The Effect of Minimum Wages on Low-Wage Jobs: Evidence from the United States Using a Bunching Estimator

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Motivation

- To date, most attention on measuring MW effect on employment has been on specific subgroups:
  - **demographic groups** (e.g., teens) Neumark, Salas and Wascher (2015), Allegretto et al. (2016)
  - **industries** (e.g., restaurants, retail): Card and Krueger (2000), Dube, Lester and Reich (2010, 2016), Giuliano (2013)
  - **incumbent workers with low-wages** before the minimum wage increase: Currie and Fallick (1996), Clemens and Wither (2016)
- Some key lessons from this research
  - Near consensus of findings of small-to-no employment effects on restaurants in the short-to-medium-run
  - Effects on teen and restaurant worker flows tend to be stronger than effects on employment levels

Motivation

- Little of this important research estimates a **total employment effect** on the low-wage workforce
- Policy work generally applies estimates from research on teens and restaurants to the entire workforce
- 2014 CBO report tried to estimate a total effect but noted the lack of research:

  "[I]n part because they were the most commonly studied group, CBO arrived at a teen-employment elasticity...[and] then synthesized the teen elasticities with broader research to construct elasticities for adults."

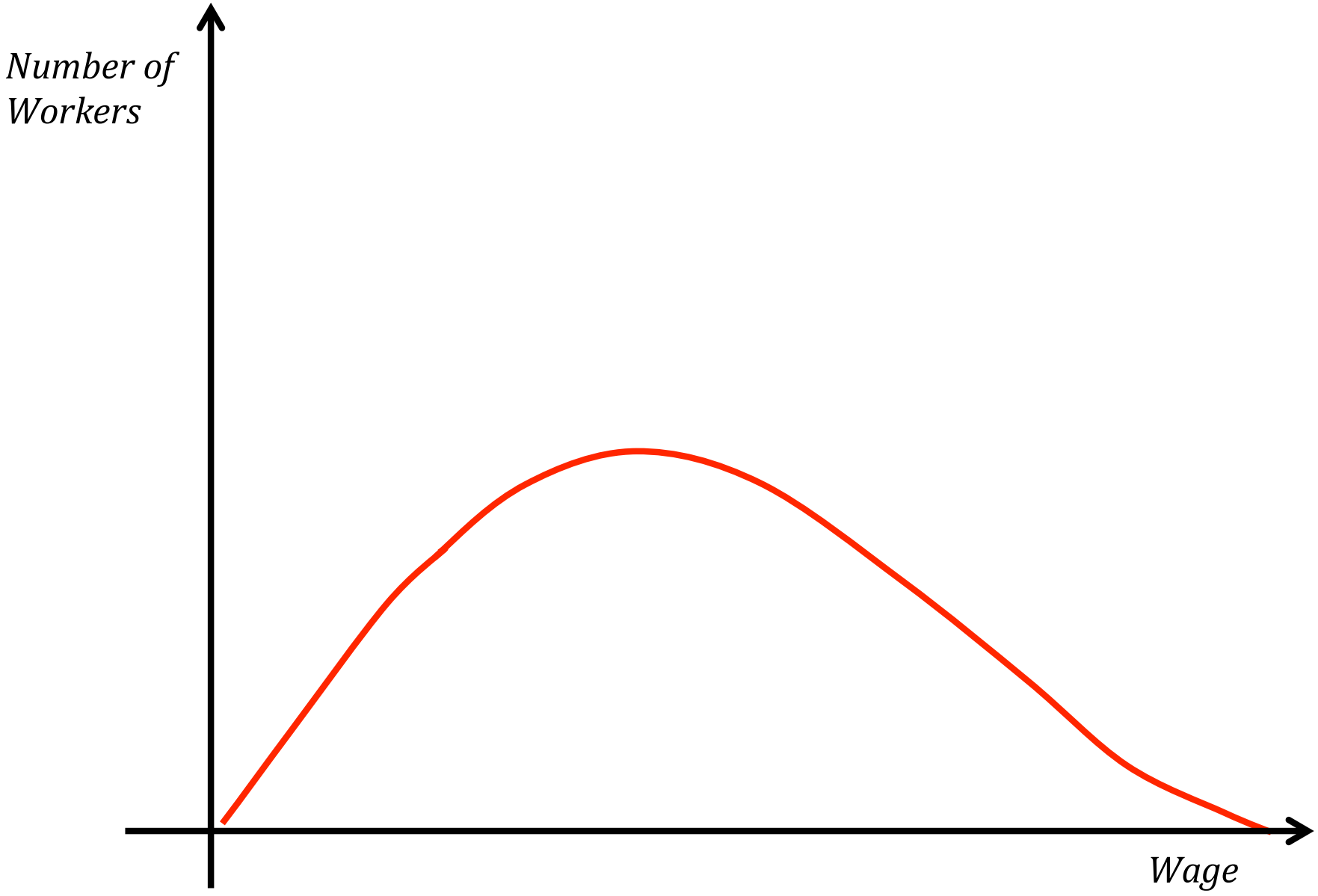
Motivation

- Some research, notably on wage inequality, has focused on wage effects across the wage distribution (Lee 1999, Autor Manning Smith 2016)
  - Important lesson: the minimum wage plays a significant role in reducing wage inequality between the bottom and middle of the wage distribution
  - Important caveat: these estimates effectively assume there are no employment effects
- Our paper overcomes these challenges by
  - estimating the change in the **entire frequency distribution** of wages, and calculating employment effect throughout the distribution
  - using "bunching" at the bottom of wage distribution to assess overall **employment** and **wage** impact for low-wage workers

