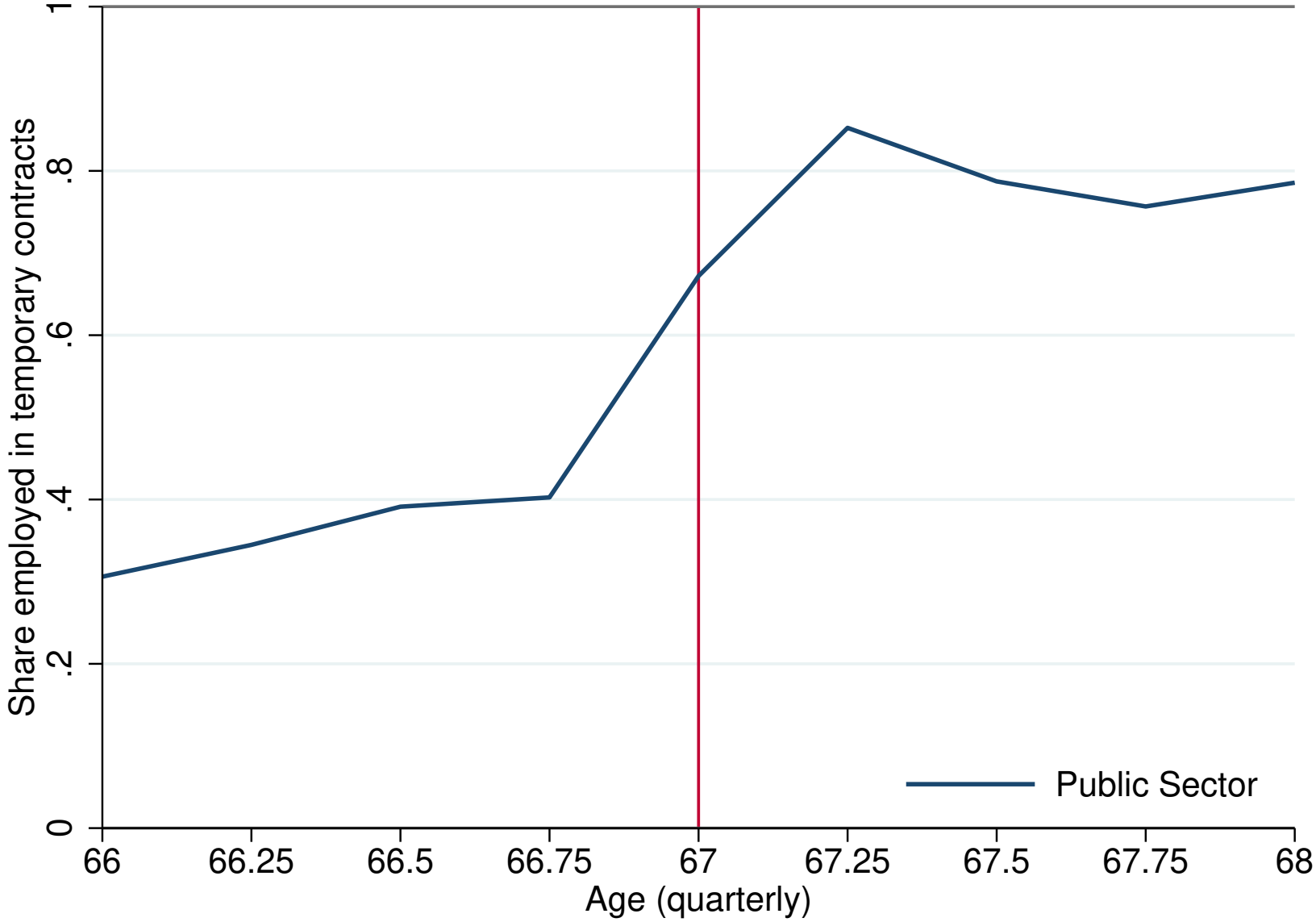


Stayers continuously employed with same employer between age 66 and 67 and 4 months; starting 67.5, only stayers' outcomes.

Panel Analysis of Stayers:

Temp Contracts

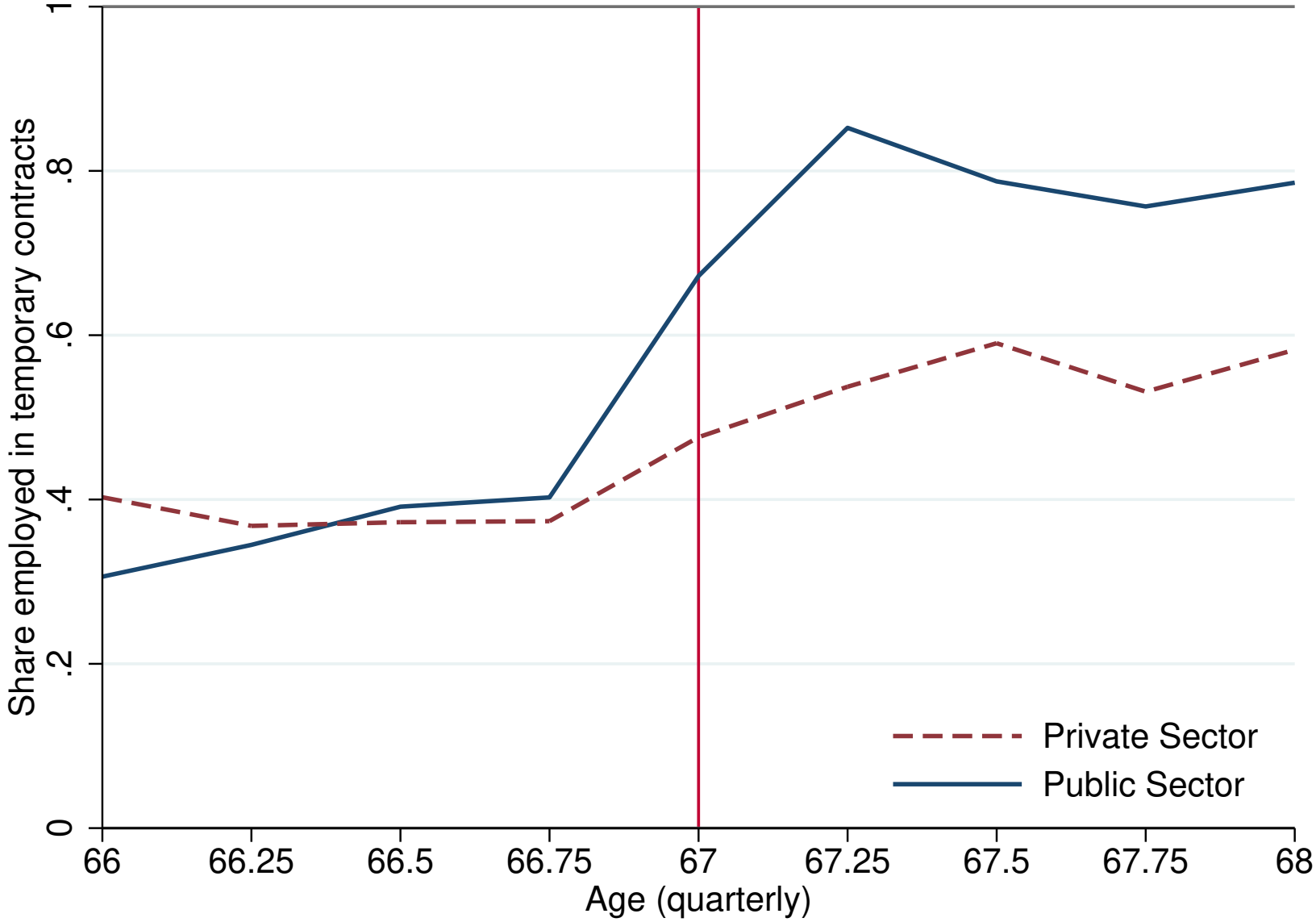
Labor Force Survey



Panel Analysis of Stayers:

Temp Contracts

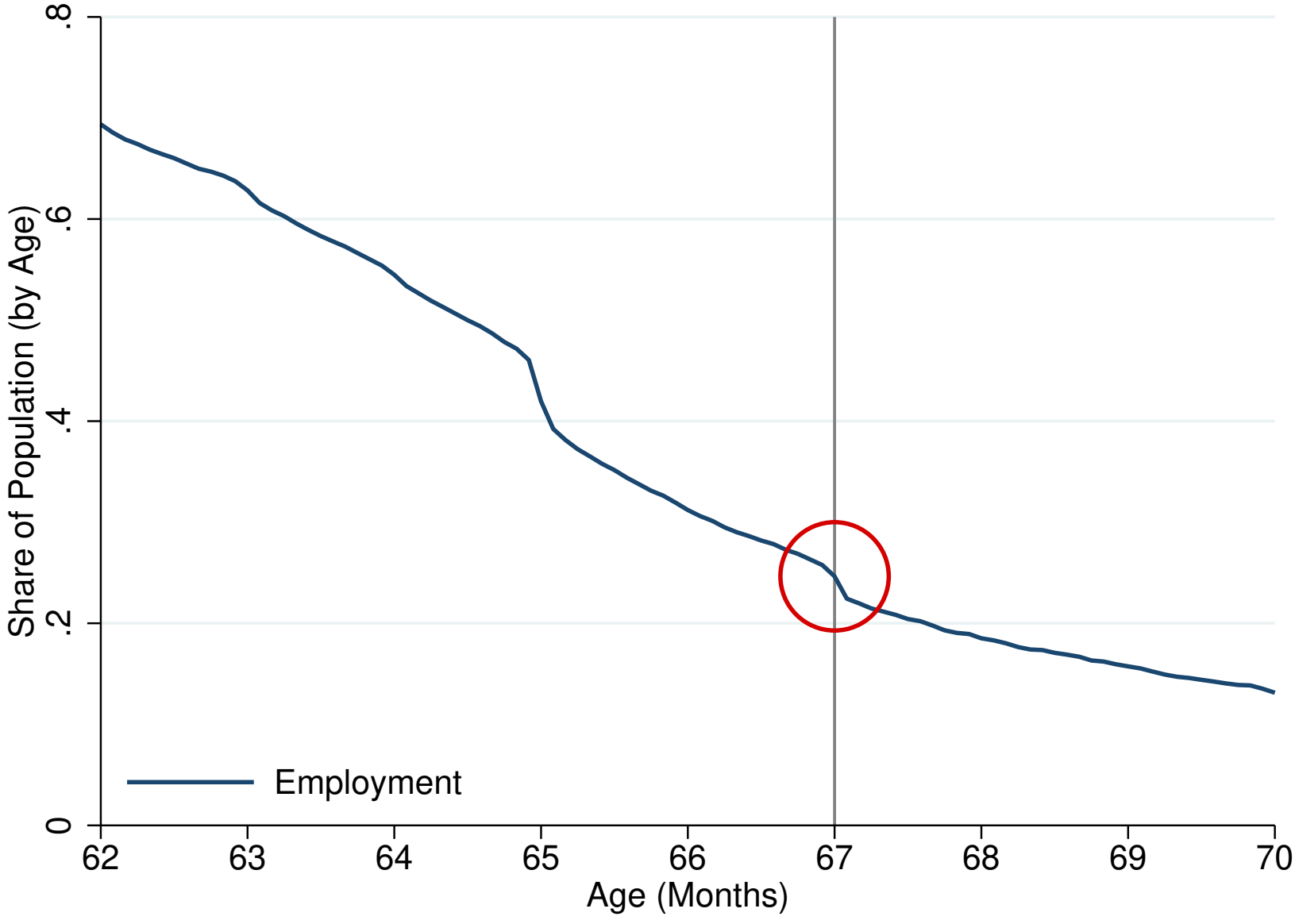
Labor Force Survey



Empirical Roadmap

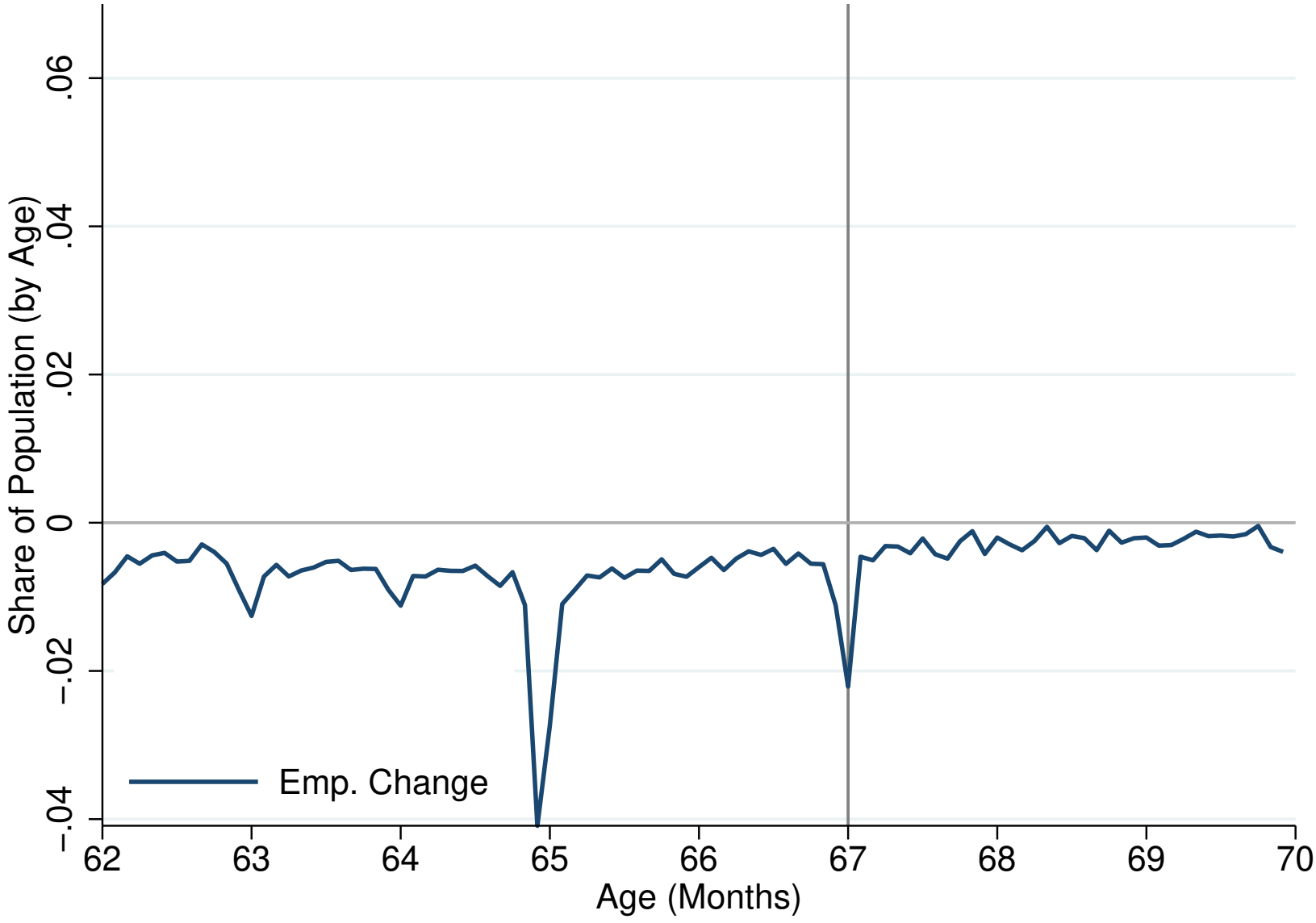
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Total Effect: Employment-Population Ratio in 2019



