The Impact of the Minimum Wage on Inequality: Cross-Sectional vs Lifetime Perspectives

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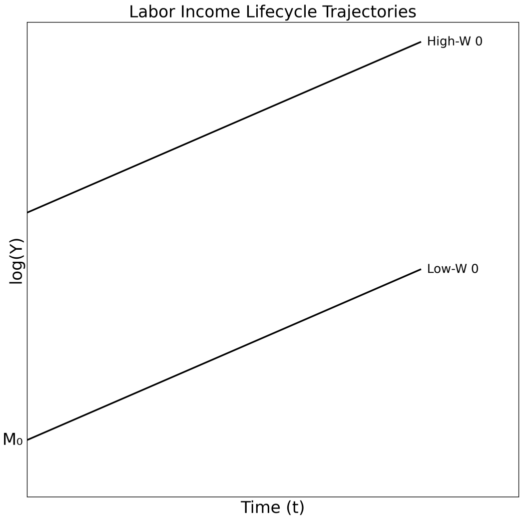
- **Research Question:** Impact of a Permanent Minimum Wage Increase on Lifetime Labor Income Inequality?

Motivation - Stylized Counterfactuals



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- Key Finding - Permanent $\uparrow$ MW shrinks Cross-Sectional, but Muted Effects on Lifetime Inequality
- Explore Sizable $\uparrow$ Real National Minimum Wage (NMW) in Portugal after 2006.
- Estimate Heterogeneous Effects across the Distribution at Different Horizons.

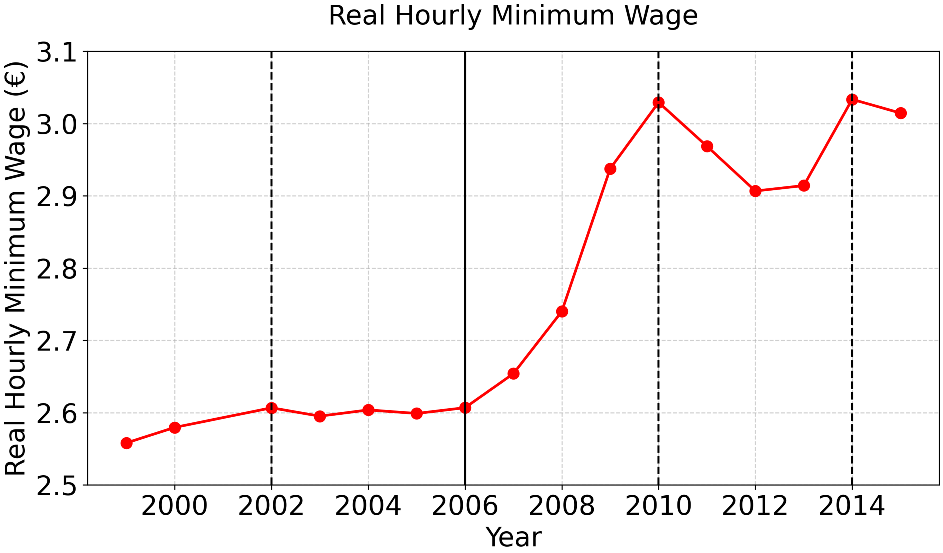
Literature Contribution

- **Contemporaneous Effects**
  - Wages, Earnings, Employment (Ext. & Int. Margin), Spillovers, Worker Turnover, Firm Reallocation, Occupational/Industry Switching
    - Card & Krueger 1994; Dube & Zipperer 2024; Cengiz et al. 2019; Manning 2021; Albagli, Costa & Machin 2024; Lee 1999; Hirsch et al. 2015; Portugal et al. 2006; Rao & Risch 2024; Dustmann et al. 2022; Lordan & Neumark 2018; Gopalan et al. 2021
- **Longer-Term Effects**
  - Engbom & Moser 2022; Hurst et al. 2025; Clemens & Strain 2025; Cardoso 2019
- **This Paper**
  - Empirical Effects on **Individual-Level** Wage/Earnings Trajectories. Heterogeneous along the Distribution.
  - Replicate Contemporaneous Effects - External Validity