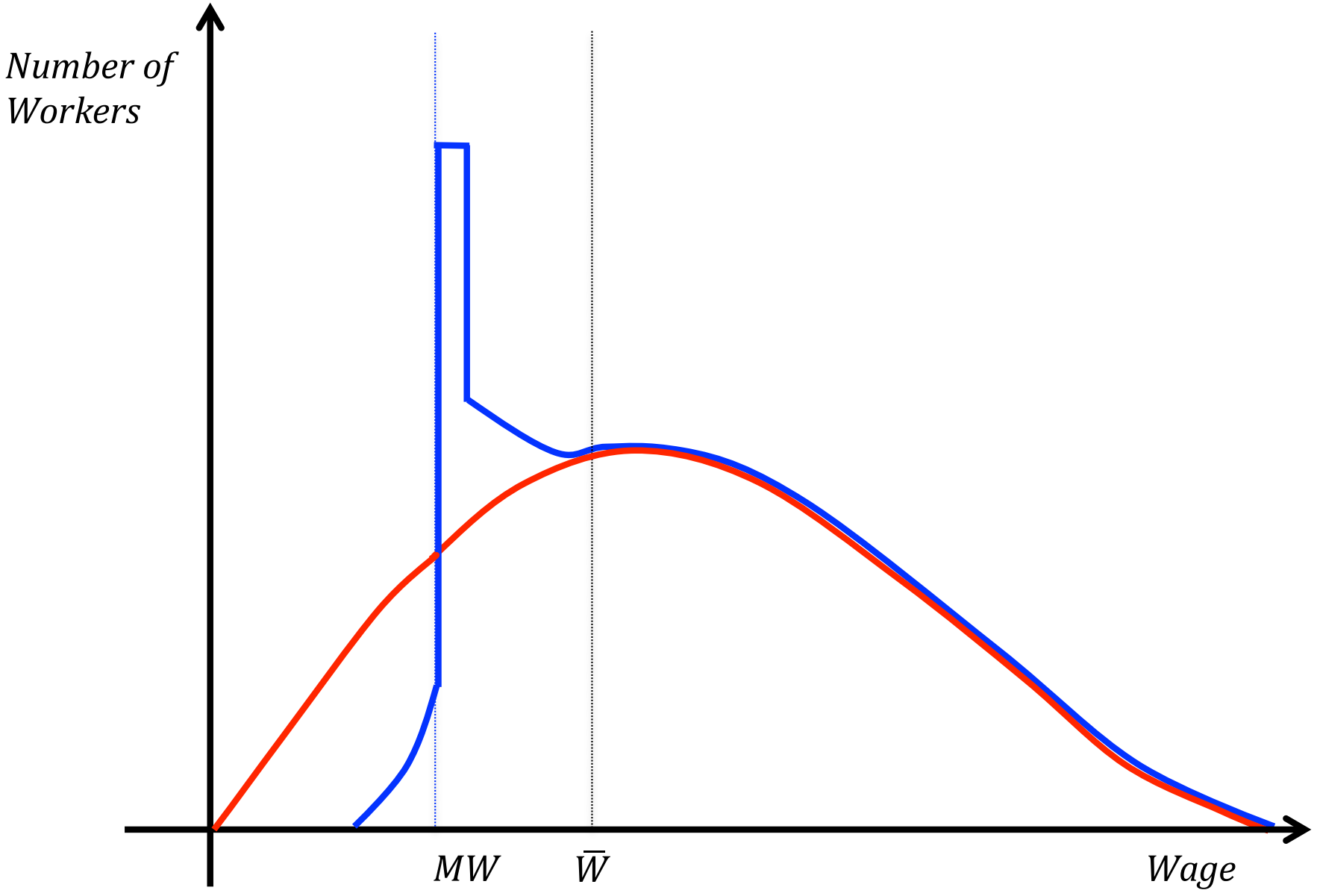
Preview of findings

- For the entire low-wage workforce, **employment** effects close to zero (not statistically signficant) but sufficiently **precise** to rule out sizable effects
- Statistically significant **average wage** increase for affected workers ($\sim 7\%$)
- No substantial **labor substitution effects** across skill-groups, or occupations in response to policy
- Wage increase **spillovers** that die out \$3 above the minimum wage
- **Spillover** effects accrue mostly to **incumbent** workers, not new entrants