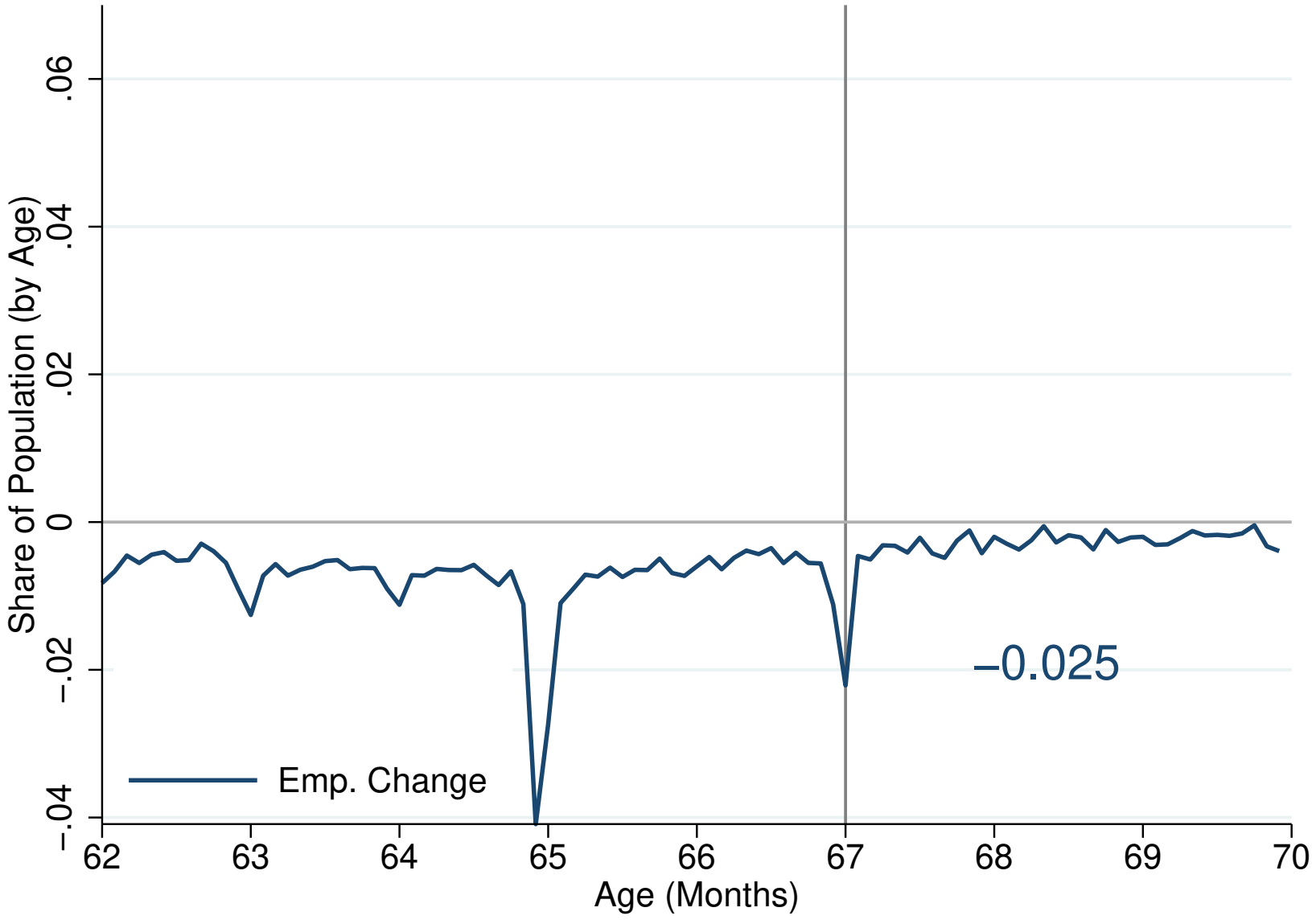
E-Pop: Change (Monthly)

ΔEmp



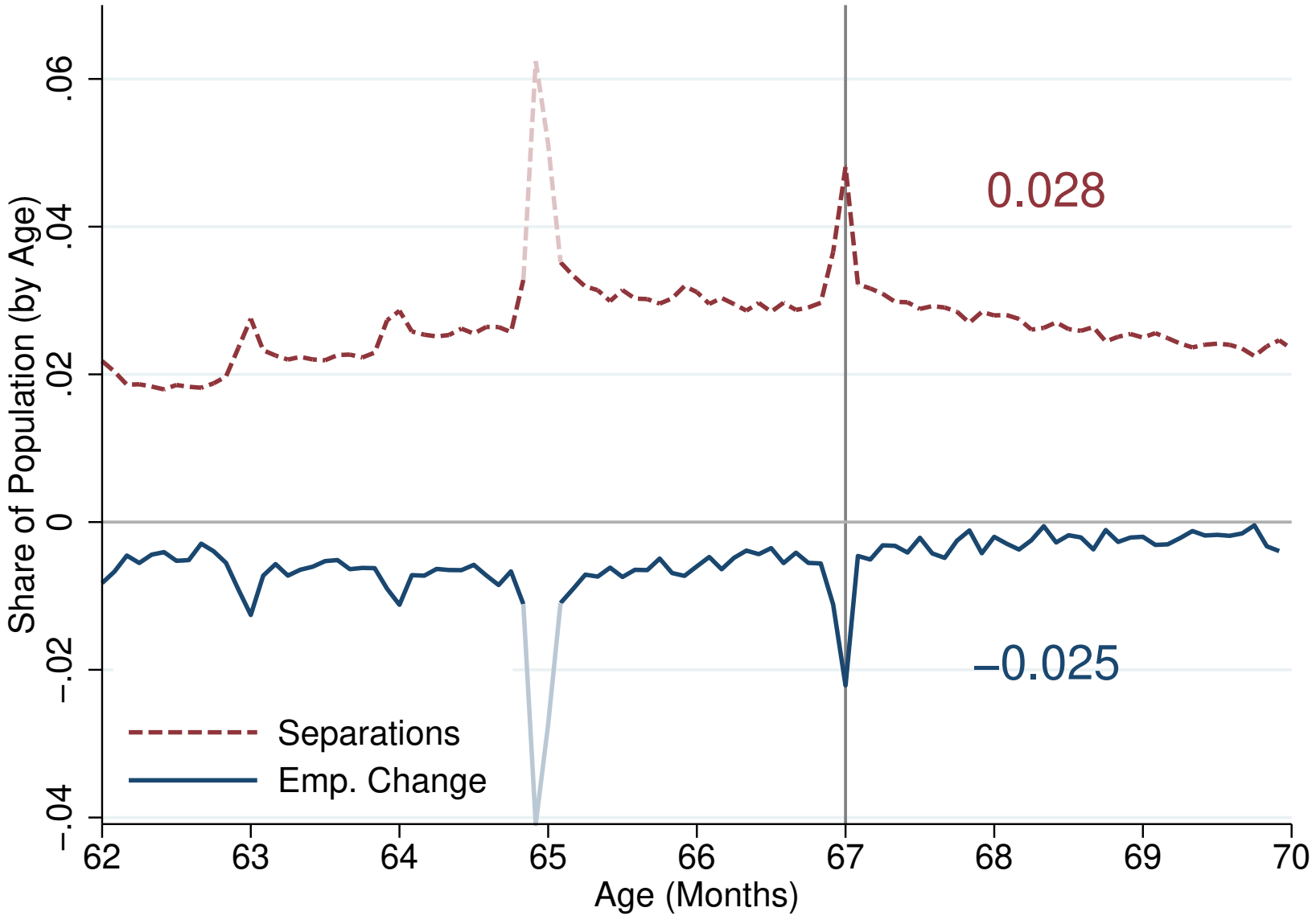
E-Pop: Change Effect

ΔEmp



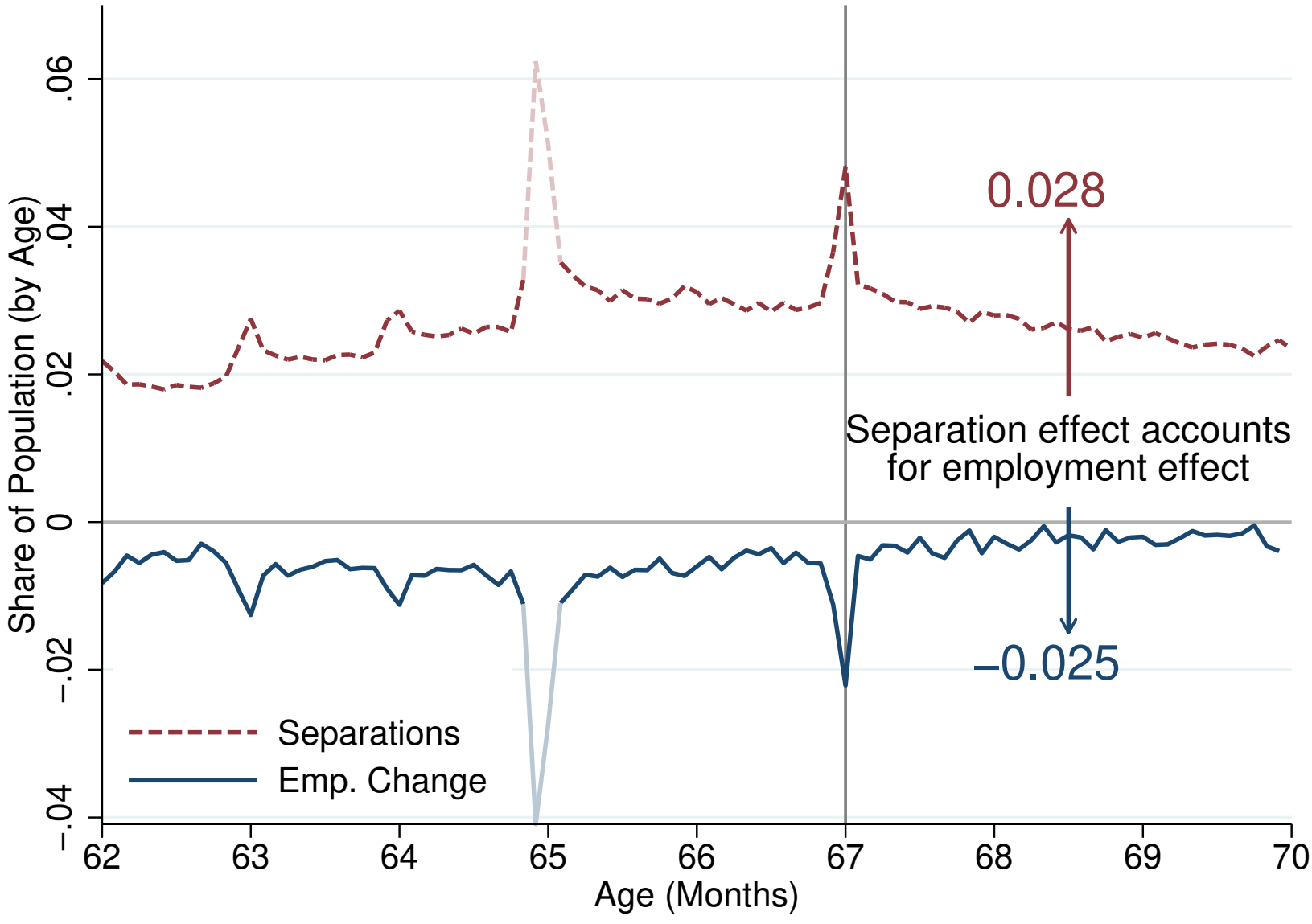
E-Pop: Change Decomp

ΔEmp = Sep's – Hires



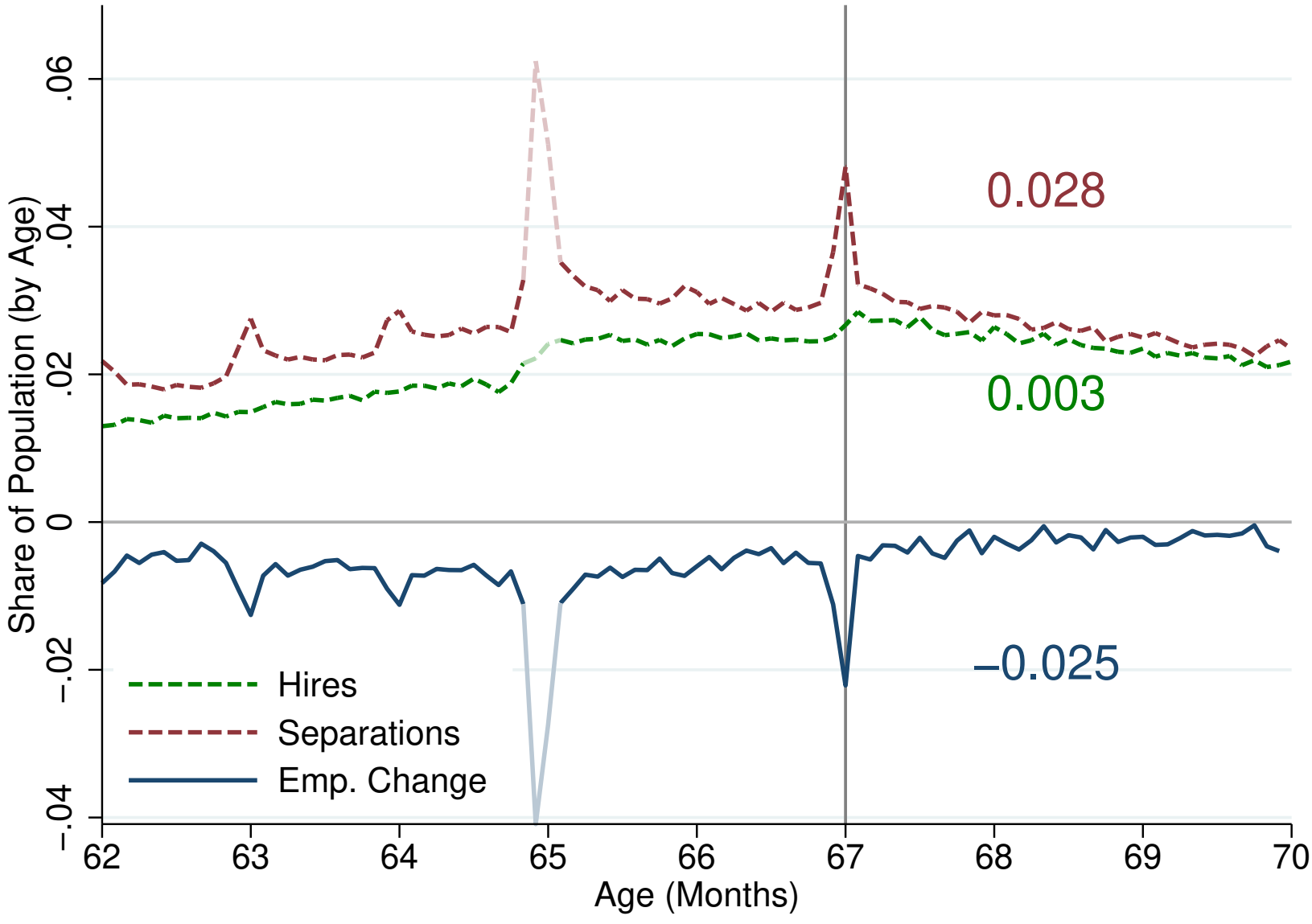
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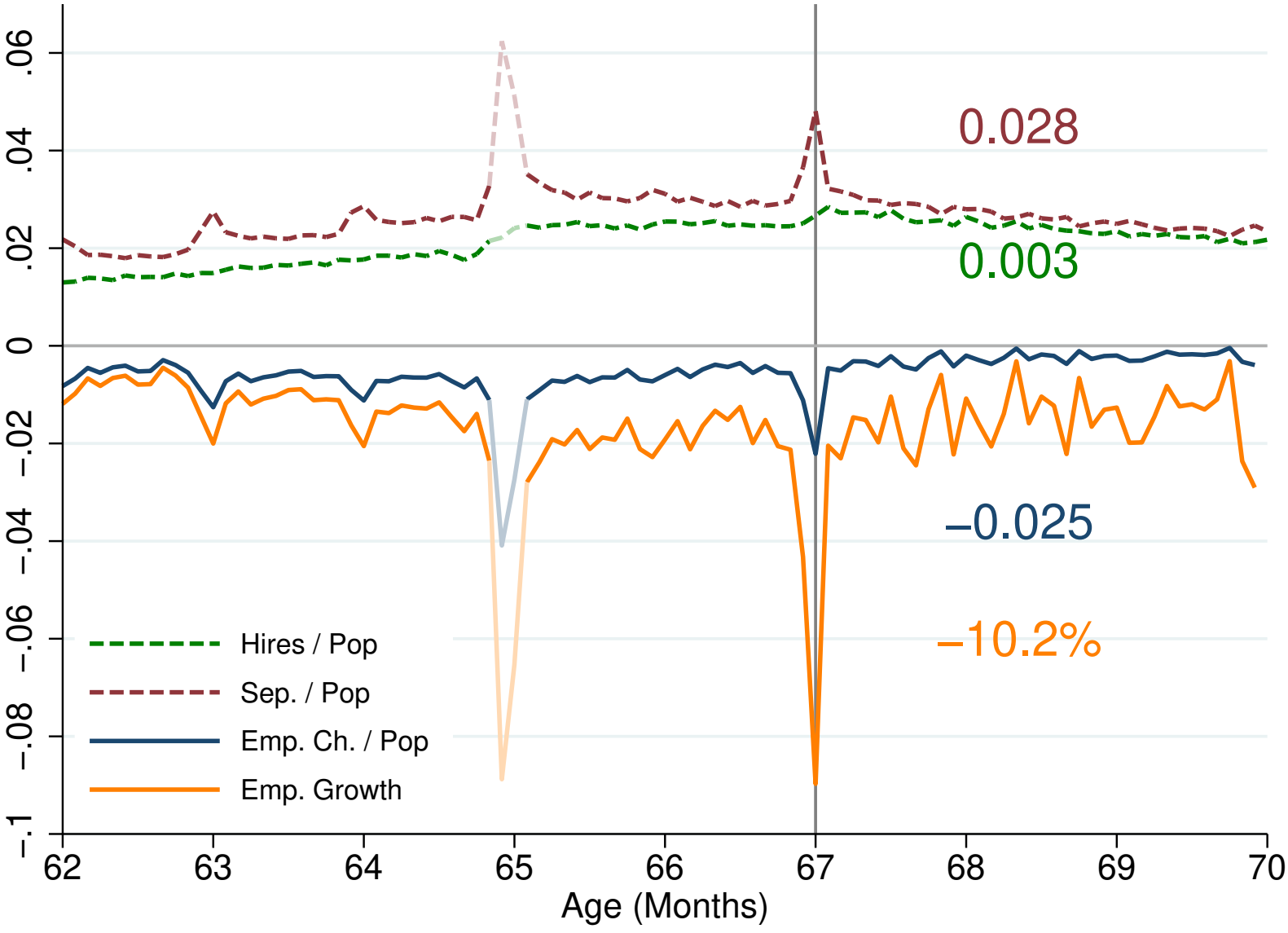