Outline

1. **Evolution of Real National Minimum Wage in Portugal**
2. **Data**
3. **Research Strategy** Identifying Assumptions and Threats
4. **Results h=2,4 (During NMW $\uparrow$) & h=8 (After NMW $\uparrow$)**
5. **Investigating Reasons For Transitory Individual-Level Effects**
   - "Mechanical" Channel - Growing-Out of MW Exposure
   - Weak/No Responses in Determinants of Future Wage Growth

Evolution of the Minimum Wage



Data - Quadros de Pessoal (QP) (Personnel Records)

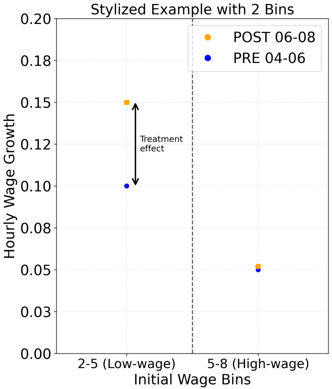
Annual Mandatory Administrative Survey of All Establishments in Portugal, collected by the Ministry of Labor.

- Covers the Universe of Private Sector Employment
- Rich Longitudinal Employer-Employee matched Dataset.
- Variables on workers
  - Base Labor Income, Extra Income (overtime pay, bonuses), Base hours, Overtime hours, Age, Gender, Education, Occupation, Job Title, Part-Time, etc
  - Matched with Firm and Establishment - Region, Industry, Firm Size, Firm Revenue, etc

Research Strategy - *Dustmann et al. (2022)*

- Heterogeneous Exposure to $\uparrow$ NMW across 2006 Workers
- Research Strategy: DID in Growth Rates!
- Contrast Growth rates in Pre-period (until 2006) and Post-period (after 2006) for Treatment and Control Groups
- Control Group - Workers at the Top of the 2006 Wage Distribution (60th pct of 2006). Treatment group - All workers below.
- Visual Aids Next: Baseline Specification h=2 & Outcome = (Hourly) Wage Growth

Research Strategy - Stylized Examples



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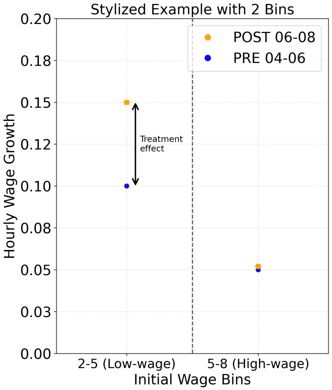
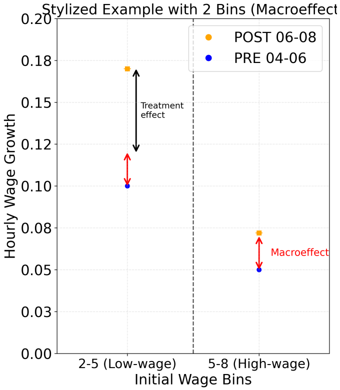
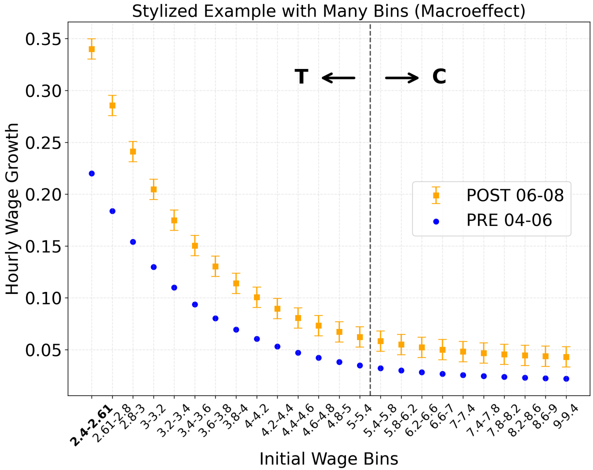