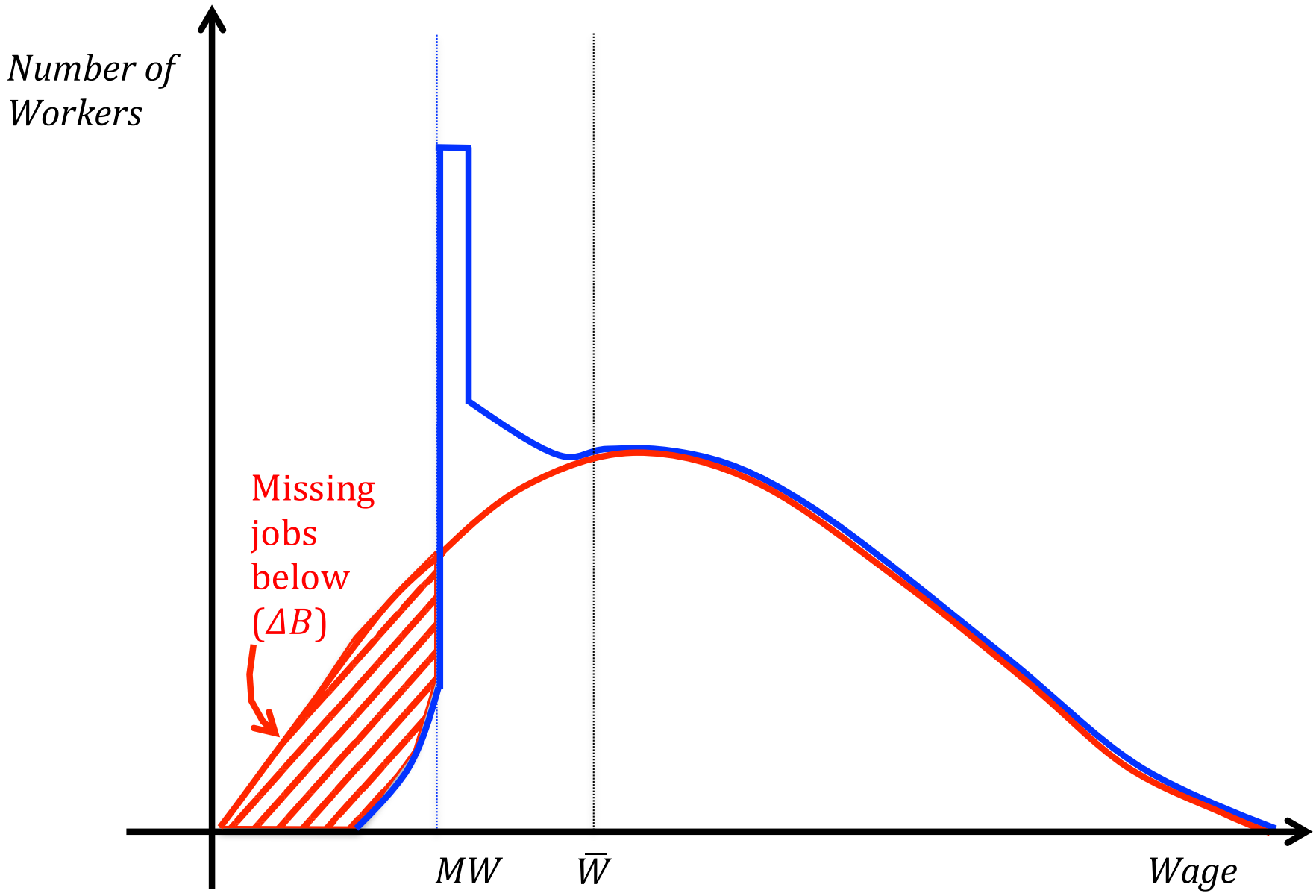
Wage distribution - no minimum wage



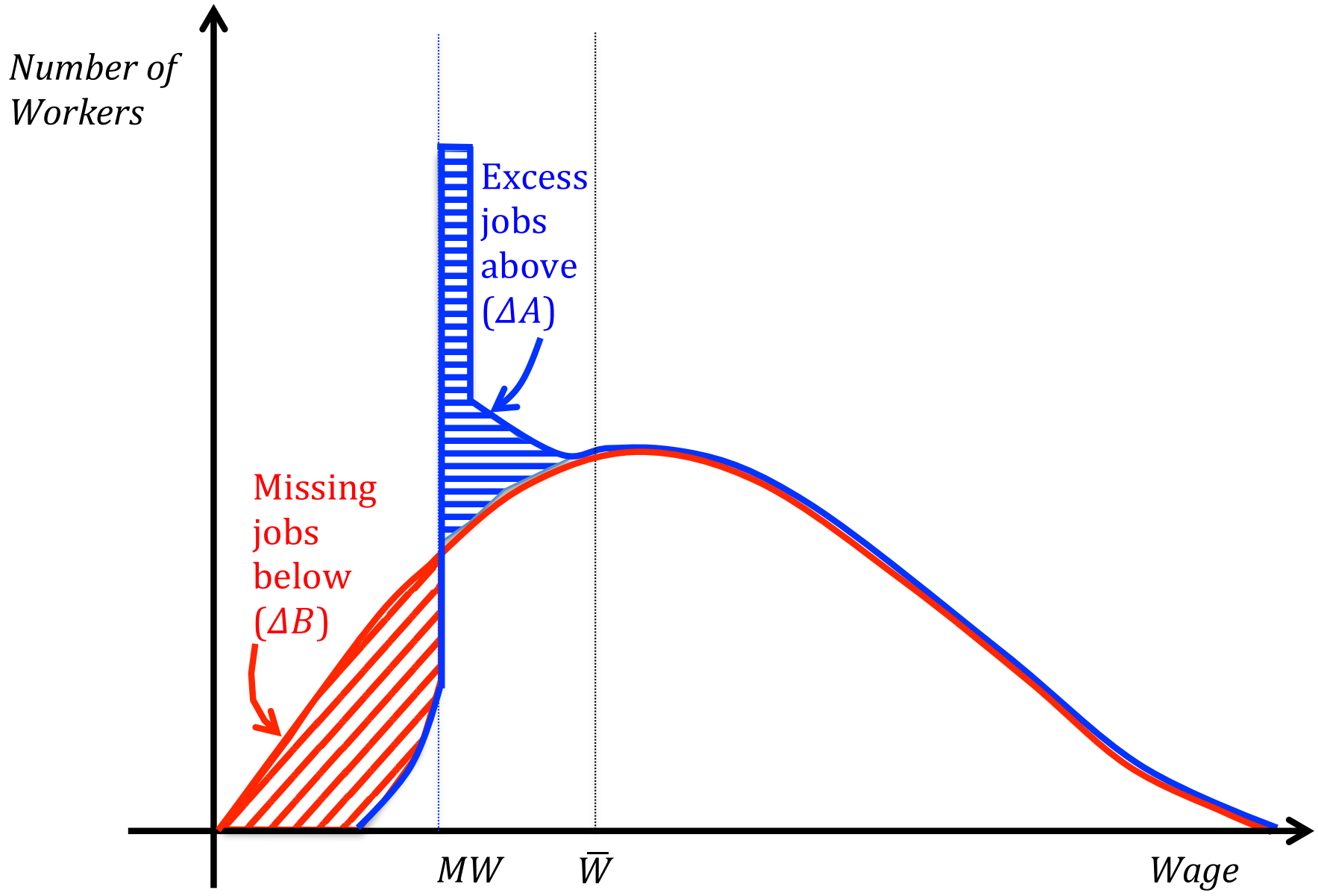
Wage distribution - with minimum wage