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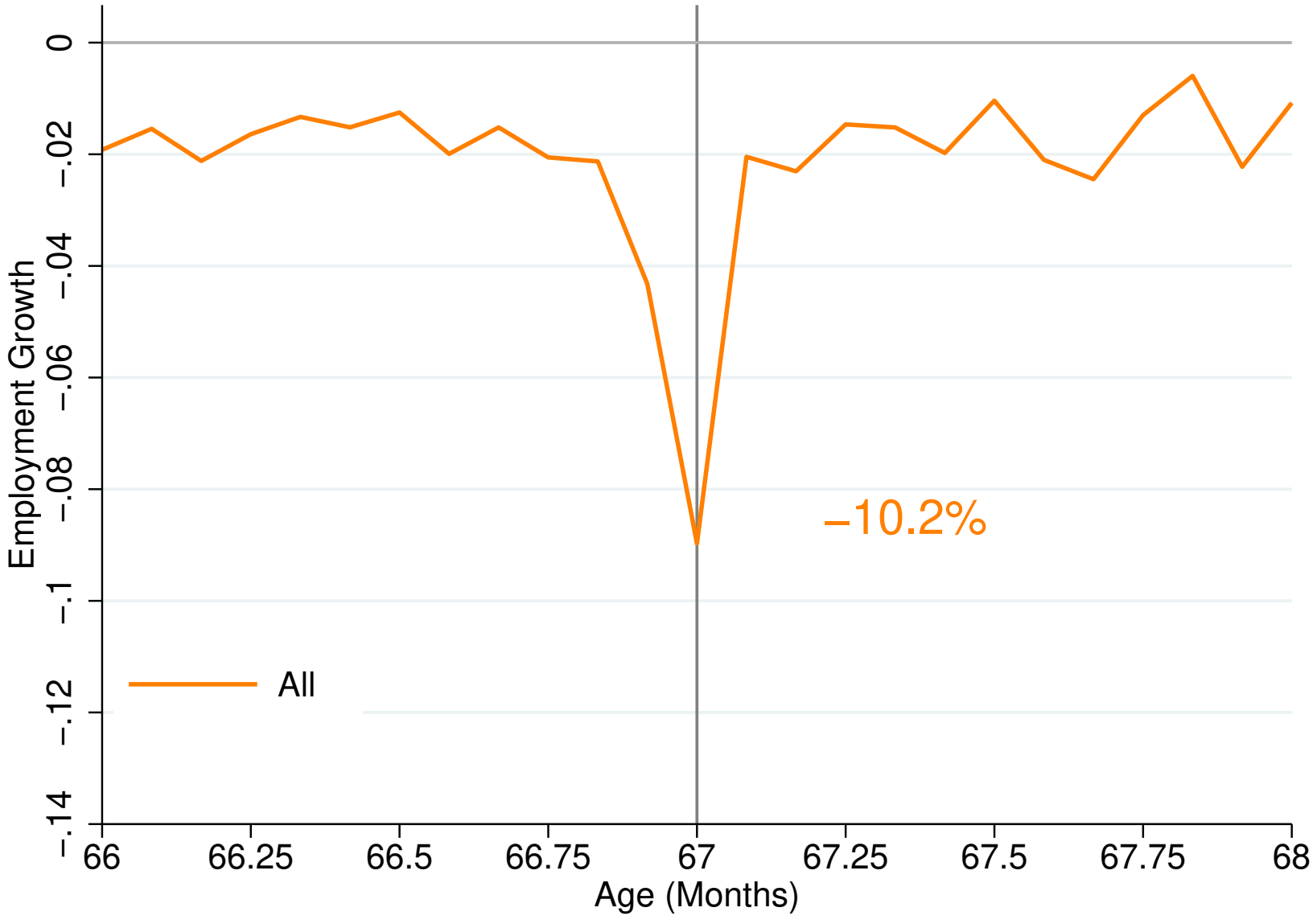
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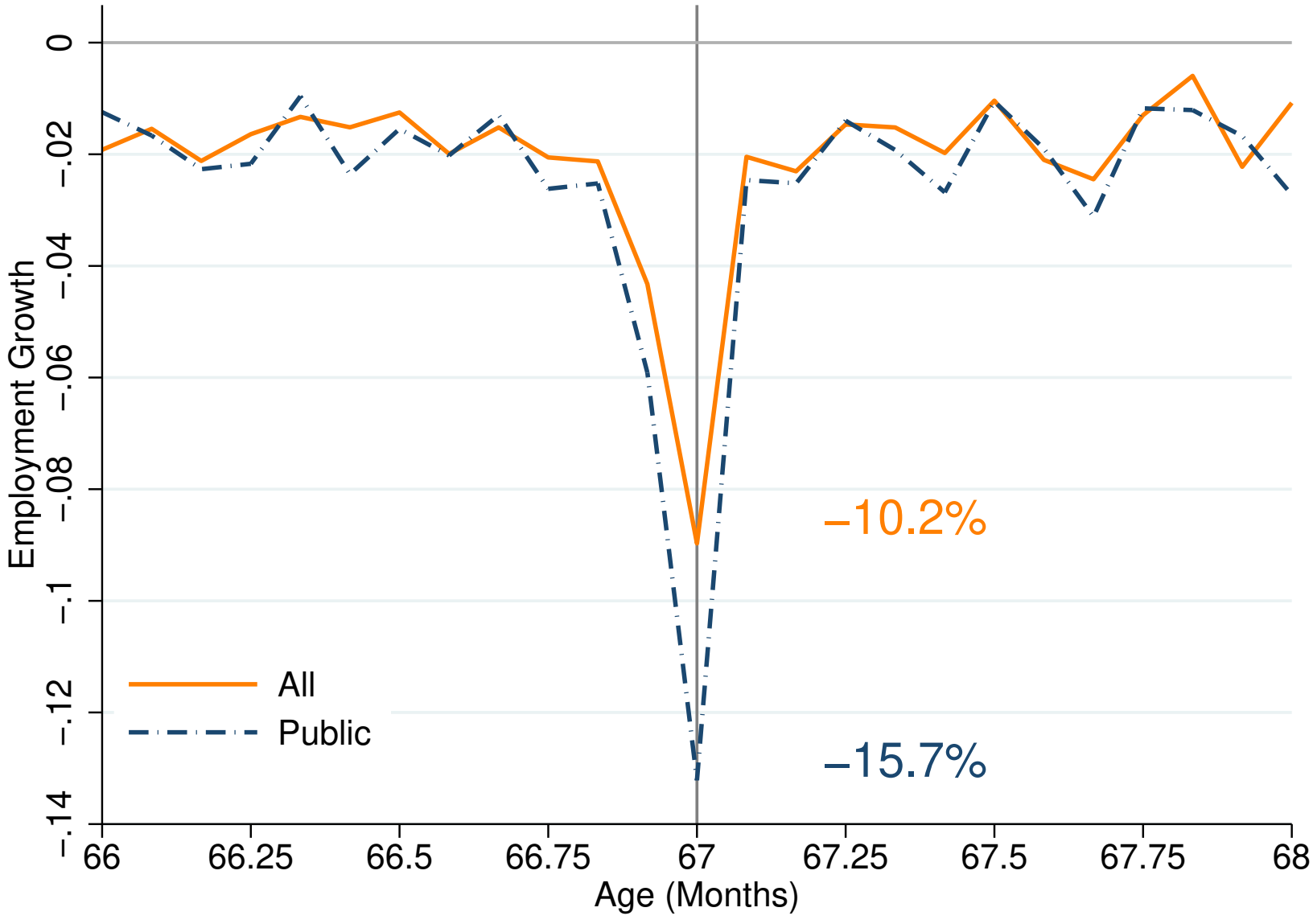
E-Pop: Change (ΔEmp) vs. Growth ($\frac{\Delta \text{Emp}}{\text{Emp}}$)



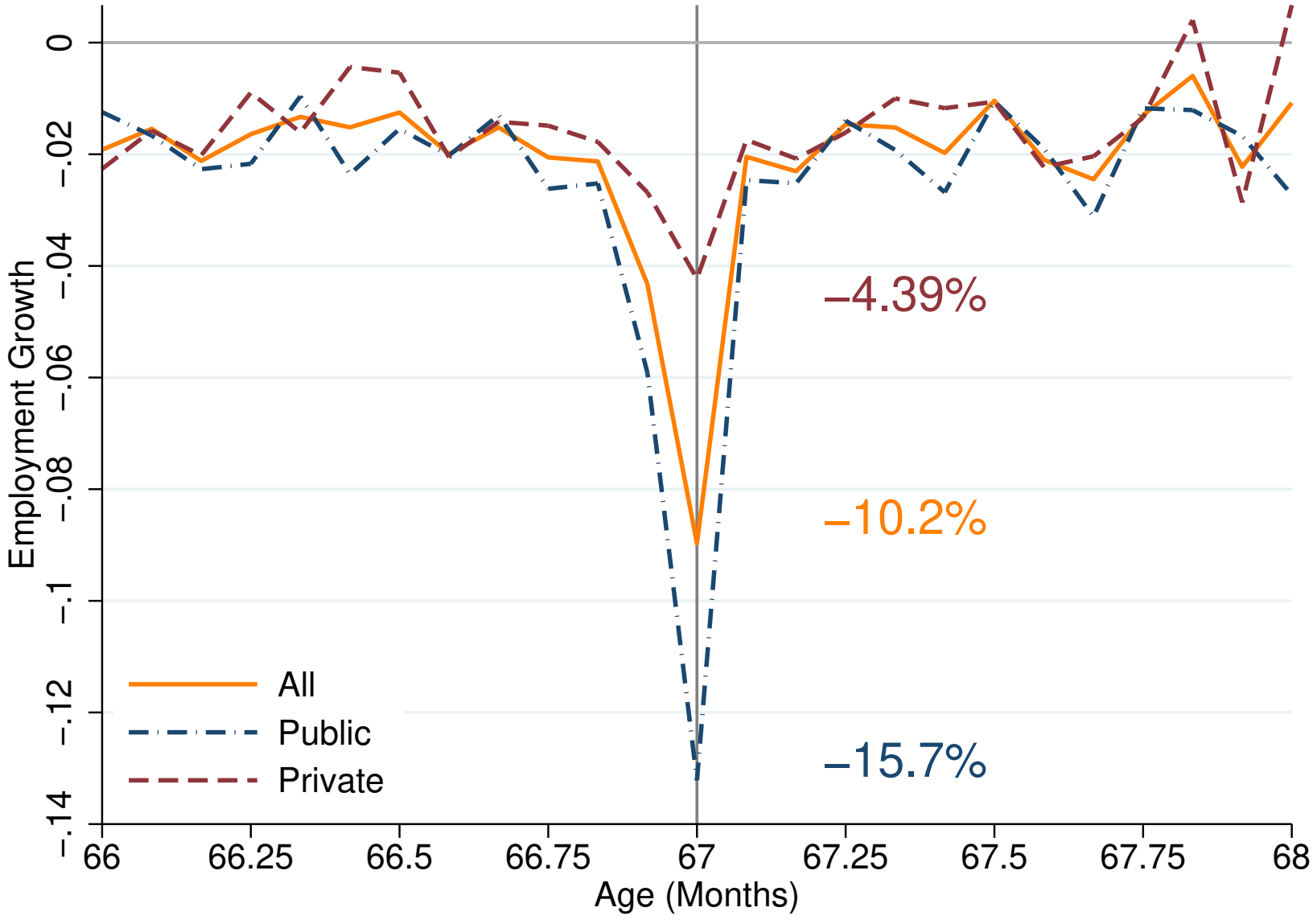
E-Pop: Effect Concentrated in Public Sector