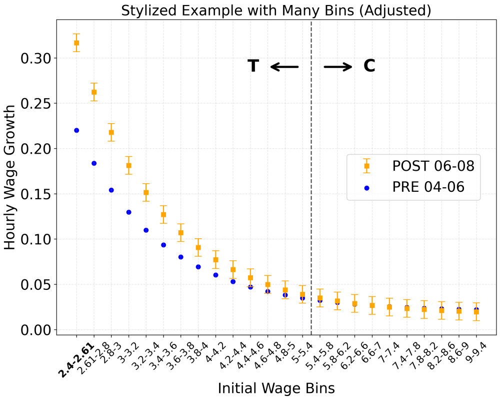
Research Strategy - Stylized Examples

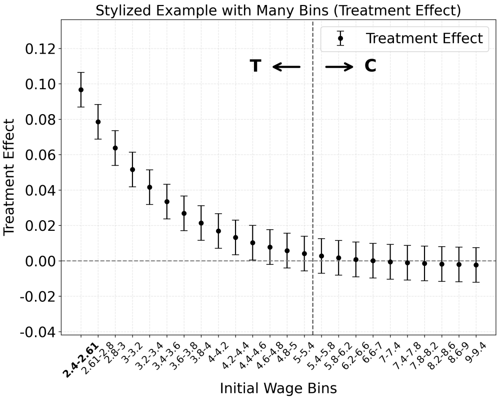
$$y_{it} - y_{i,t-2} = \sum_k \gamma_k D[b_{k-1} < w_{i,t-2} \leq b_k] + \beta X_{i,t-2} + Post_t \cdot \left[\sum_k \delta_k D[b_{k-1} < w_{i,t-2} \leq b_k] + \tilde{\beta} X_{i,t-2} \right] + \varepsilon_{it}$$



Research Strategy - *Dustmann et al. (2022)*

Step 2 DID - Adjust Estimates: $\tilde{\delta}_k = \delta_k - \sum_{k \in \text{HighBins}} s_k \delta_k$





Threats to Identification

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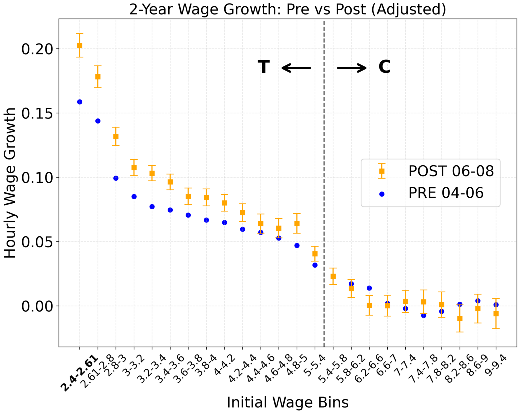
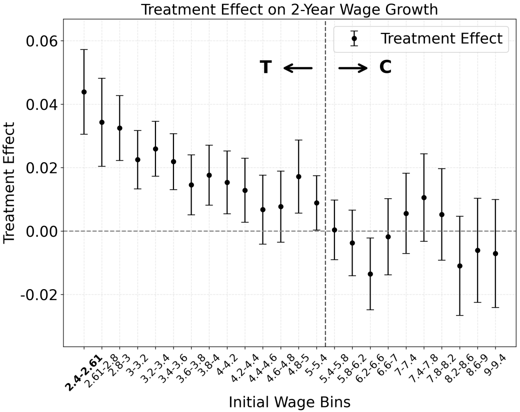
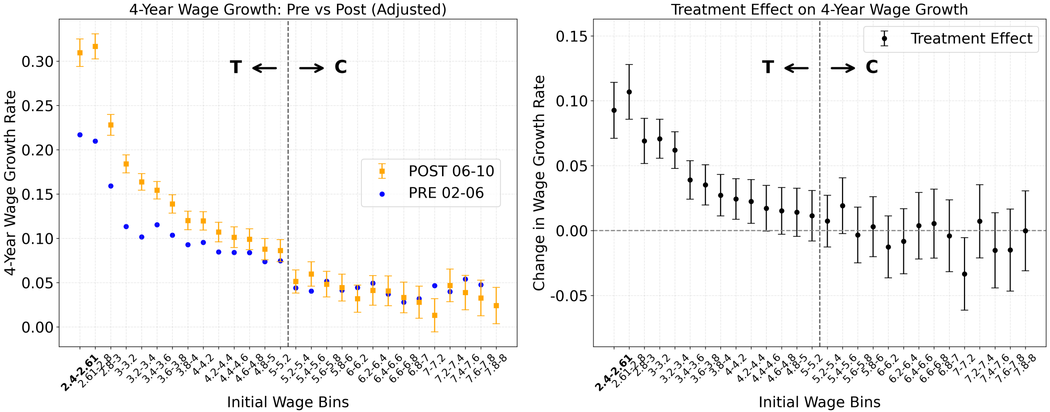
  - Effects Commensurate with MW Increase