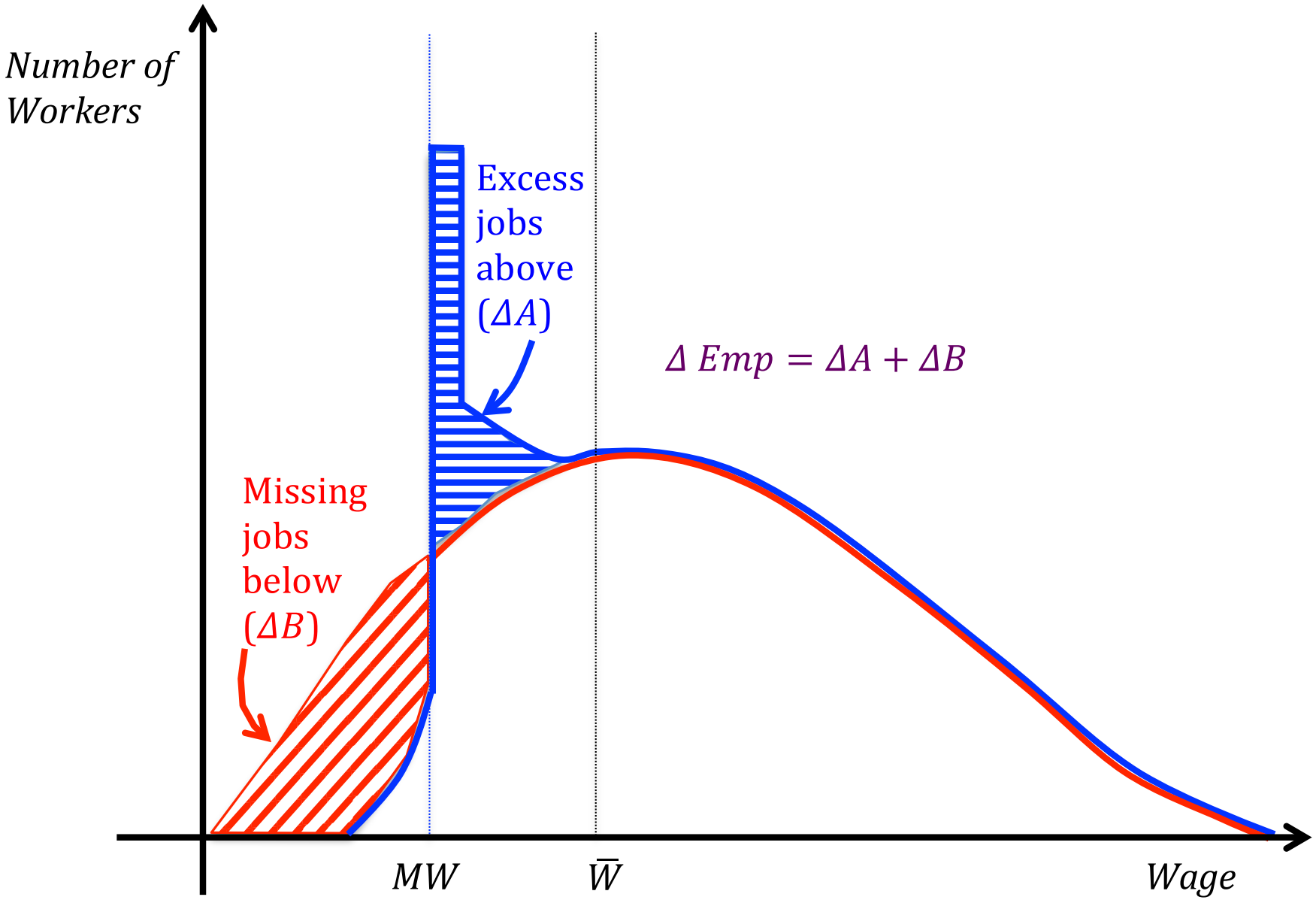
Missing jobs below



Excess jobs above



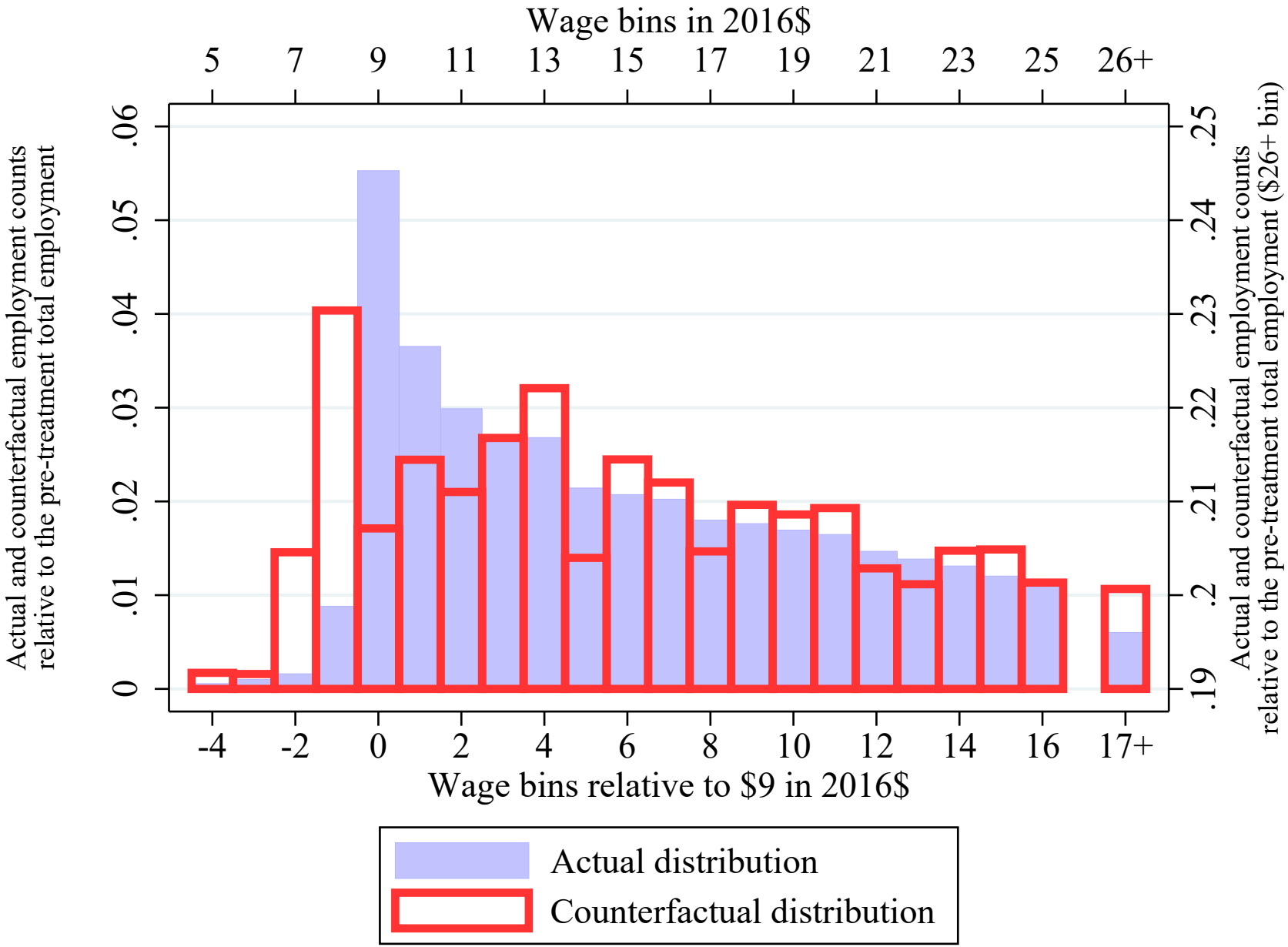
The bunching approach to estimating the employment effect