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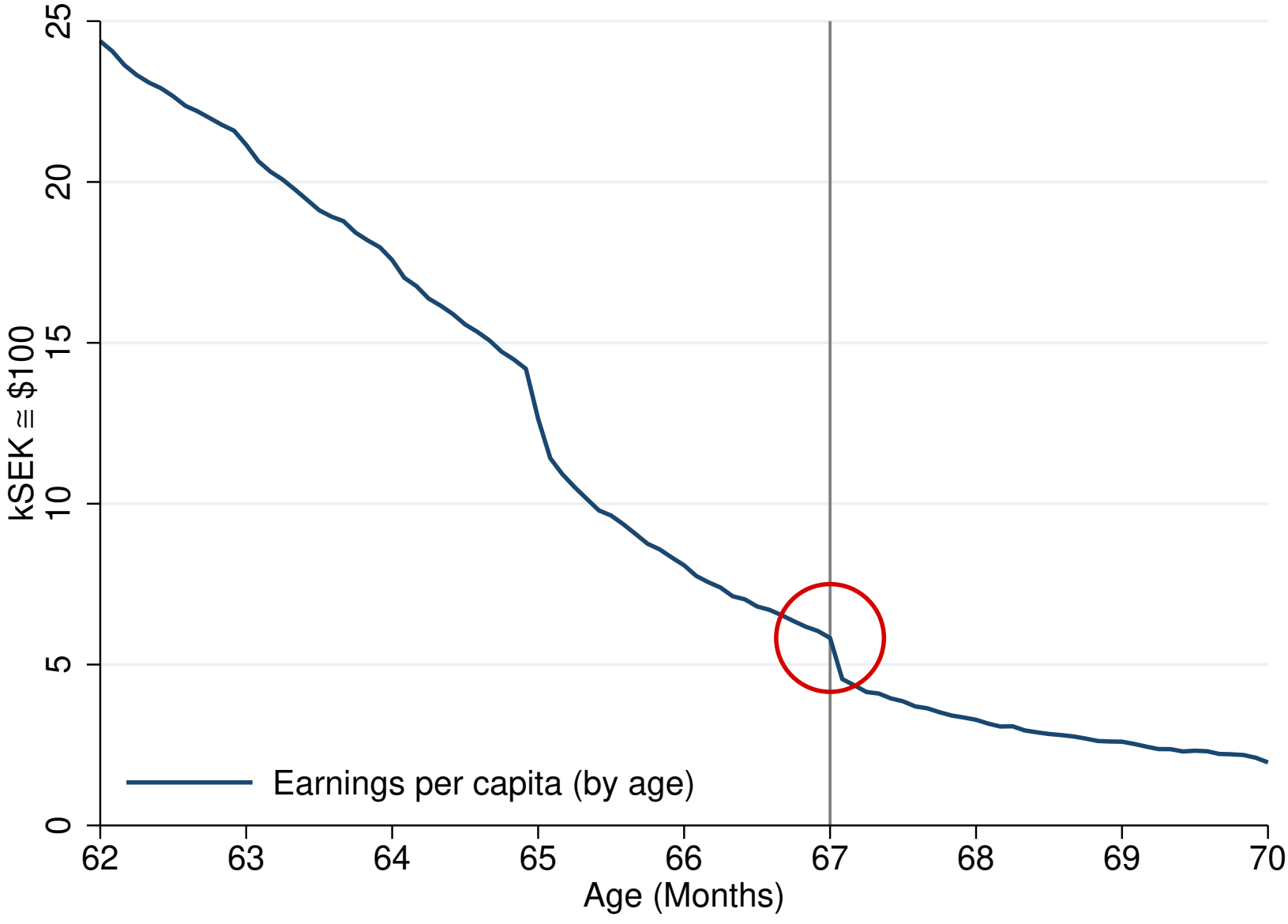


E-Pop: Effect Concentrated in Public Sector



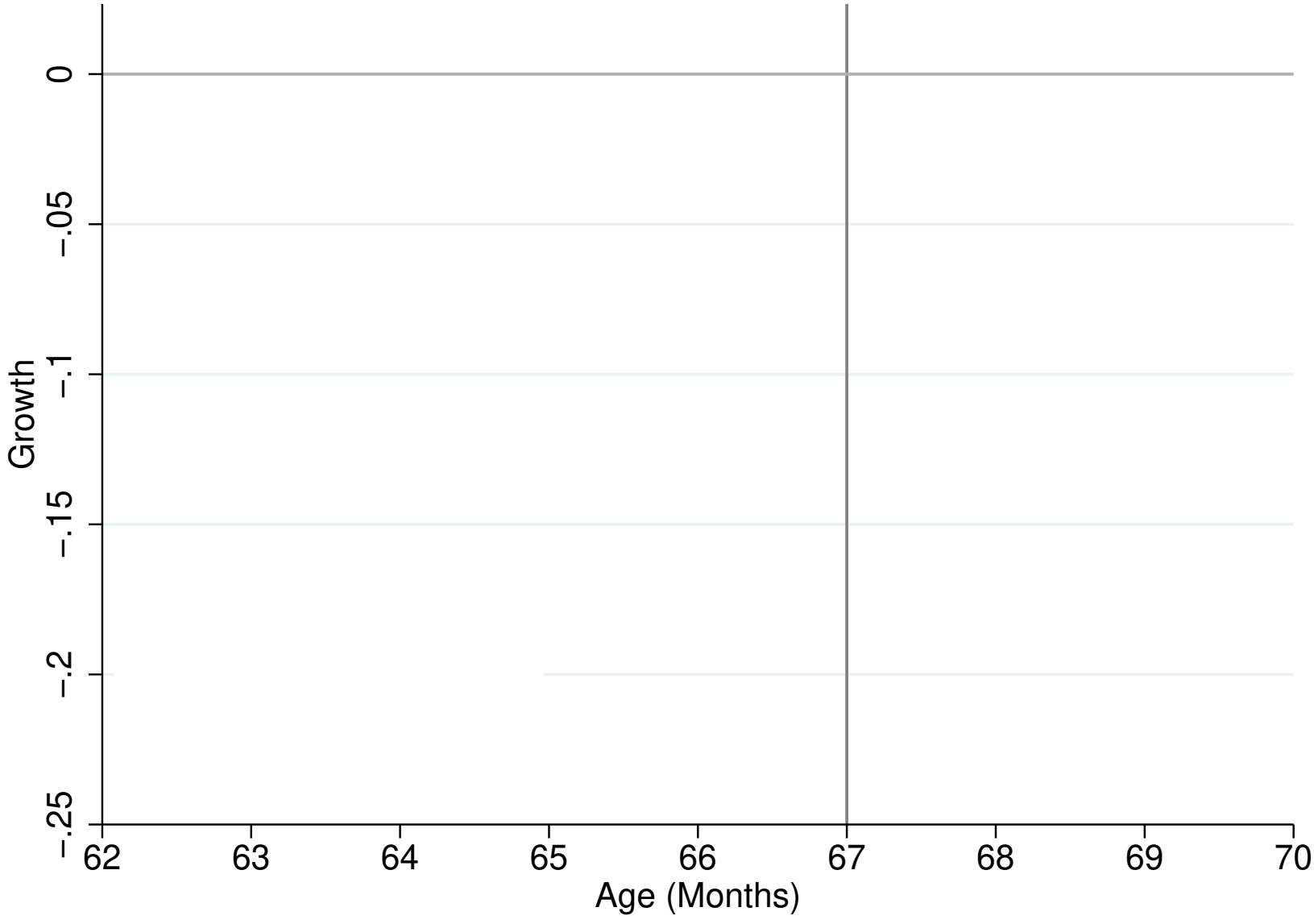
Total Earnings

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



Total Earnings: Growth

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



Total Earnings: Growth

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



Total Earnings: Growth

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



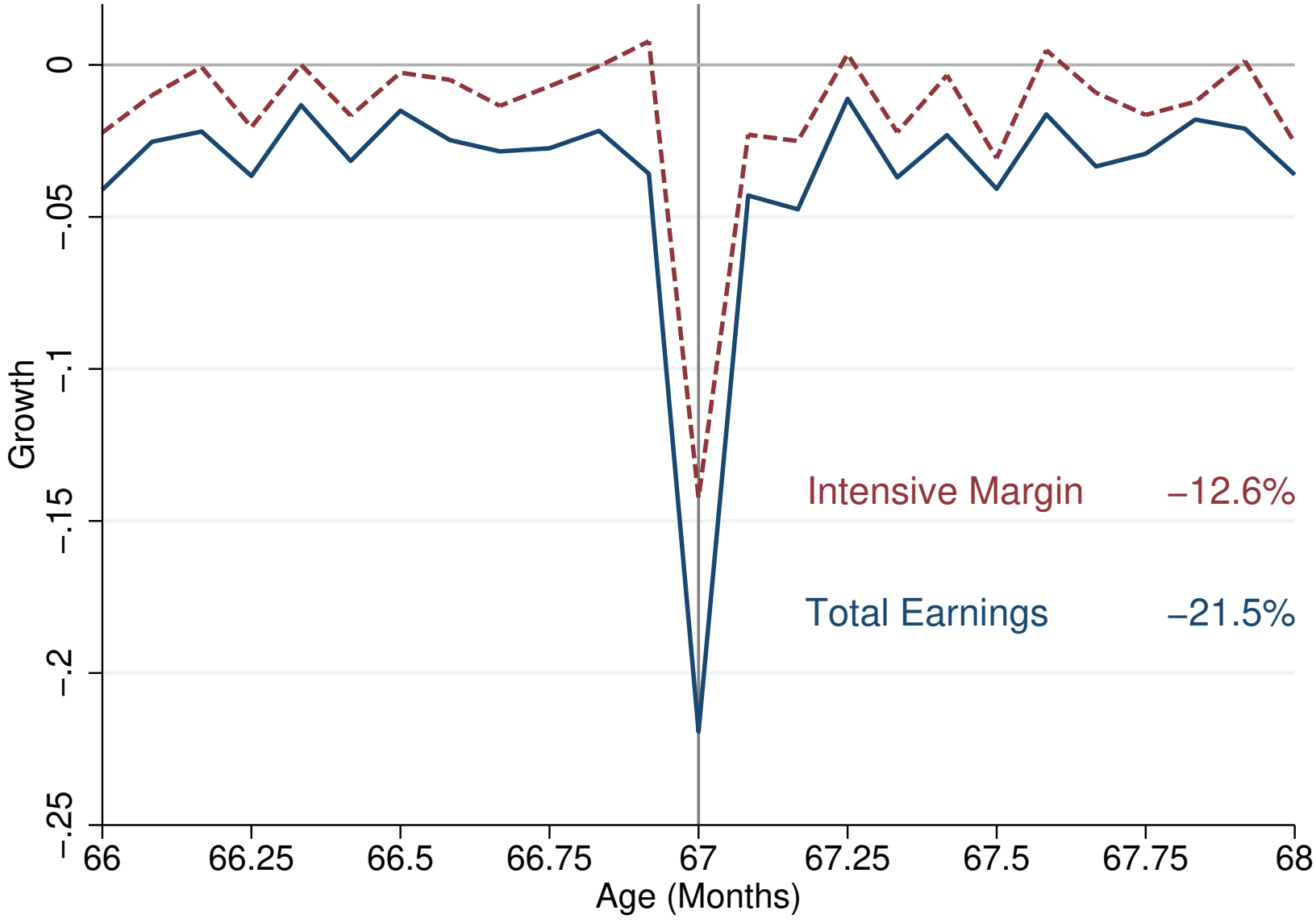
Total Earnings: Int + Ext Margins

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



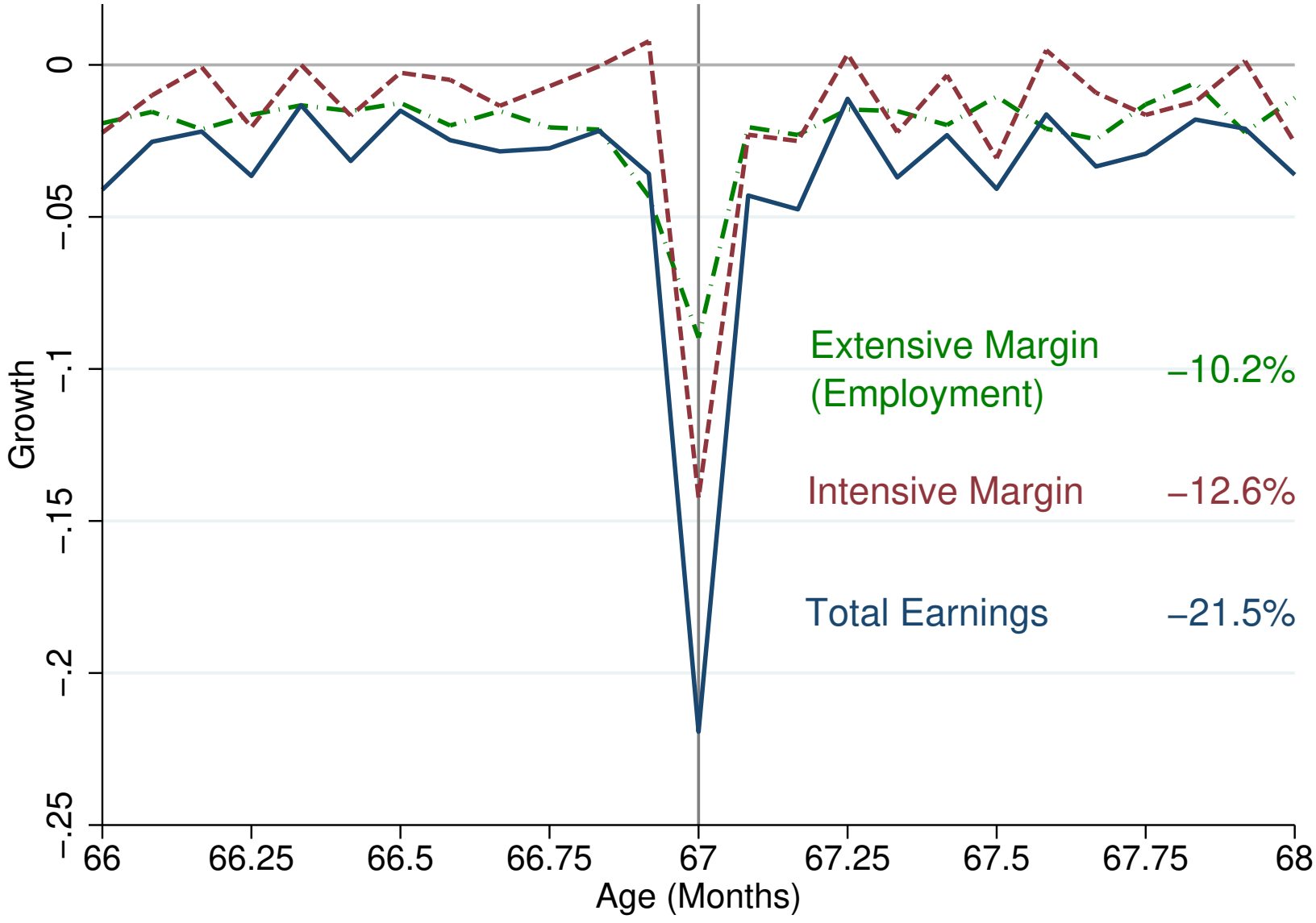
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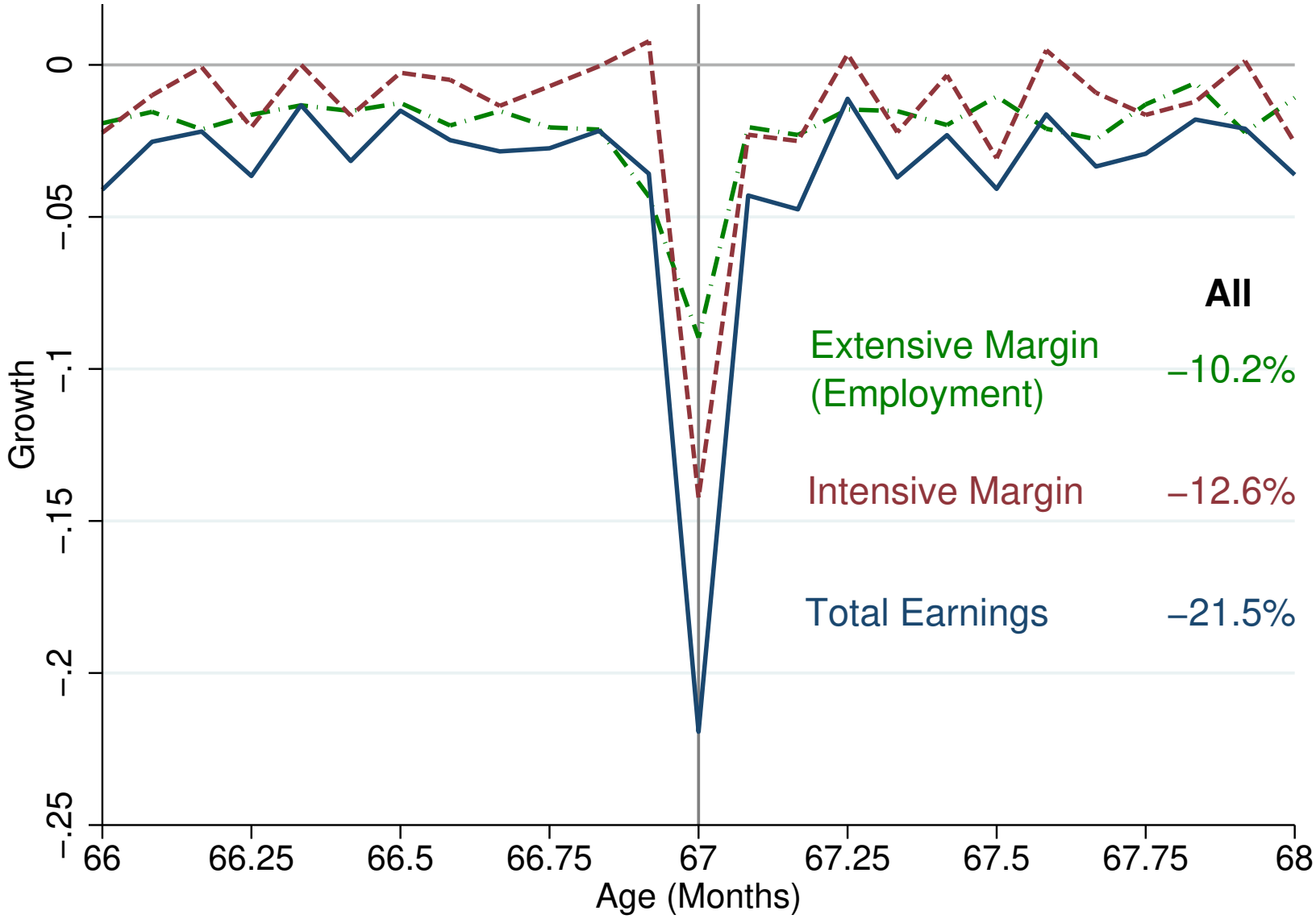
Total Earnings: Int + Ext Margins