Results - Wage Growth (h=2)

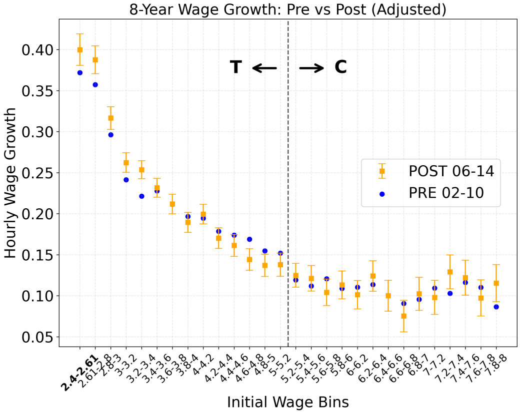


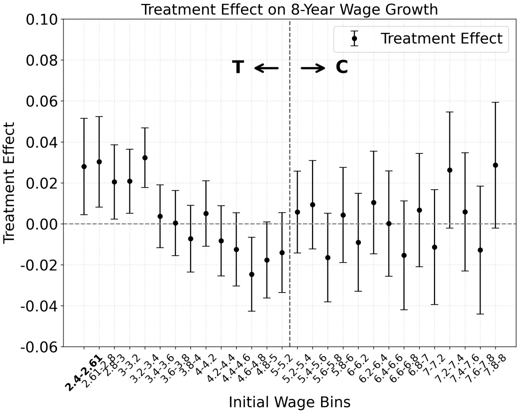


Results - Wage Growth (h=4)