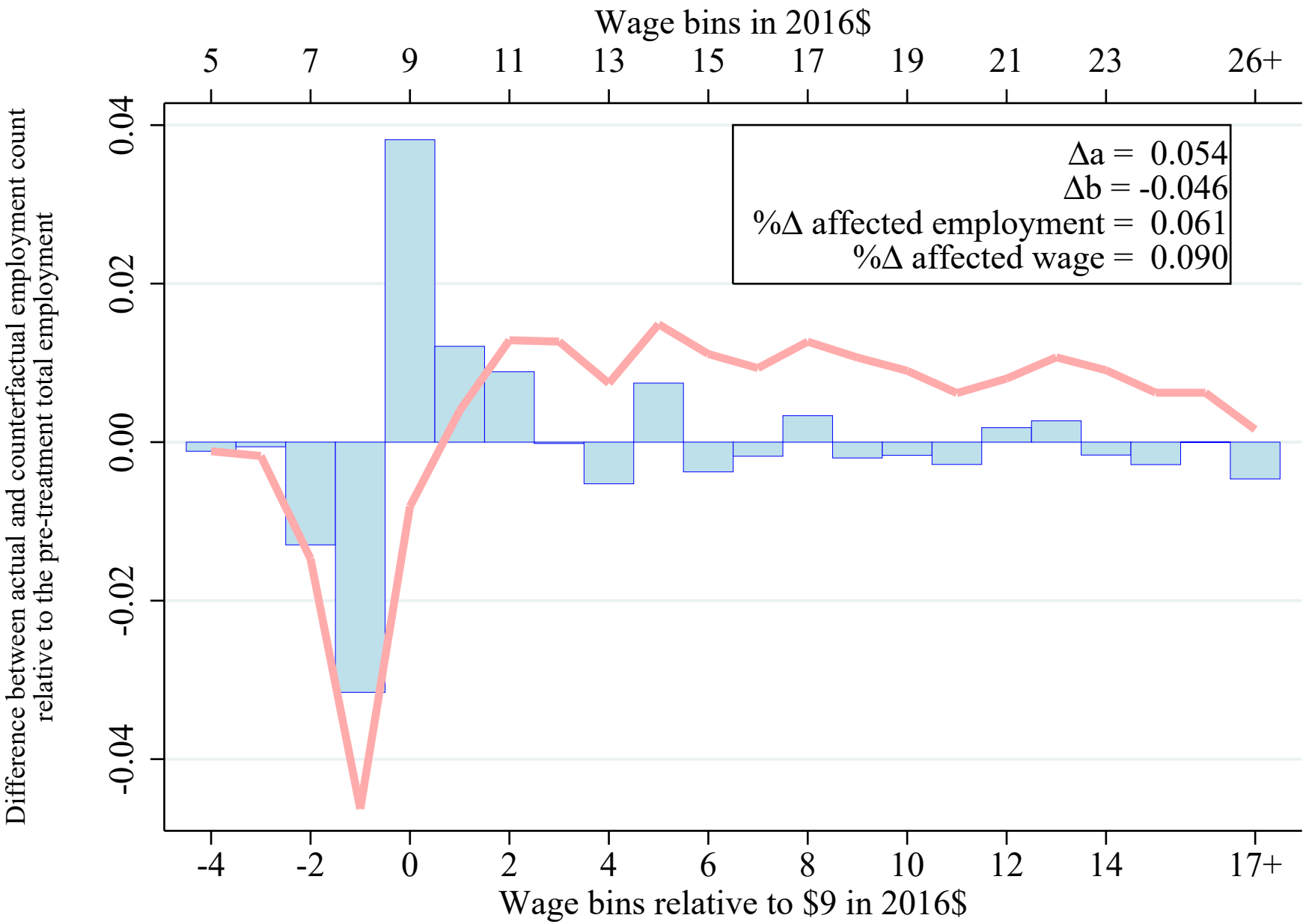
Case study: Washington state

- During 1999-2000, WA state raised its minimum wage from \$7 to \$9 (in 2016\$) and indexed the minimum wage to inflation
- WA also reports hourly wage in their admin data (this is rare)
- Pre-treatment period: 1998
- Post-treatment period: 2000-2004
- Treated state: WA (admin data)
- Control states: all states without MW increase during 1998-2004 (CPS data)
- Bunching estimator
  - Actual WA = actual WA average 2000-2004
  - Counterfactual WA = 1988 to 2000-2004 change in comparison group, plus 1998 actual WA