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

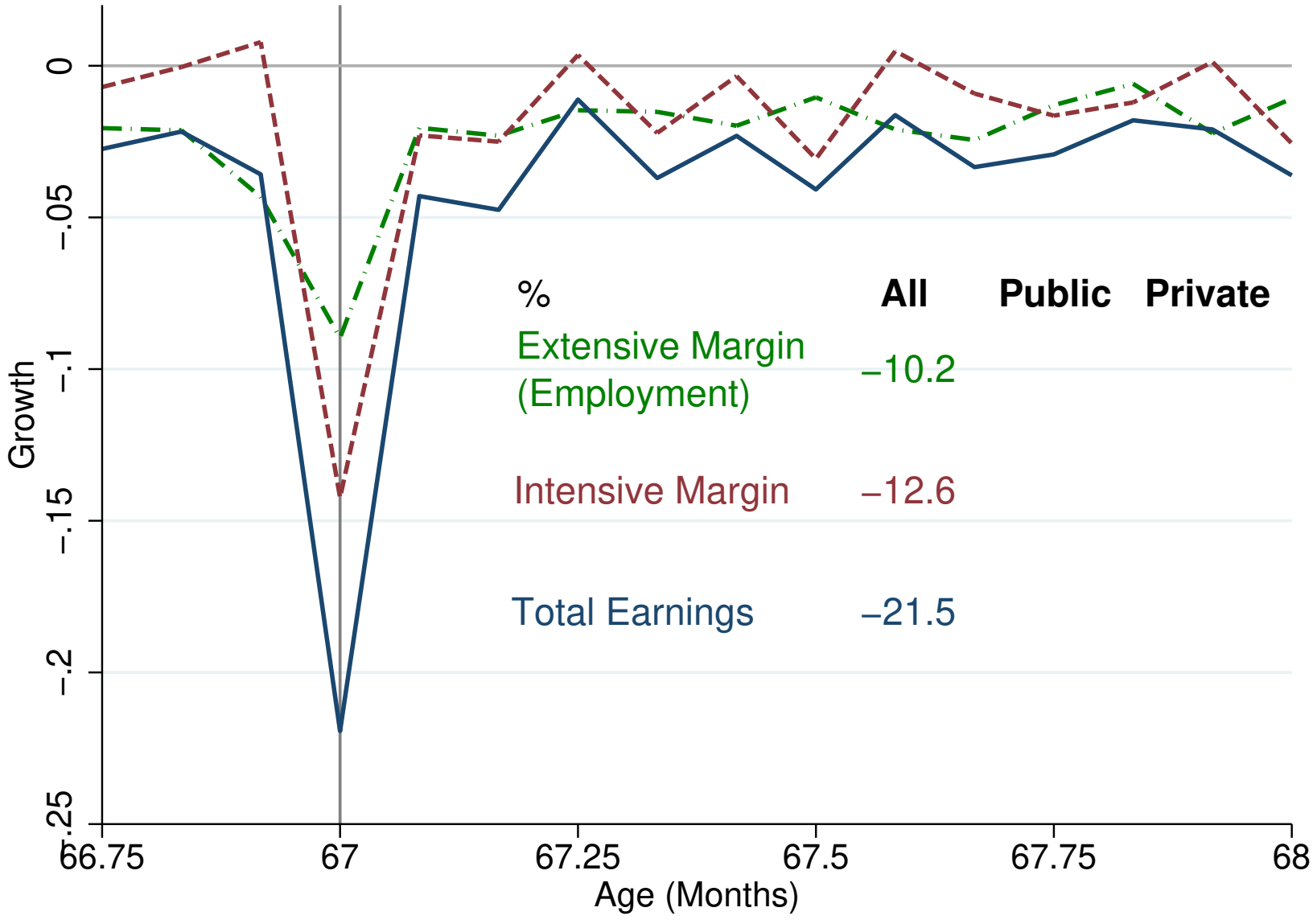


Total Earnings: Int + Ext Margins

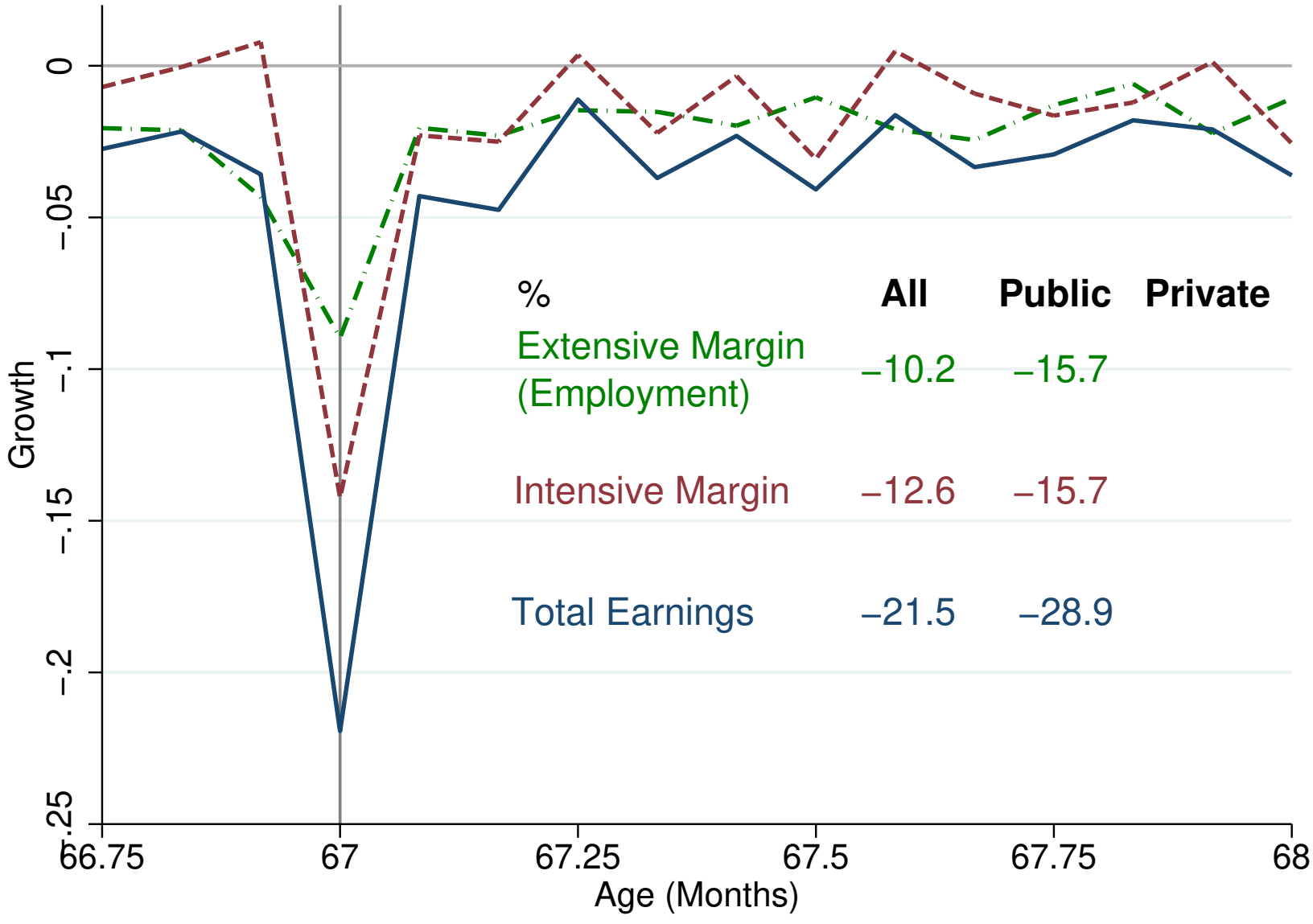
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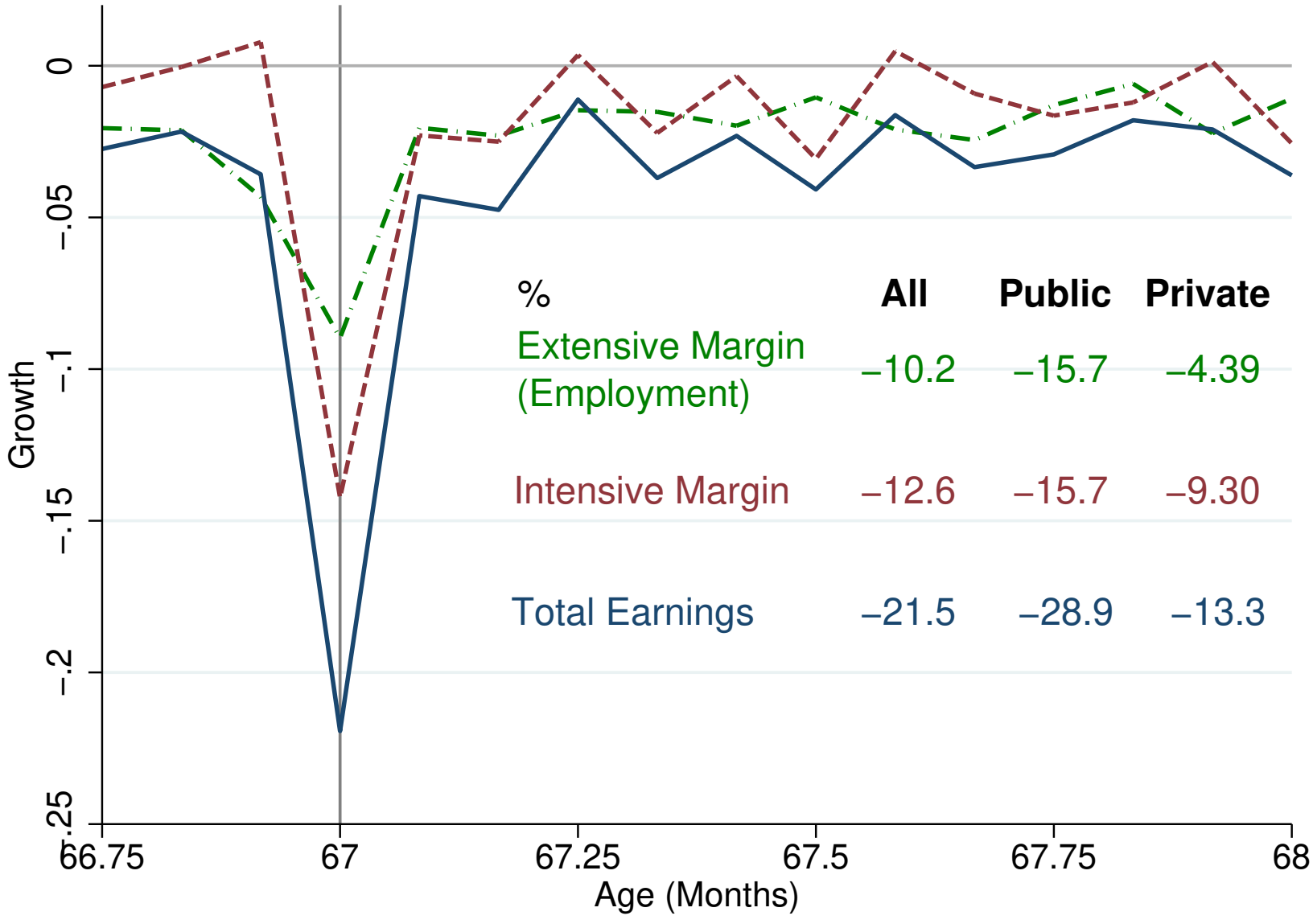
Total Earnings Decomp: Public vs. Private



Total Earnings Decomp: Again, Large Public Effect



Total Earnings Decomp: Again, Small in Private

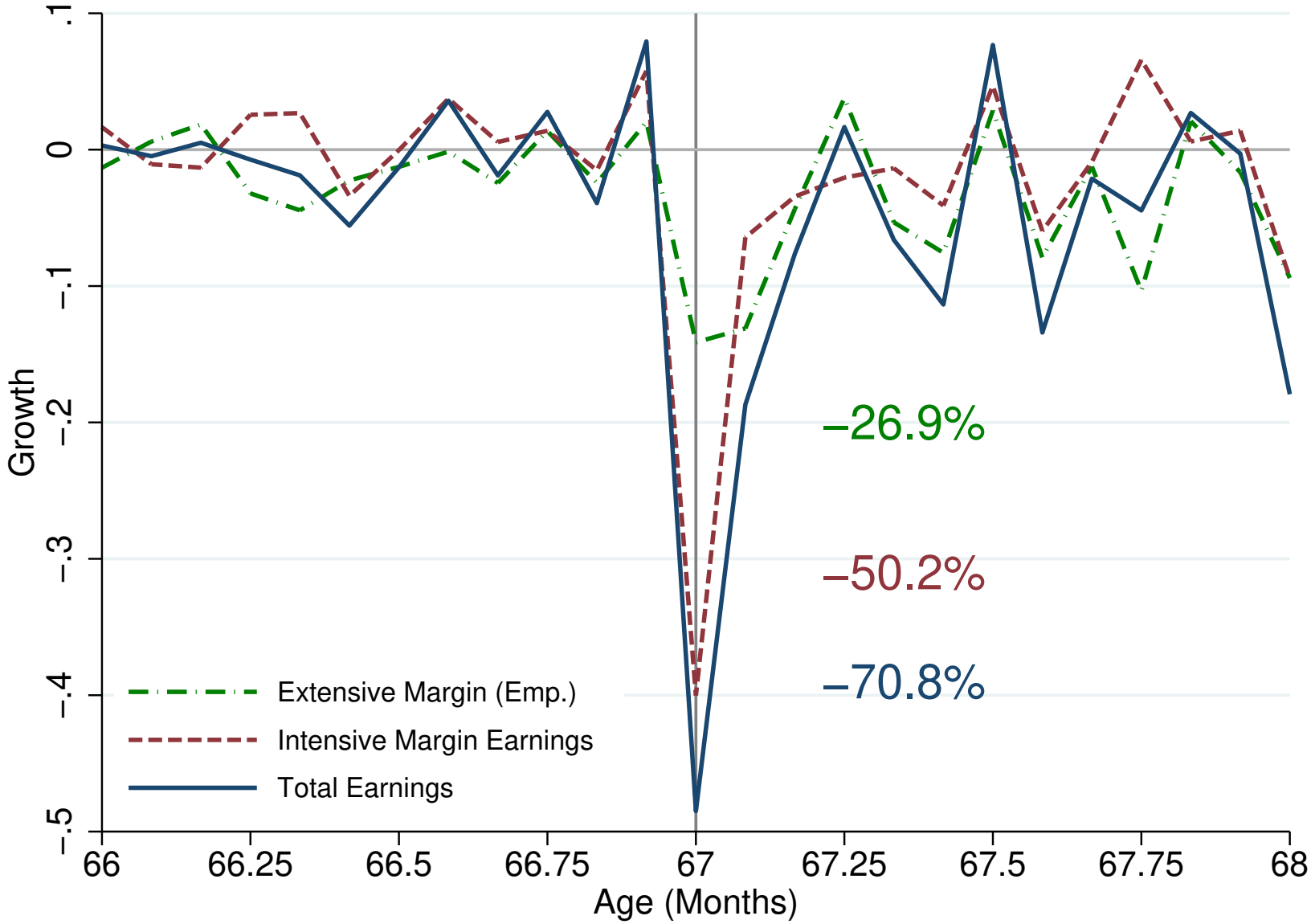


%	All	Public	Private
Extensive Margin (Employment)	−10.2	−15.7	−4.39
Intensive Margin	−12.6	−15.7	−9.30
Total Earnings	−21.5	−28.9	−13.3