Results - Wage Growth (h=8) Synthetic PRE





Key Takeaways

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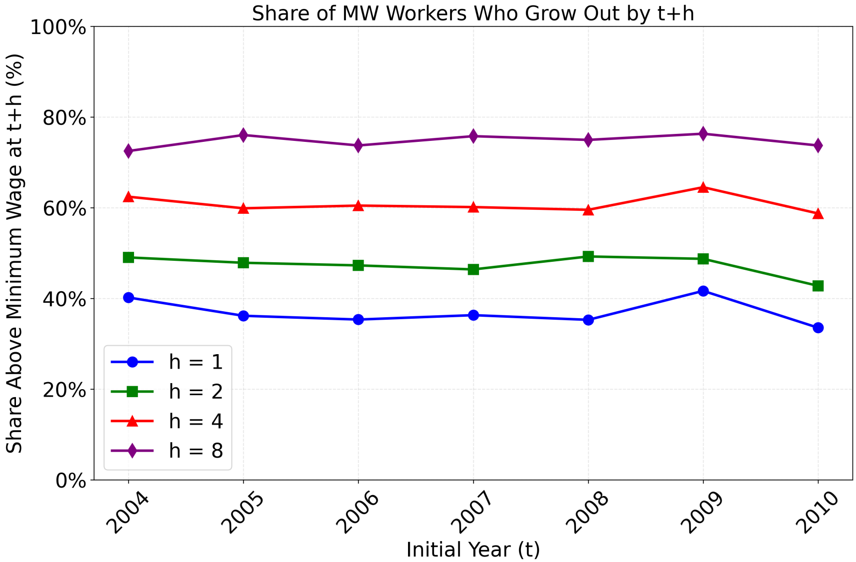
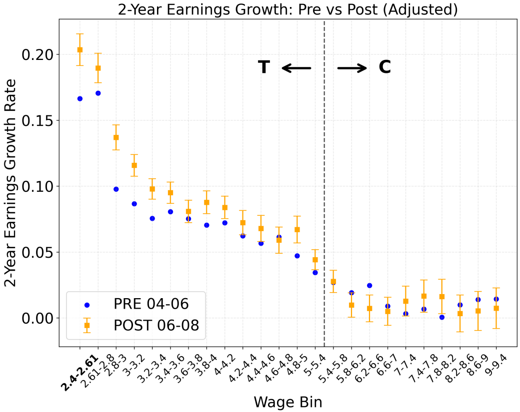
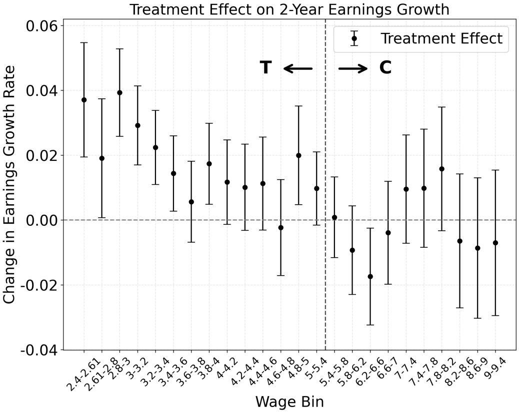
- Next: Why Transitory Effects?
  - Workers Grow Out of the MW Exposure
  - Weak Responses on Proxy Variables for Human Capital Accumulation