Case study: Washington state



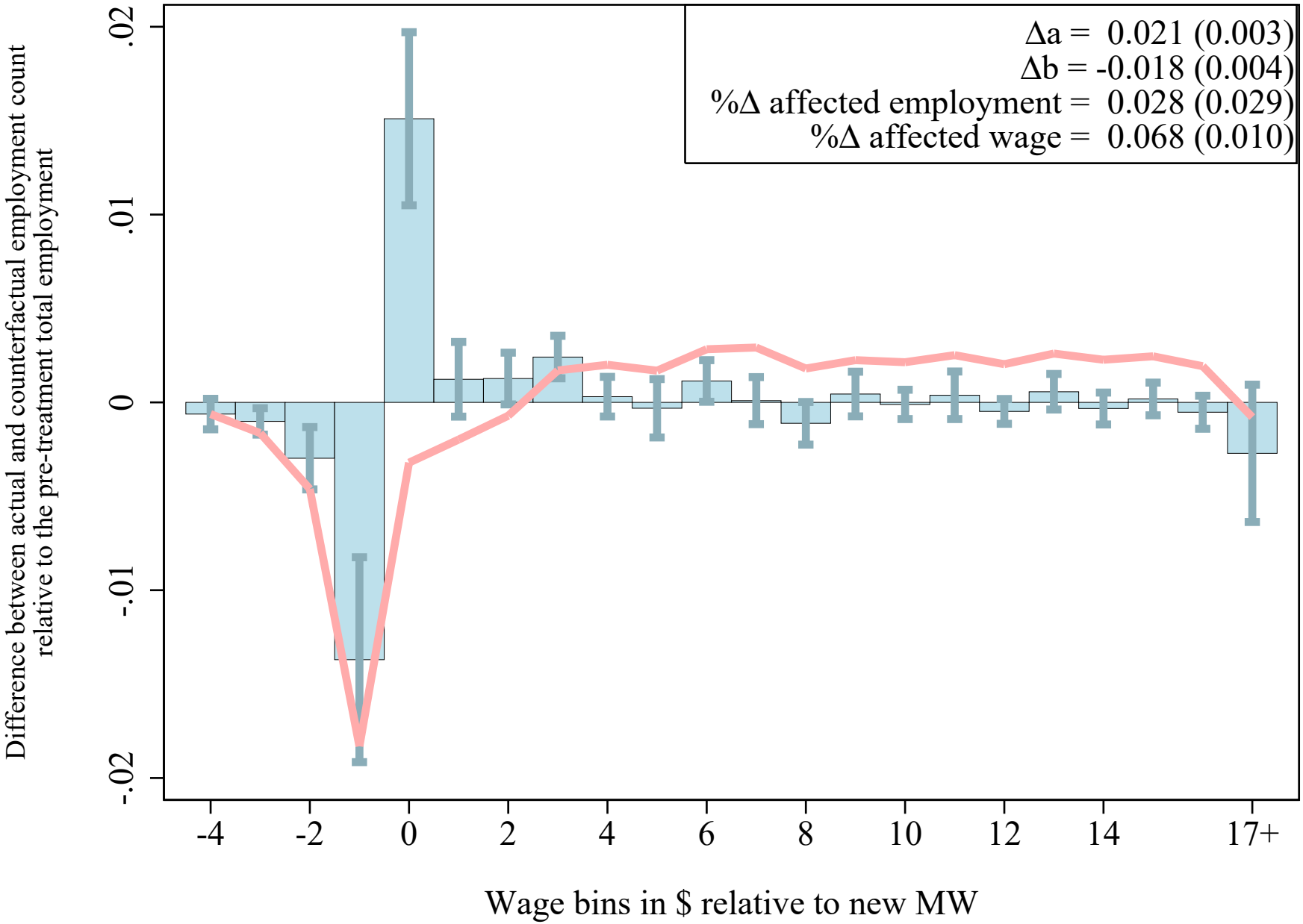
Case study: Washington state



Extend to multiple events

- Use 138 state-level minimum wage increases over 1979-2016
  - excludes small increases (<\$0.25, or <2% of workers directly affected)
  - excludes federal increases (control states do not have covered workers earning below the new federal minimum wage)
- Data: CPS panel dataset of employment counts: State $\times$ \$0.25 real wage bin $\times$ time (in quarters)
- Event-study-based regression framework: outcome is state-wage bin-time employment per capita
- Examine changes up to five years after the minimum wage increase
- Calculate the change in missing jobs, excess jobs, total employment change, and total wage change