Total Earnings Decomp: **Professors Are Special!**

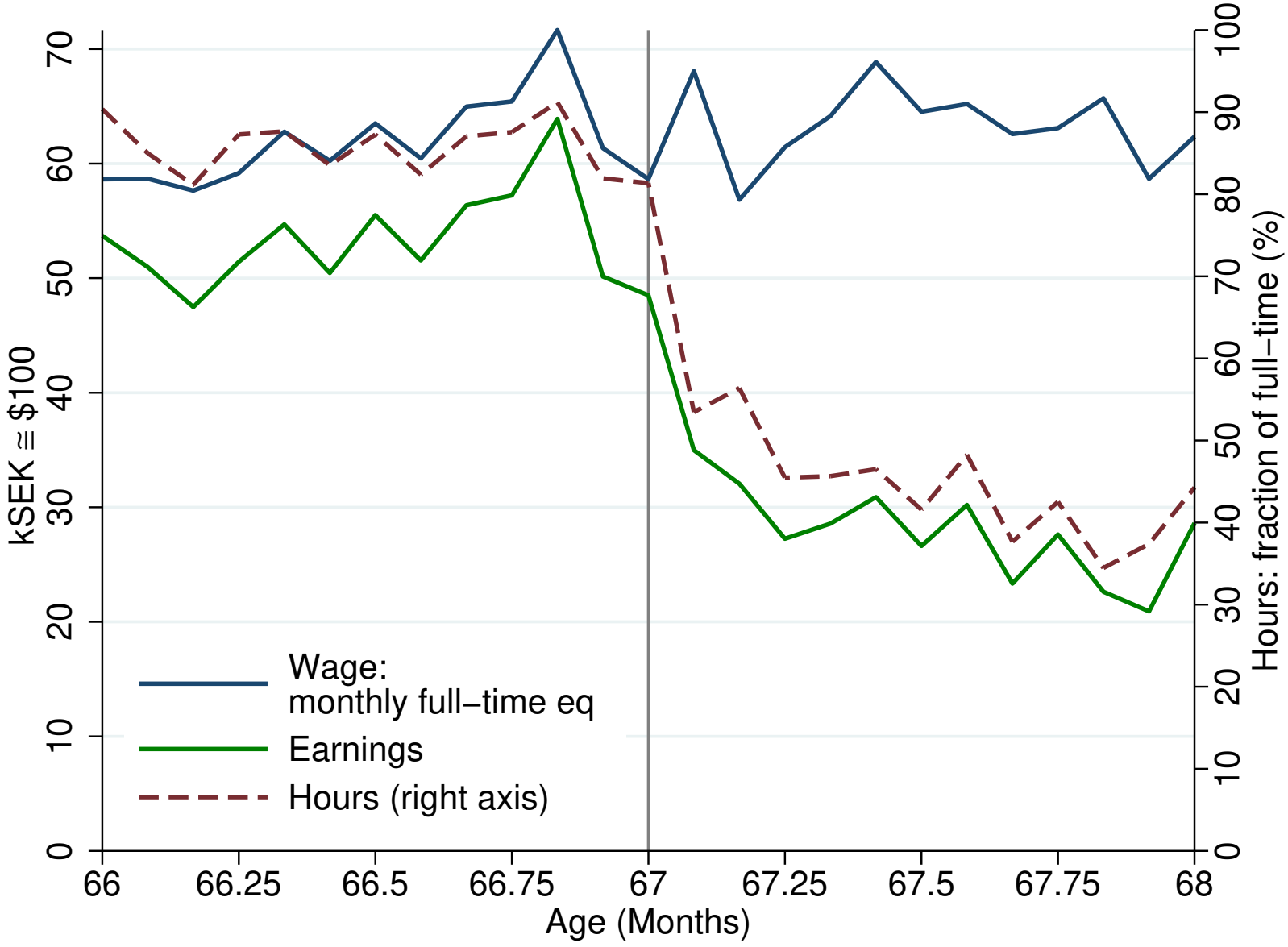
See: Ashenfelter and Card (2002)

Ashenfelter Card 2002



Contract Adj among Stayers: Professors

Ashenfelter Card 2002



Empirical Roadmap

1. Direct effect on separations
2. Understanding the effect
3. Beyond separations: effects on contracts of 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

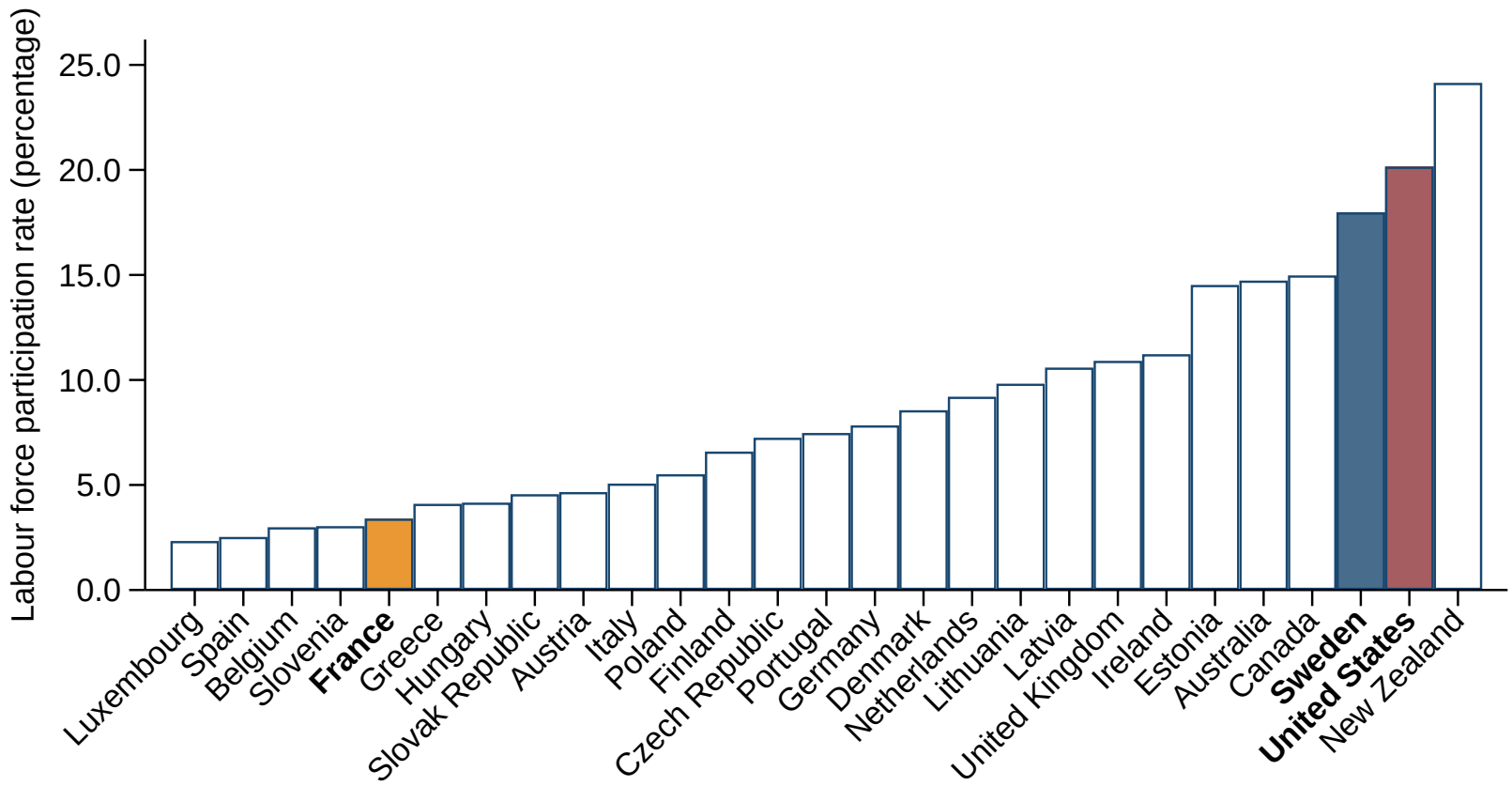
Ideal experiment: shift EPL cutoff and measure effects

- 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)

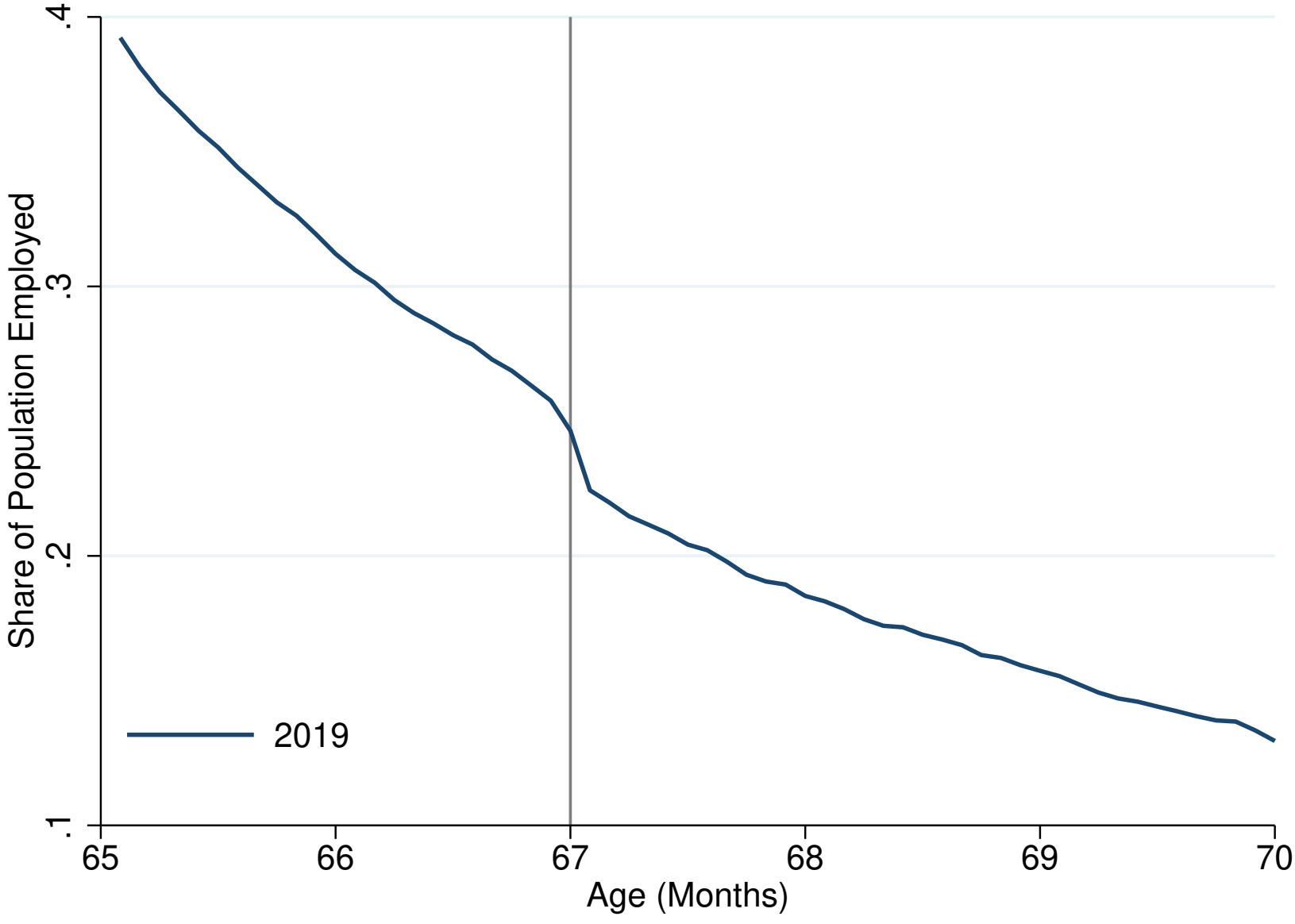
Policy relevance: Swedish government is extending cutoffs with the stated goal of boosting employment