Growing-Out of the Minimum Wage

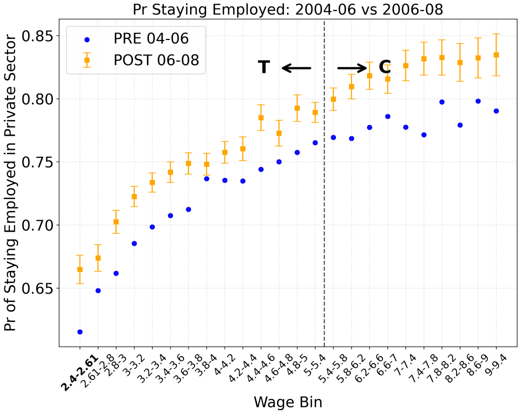


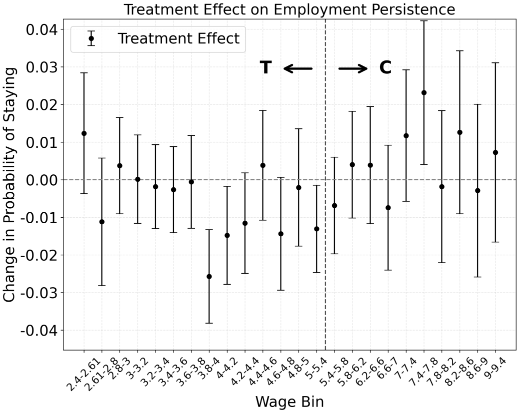
Responses - Earnings = Wage × Hours



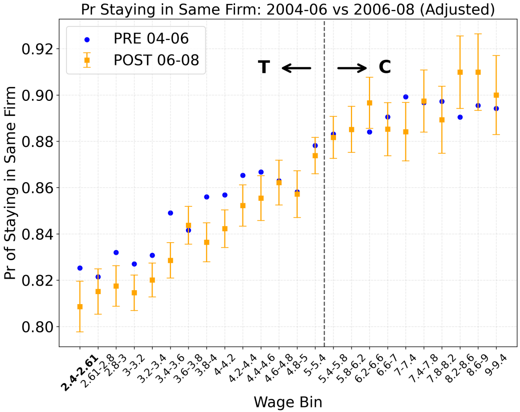


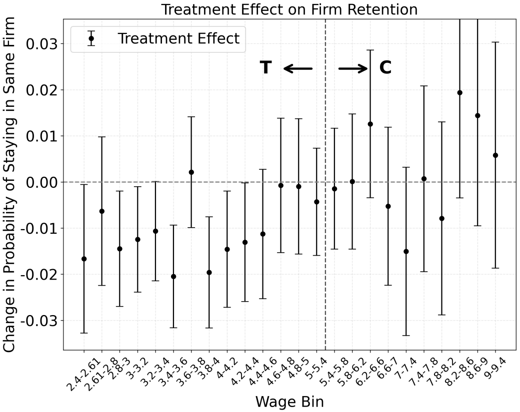
Responses - Employment (Extensive Margin)



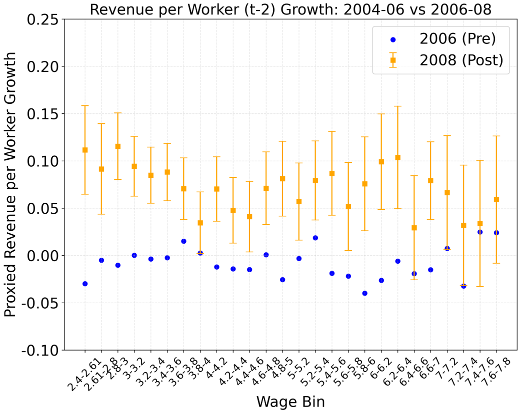


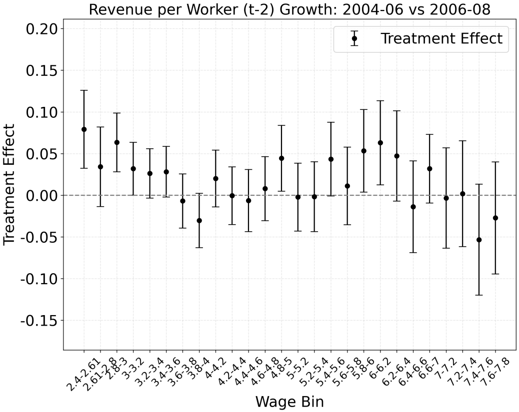
Responses - Firm Retention



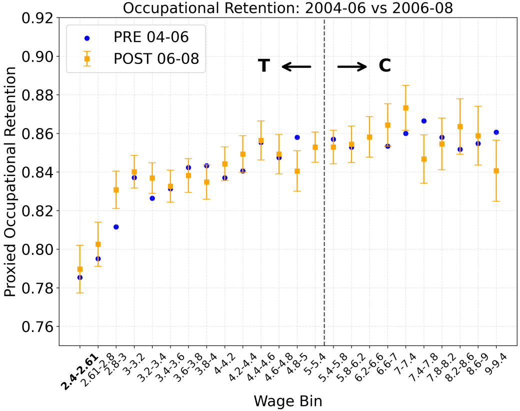


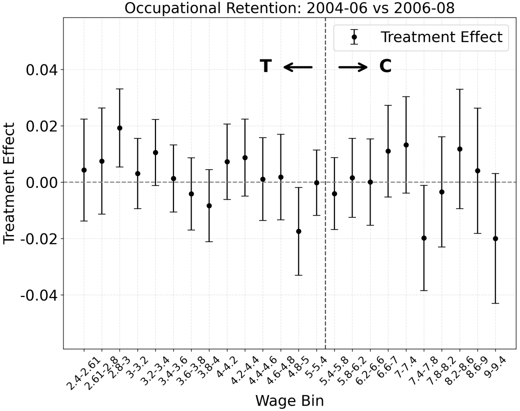
Responses - Reallocation Quality (Firm's Revenue per Worker)