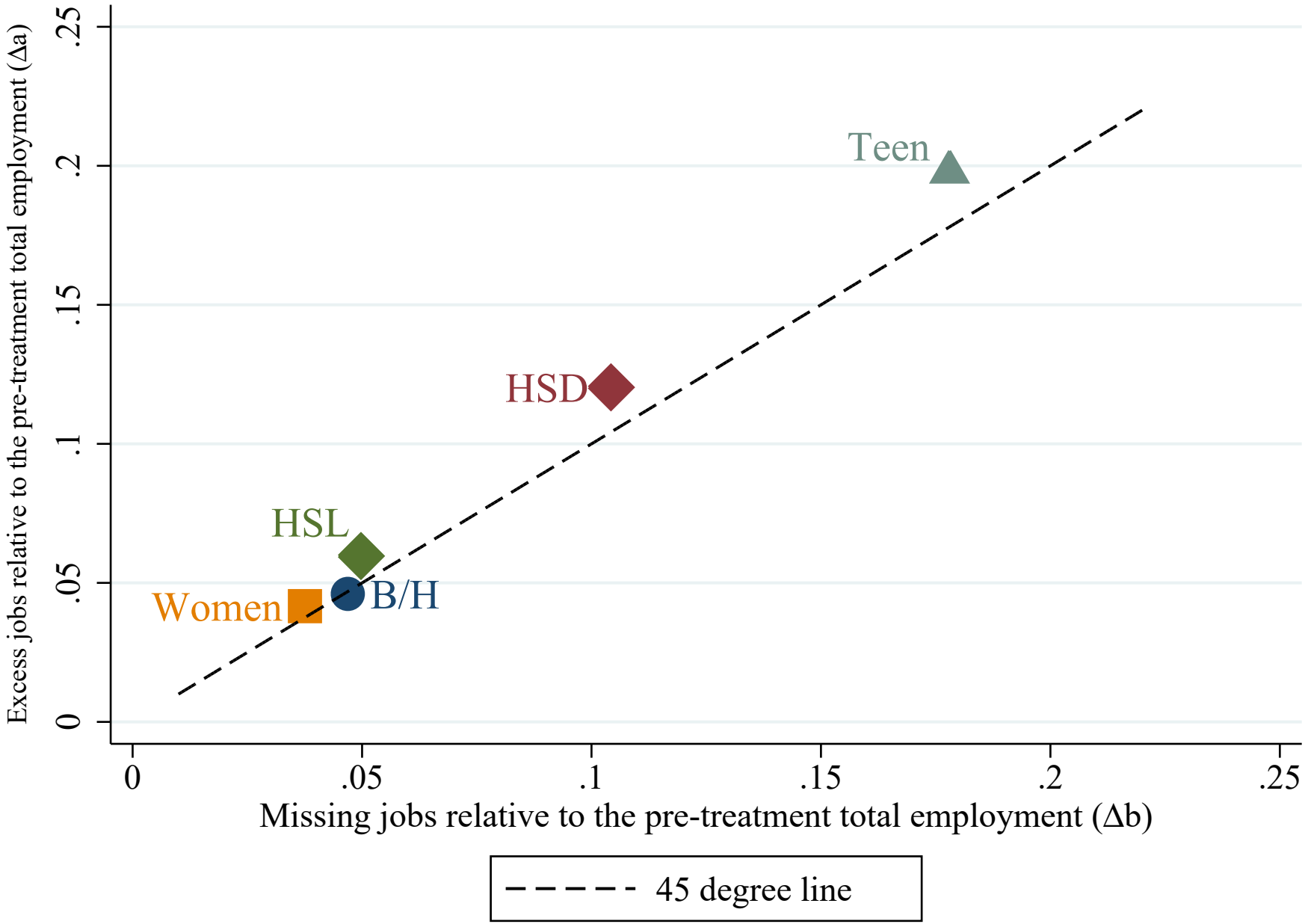
Effect of the minimum wage on the wage distribution



Key findings

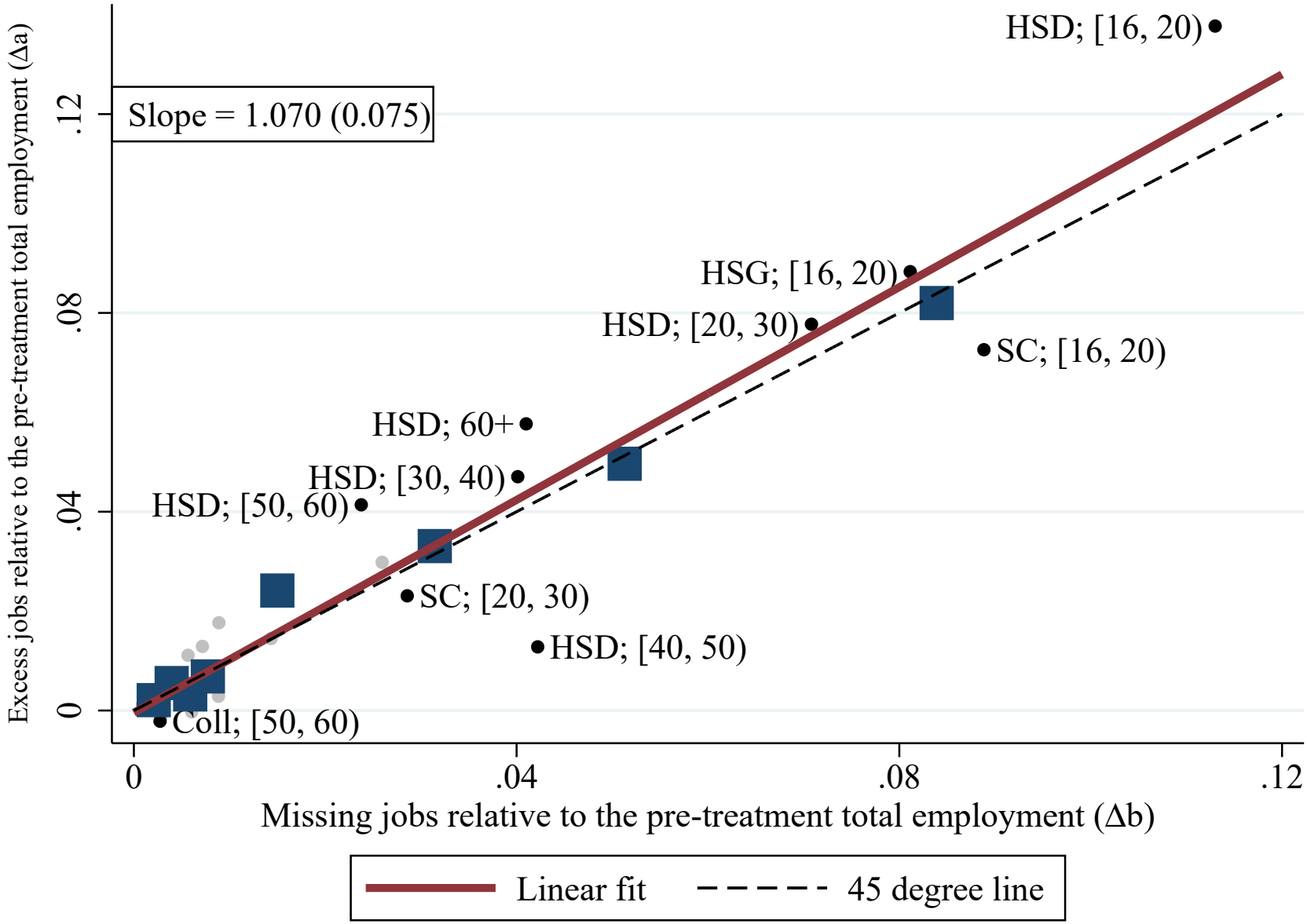
- Clear fall in jobs paying below new minimum (i.e., a clear "bite")
- Nearly equally sized rise in jobs paying at or above new minimum
- Little change in the upper tail
  - helps confirm that we are isolating the effect of the minimum wage
- Moderate-sized spillover effects die out \$3 above the minimum wage
- Statistically significant average wage increase for affected workers ($\sim 7\%$)
- Employment effects for affected workers close to zero (not statistically signficant)