Setting: High LFP Rate Among Older Pop: 65+

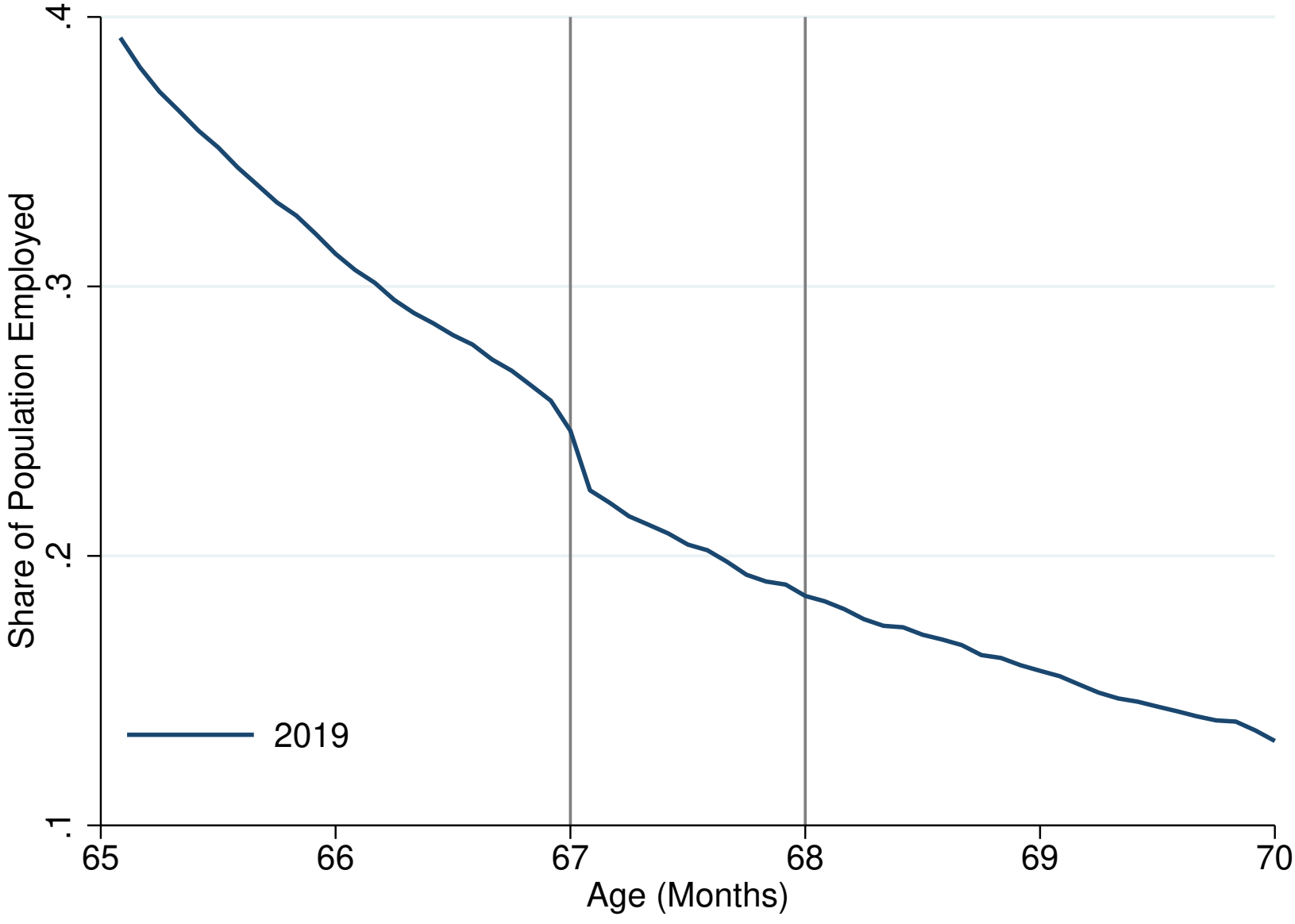


OECD 2019; Anglo-Am/EU comparison

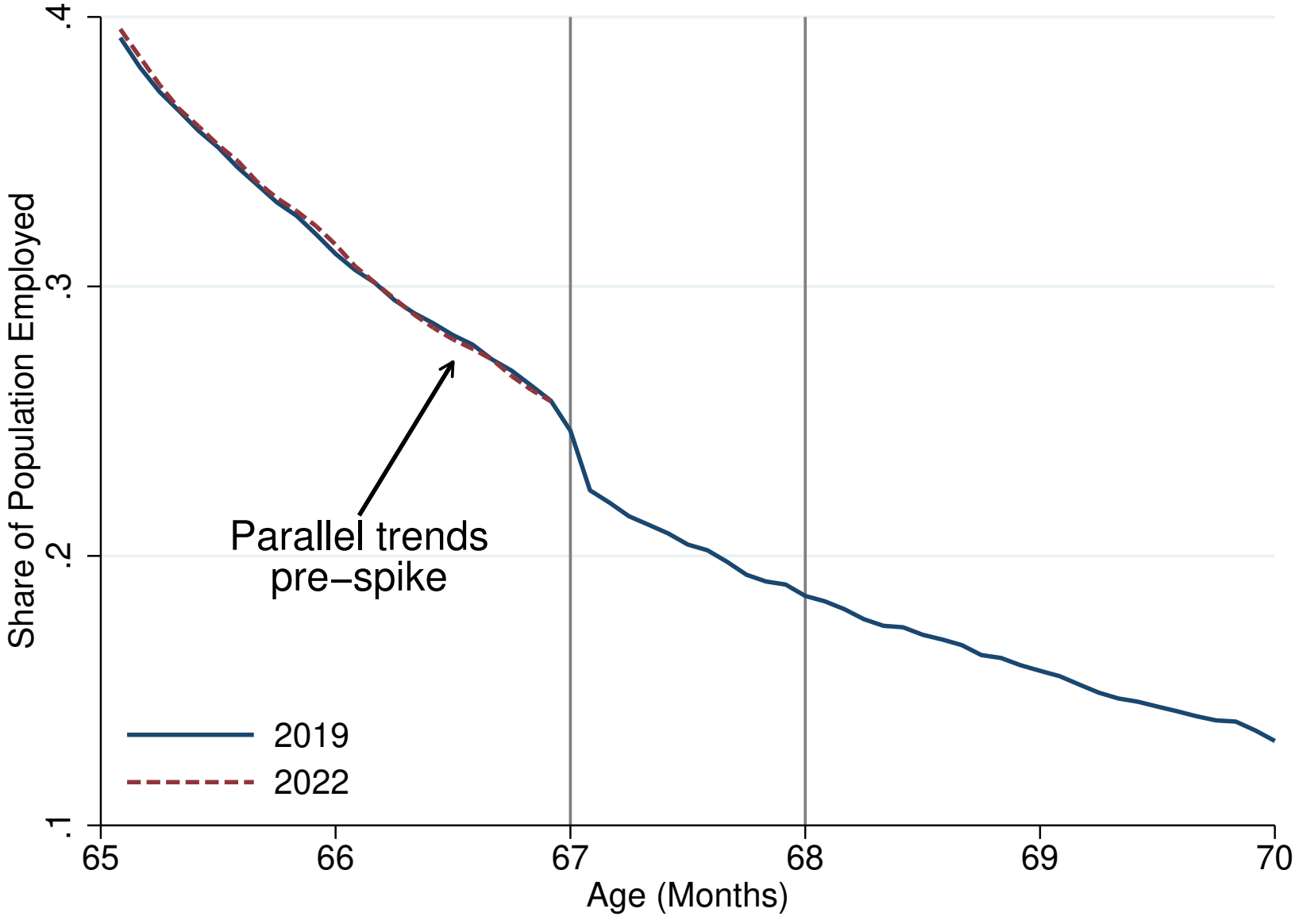
E-Pop with EPL until 67: 2019



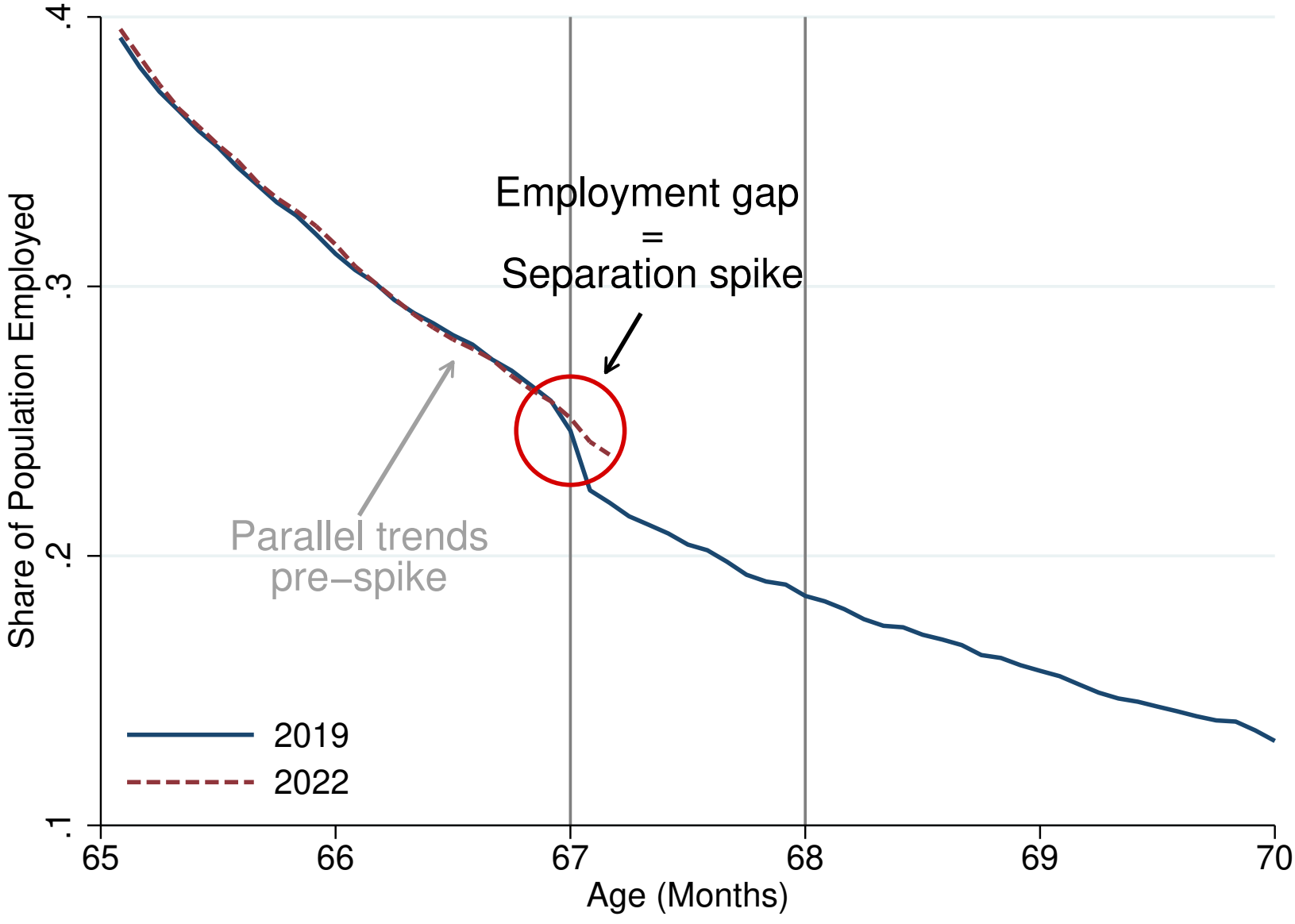
E-Pop with EPL until 68: 2022



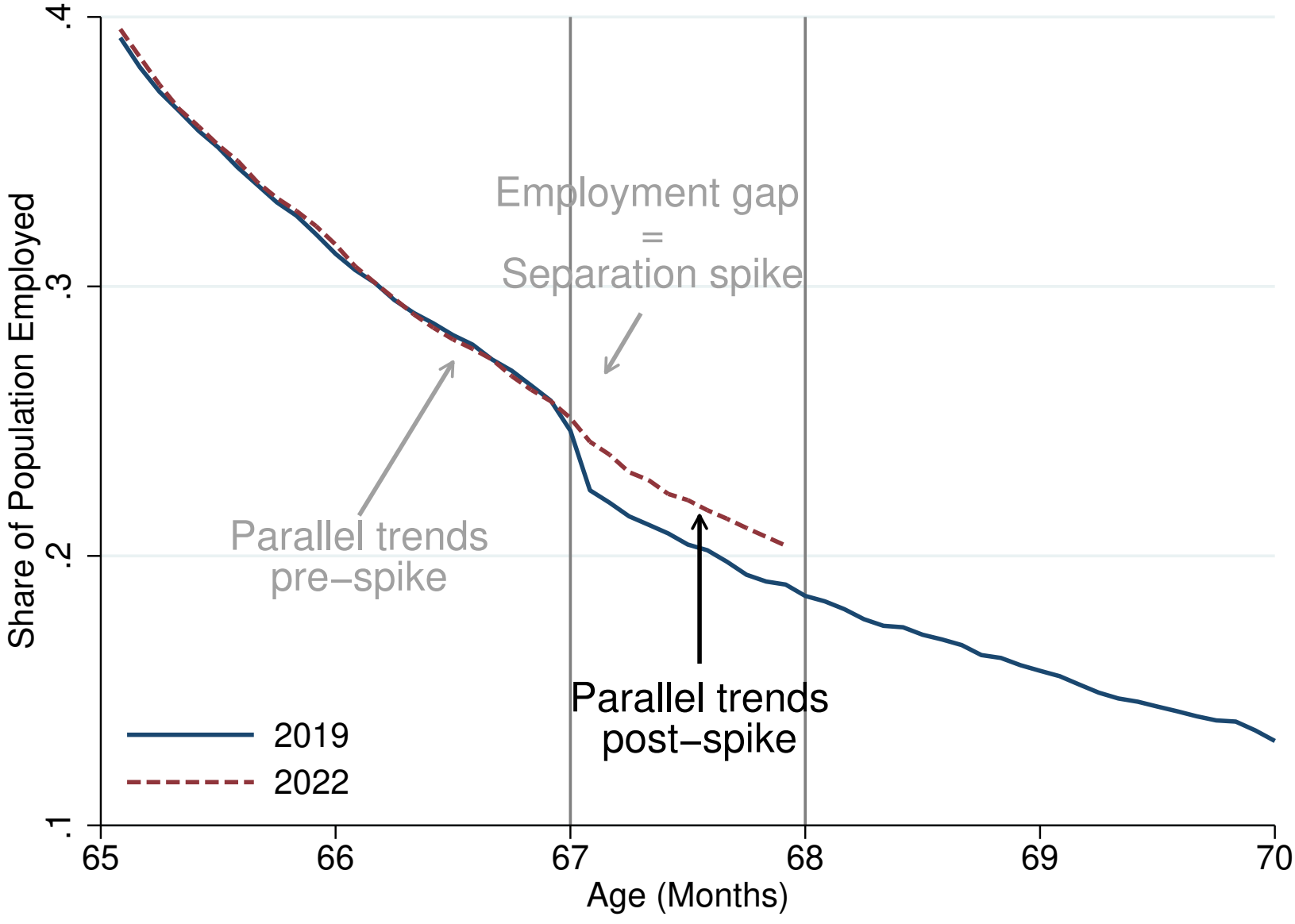
E-Pop with EPL until 68: 2022



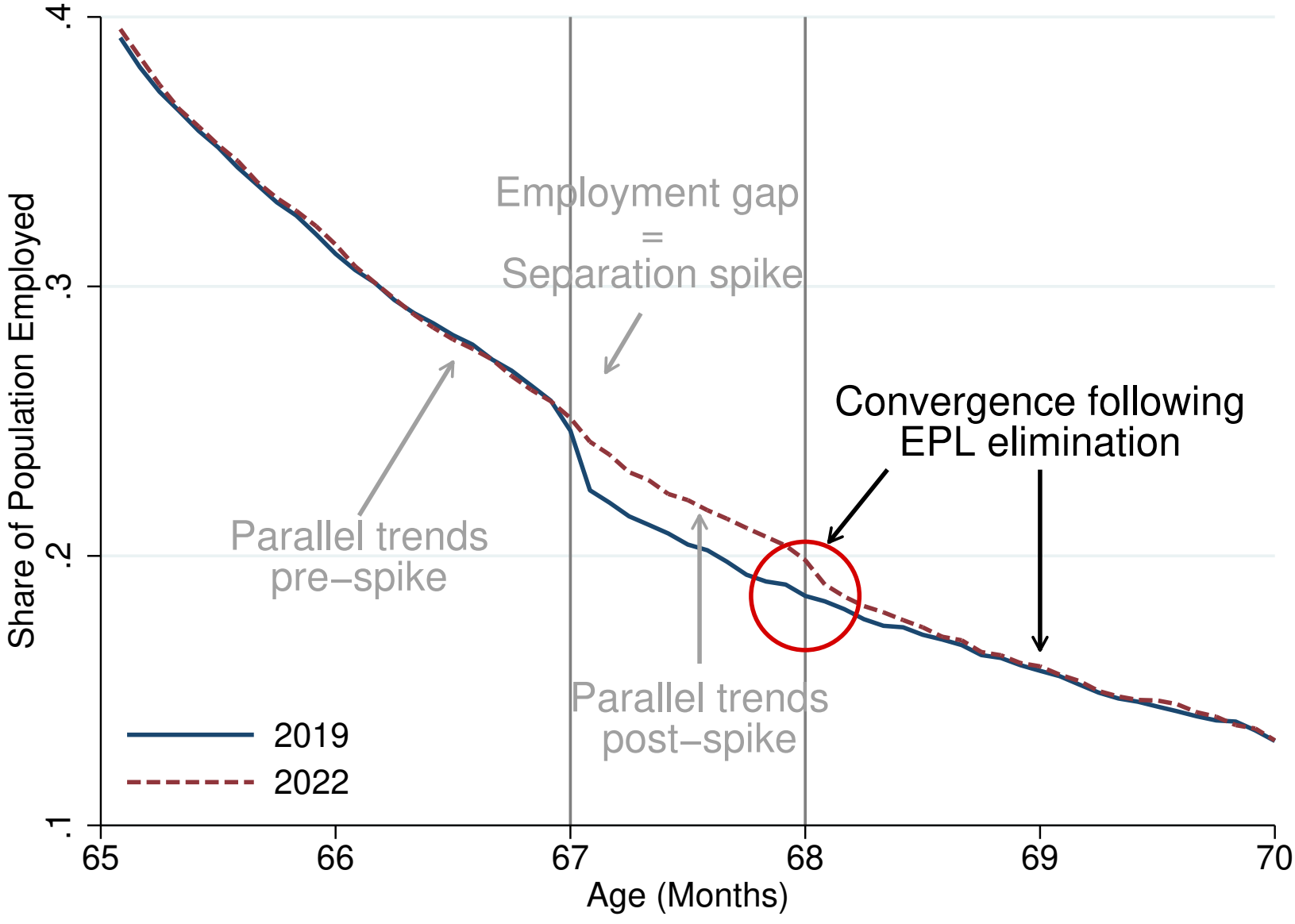
E-Pop with EPL until 68: 2022



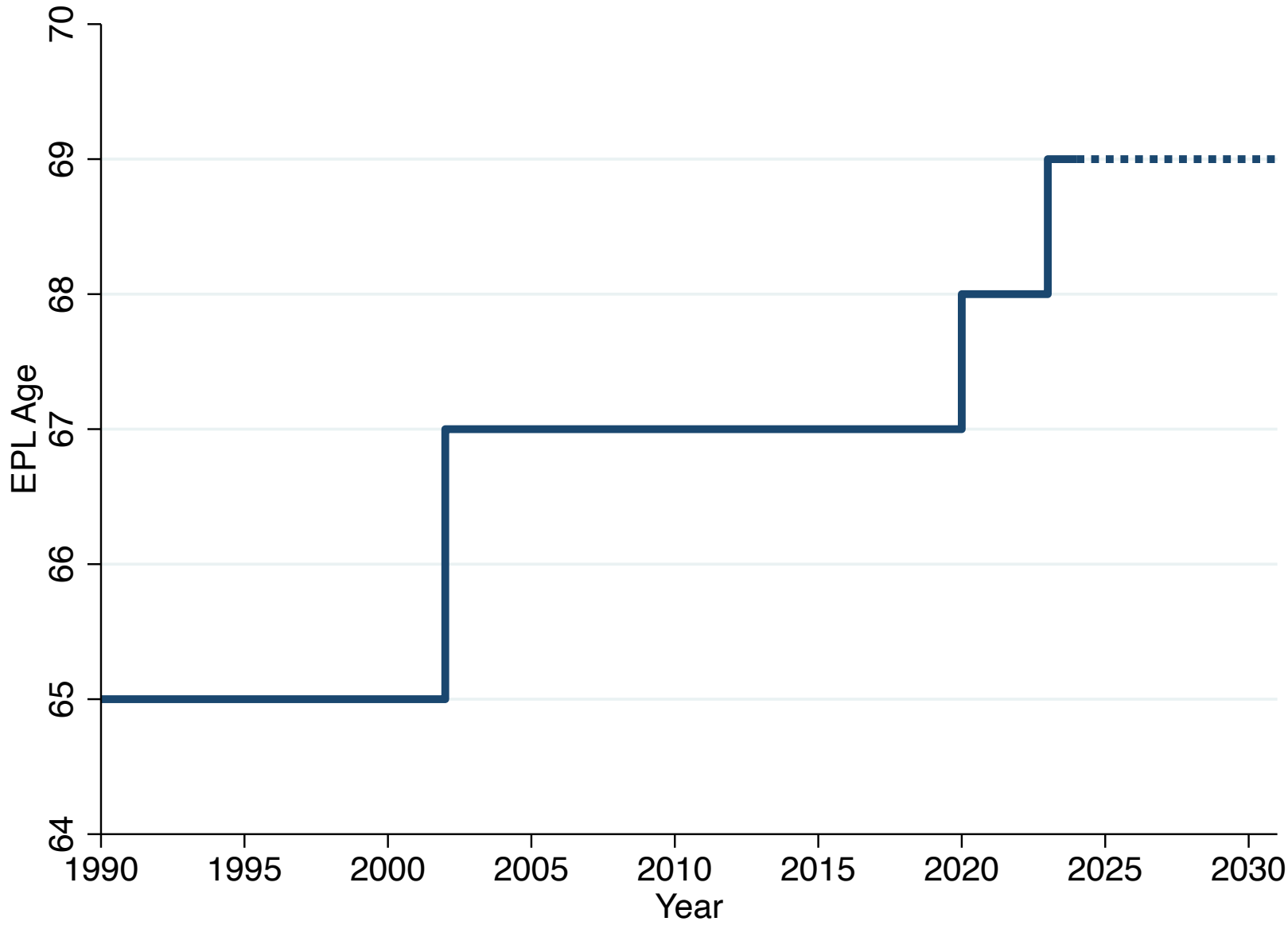
E-Pop with EPL until 68: 2022



E-Pop with EPL until 68: 2022



Policy Variation: Reform of EPL Cutoff Age



Empirical Roadmap

1. Direct effect on separations
2. Understanding the effect
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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—zero wage effect