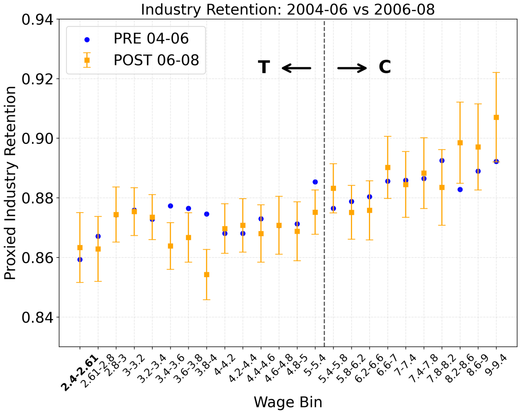


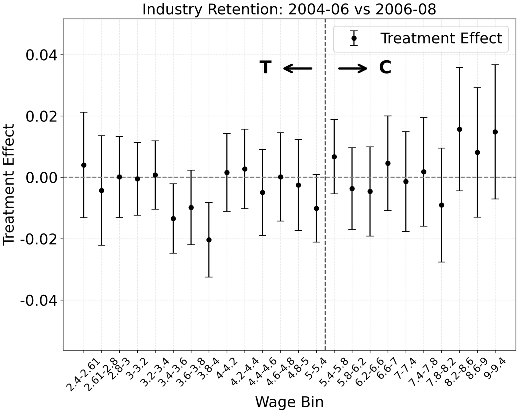
Responses - Occupational (4D) Retention



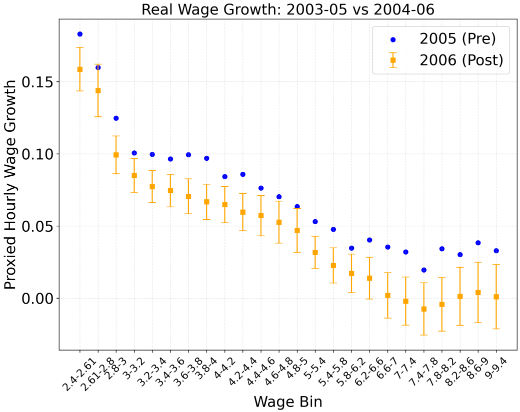


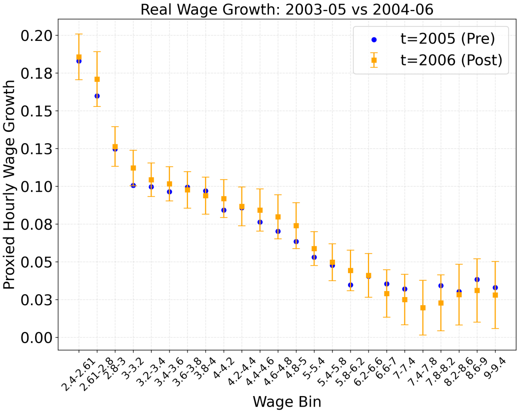
Responses - Industry (4D) Retention





Placebo Results - Wage Growth (h=2)





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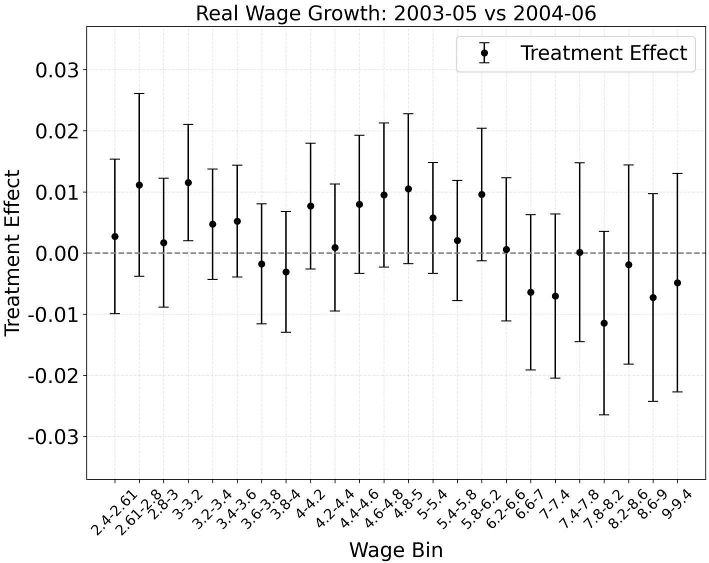

Placebo Results - Wage Growth (h=3)