Effect of the minimum wage by demographic group



Effect of the minimum wage by demographic group

23 education-level by age-bin groups

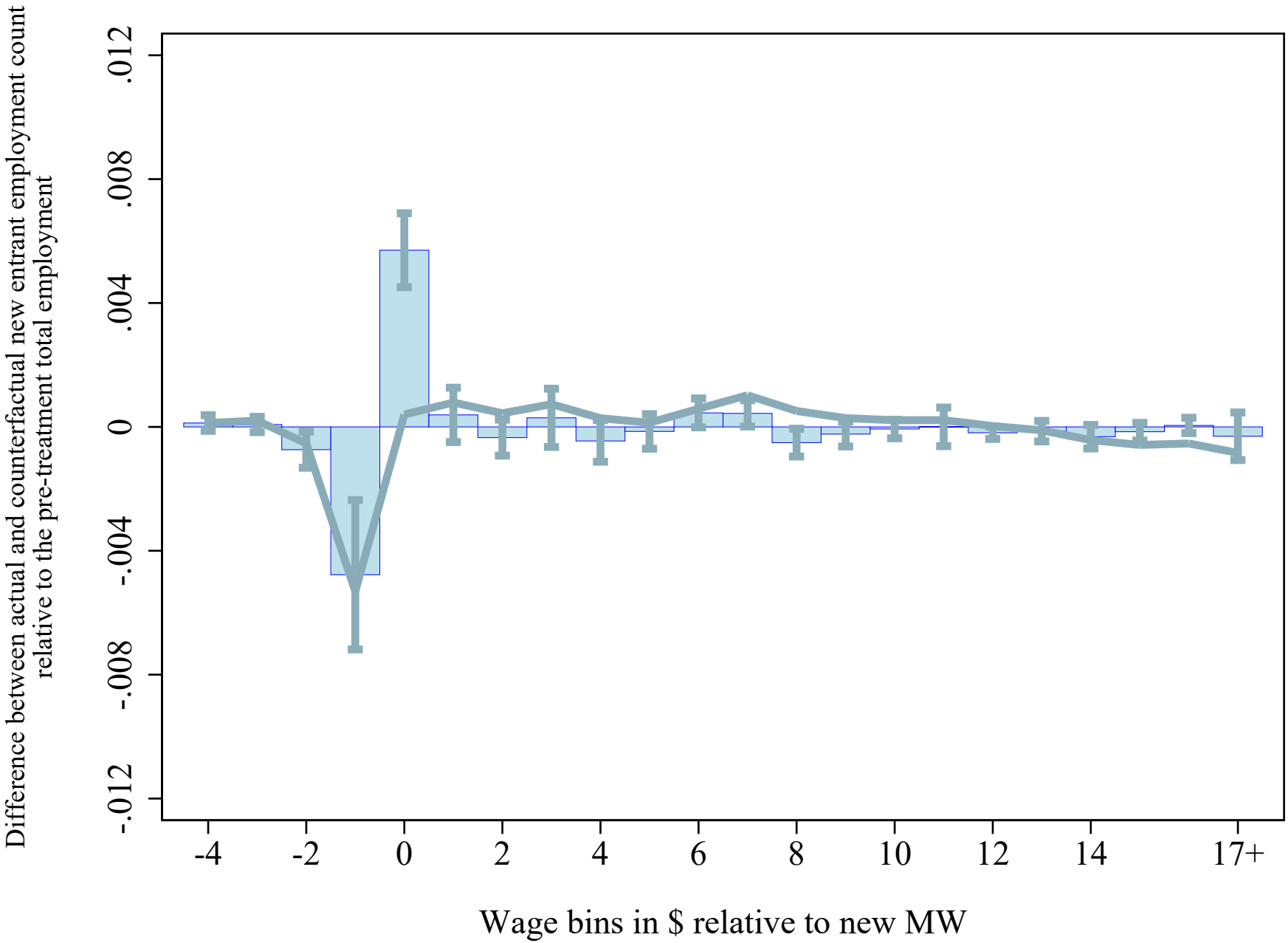


Effects on incumbents and new entrants

- The CPS data reinterviews respondents after one year
- We can partition the total sample of current wage earners into
  - Incumbents: working last year
  - New entrants: not working last year
- Potentially important dimension given the high degree of churn in the low-wage labor market
- Findings:
  - Somewhat larger bite for incumbents than new entrants
  - Wage increase for affected incumbents (9.5%) vs new entrants (1.9%)
  - Total low-wage employment effect in both cases is close to zero

Effect of minimum wage on incumbents

Effect of minimum wage on new entrants



Conclusions

- There is increasing interest in understanding the employment effects of minimum wages on all low-wage workers, not just a few subgroups like teenagers and restaurant workers
- Our new approach does just that, by transparently focusing on the bunching of the wage distribution around the new minimum wage
- Provides new estimates of
  - employment effects for large variety of sub-groups
  - wage spillover effects

Conclusions

- MW elasticities for total employment less negative than some notable estimates
  - this paper: 0.024, 95%CI: $[-0.025, 0.073]$
  - Meer and West (2015): -0.07
  - Clemens and Wither (2015): -0.06
- Our approach can be useful for policy evaluation as we face increasingly higher minimum wages:
  - average share of employment below new MW in our sample $\sim 9\%$
  - share below new MW in CA, NY likely to eventually be $> 20\%$
  - can be adopted to assess heterogeneity by big bites