- About 8% of jobs separate in response to elimination of strong EPL
- No hiring effect, 10% employment effect, 20% earnings effect

Interpretation:

- Involuntary retirement/hours reductions (consistent w/ Lazear 1979!)
- Compliers: high tenured, large firms, recently sick, **public sector**

⇒ Swedish employers—*esp. private sector*—mostly get around EPL

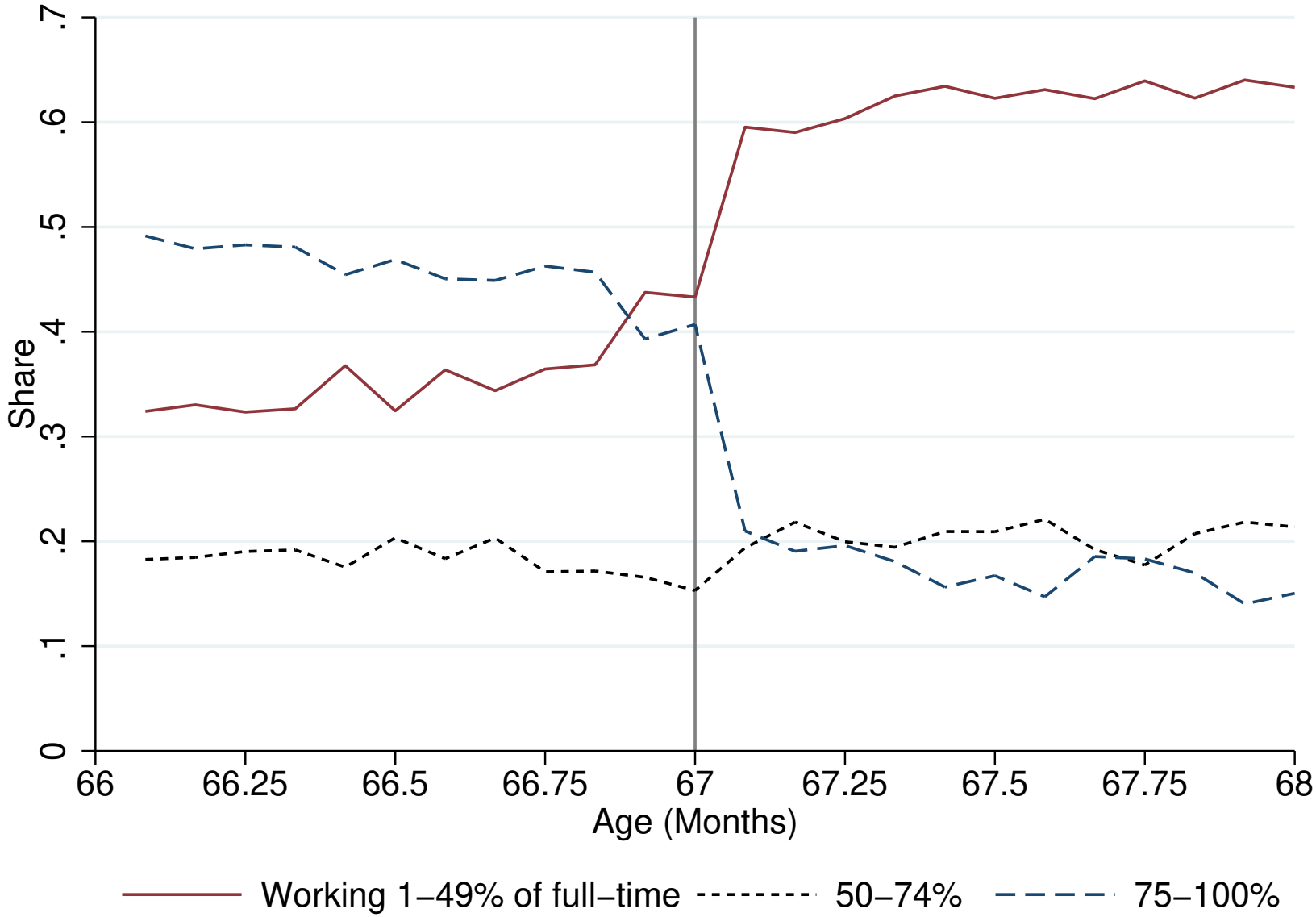
- Upper bound? (older workers, strong EPL, small effect on private)

Potential policy implications:

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

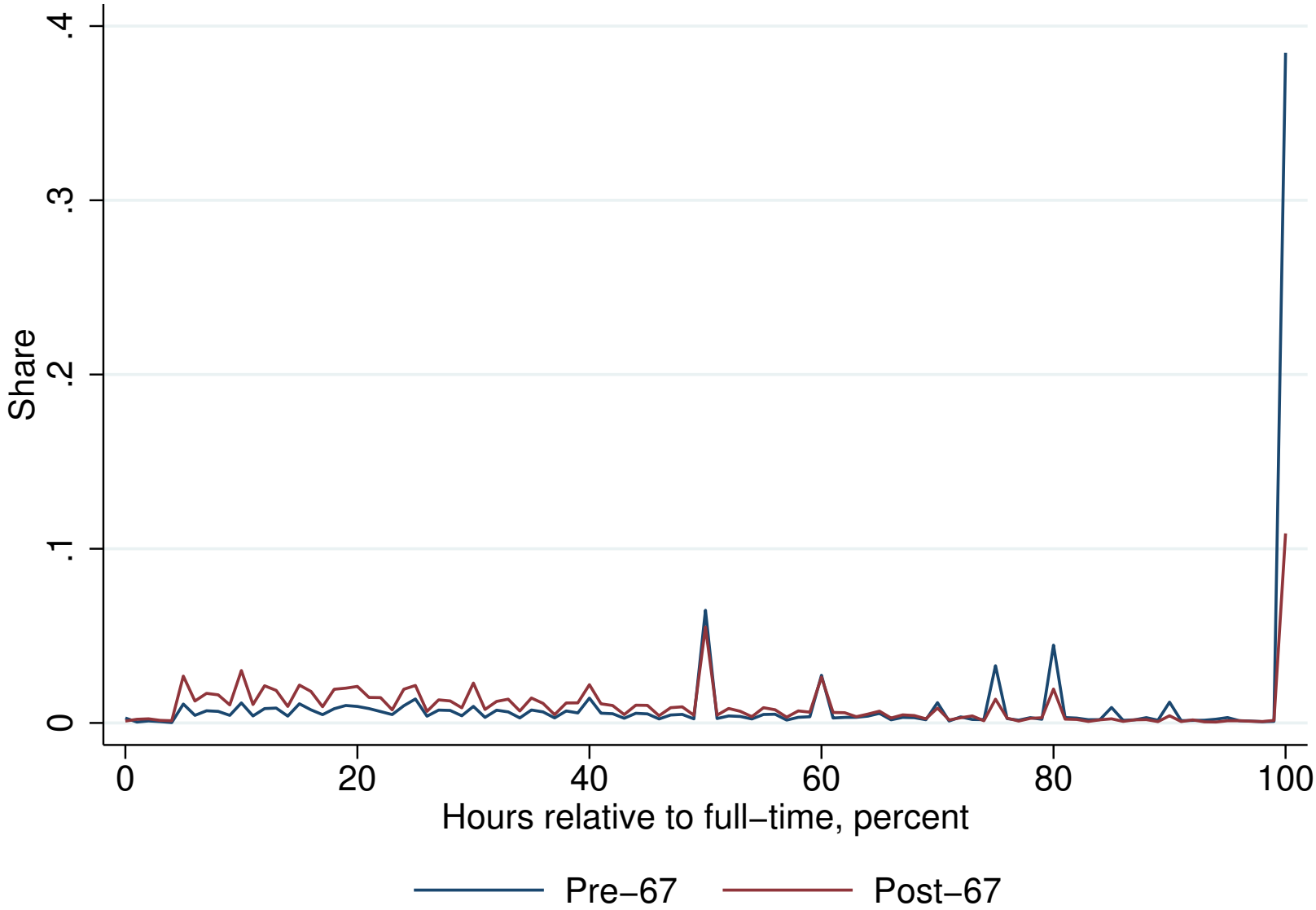
APPENDIX SLIDES

Contract Adjustment: Full-time to (< 50%) Part-time



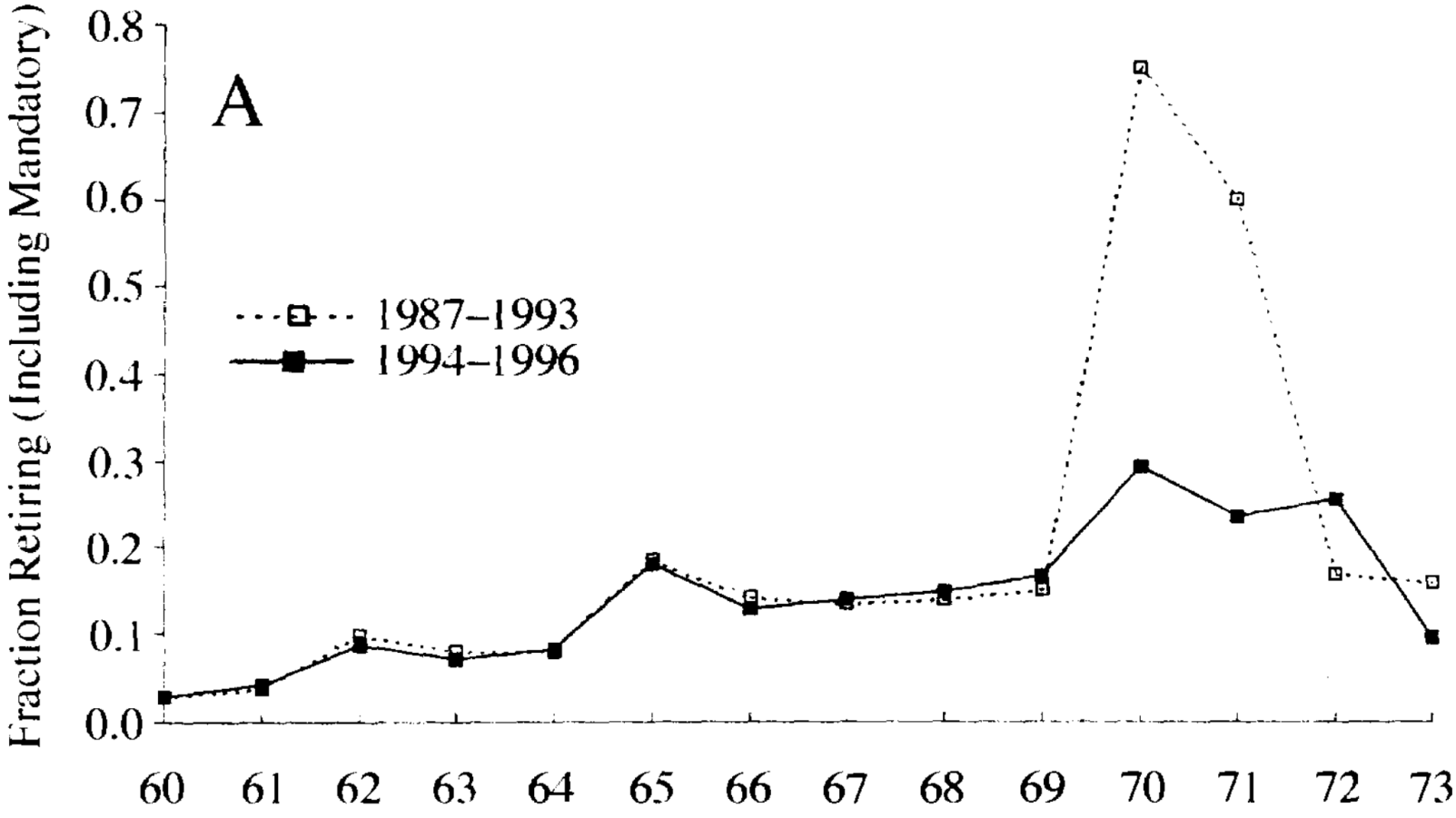
Histogram

Contract Adjustment: Hours Adjustment



Back

US Prof's Losing Tenure at 70
Ashenfelter and Card (2002)



s Back