

**Appendix D**

# Labor Market Impact of the Sprint- T-Mobile Merger

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# New Research on Monopsony

- “Monopsony”: employer power in labor markets
  - Inelastic labor supply to the firm: wage-setting power for employers
  - $Wage < \text{Marginal Product of Labor}$
- Causes:
  - Concentration
  - Discrimination and market segmentation
  - Search frictions
  - Job lock

# Antitrust and Labor

- If labor markets are not competitive, employers have wage-setting power.
- That power would likely increase due to a merger.
- Hence the merger would “substantially lessen competition” in labor markets.

# Approach

- Define labor markets and calculate the change in concentration in those markets due to the Sprint-T-Mobile merger.
- Given empirical estimates of the effect of concentration on earnings, estimate the earnings effect by labor market.

$$\log \left( \frac{w_{i,post}}{w_{i,pre}} \right) = \beta \log \left( \frac{HHI_{i,post}}{HHI_{i,pre}} \right)$$

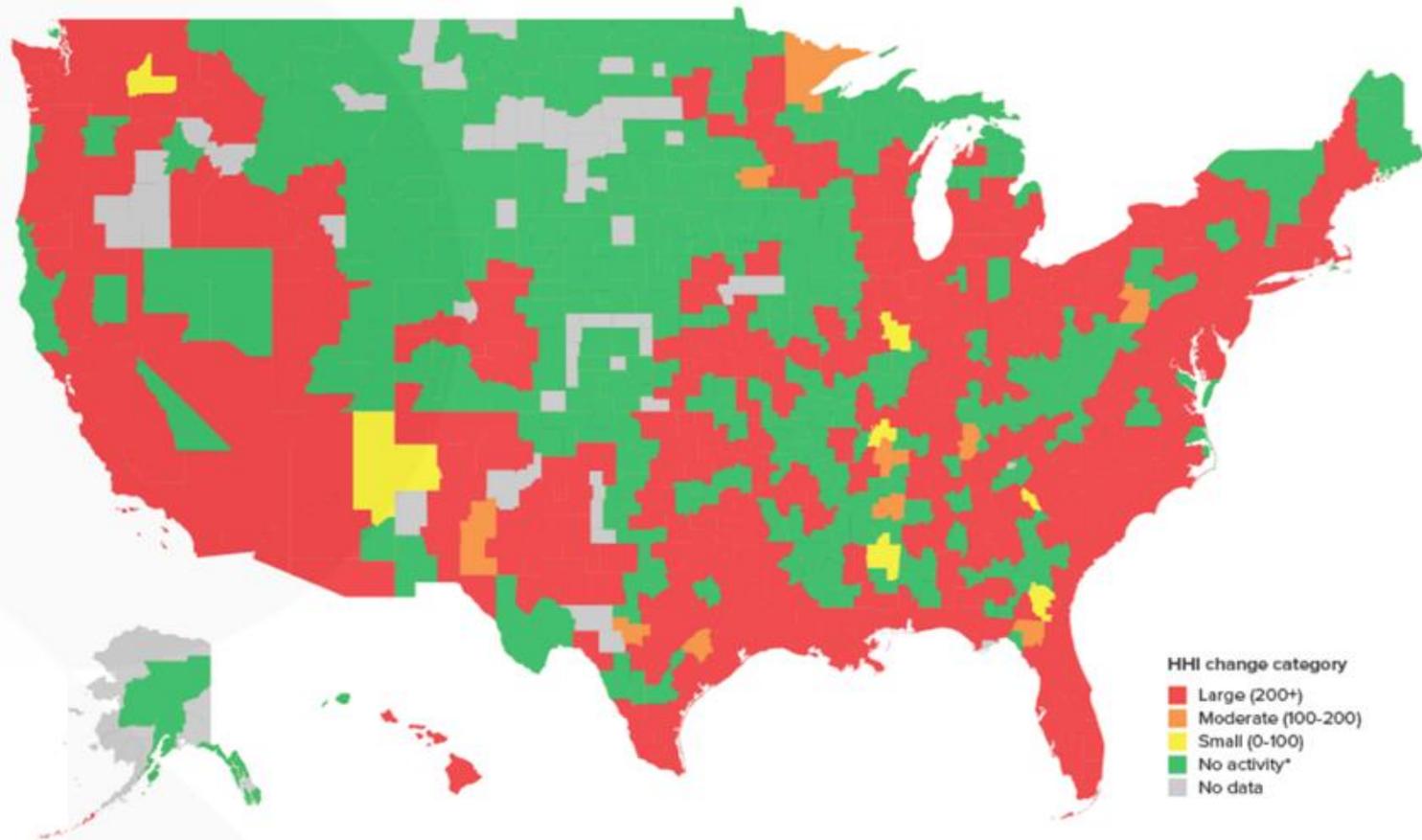
# Four Estimates of $\beta$

- Three empirical studies of the effect of variation in labor market concentration on earnings:
  - Azar, Marinescu, Steinbaum (2017): job-posting data, markets defined by commuting zone & SOC-6 occupations. We use OLS & IV estimates.
  - Benmelech, Bergman, Kim (2018): manufacturing employment data, markets defined by county and SIC-4 industries.
  - Rinz (2018): employment data for all industries, markets defined by commuting zone and SIC-4 industries.

# Market Definition

- We define the retail labor market affected by this merger as consisting of the four major wireless companies, including company stores and authorized dealers as well as pre-paid affiliates, by commuting zone.
- Altering the market definition does not meaningfully change the estimated  $\beta_s$ , but it does affect the change in concentration.
- How likely are wireless retail workers to take jobs in other retail sectors if wages are cut?
  - Training and experience specific to wireless plans, equipment, & company apps.
  - Experimental evidence (online labor markets) shows low responsiveness to wage variation, regardless of market definition. (Dube, Naidu et al 2019)
  - Concentration is still a good proxy for market power, based on applications elasticity to wage variation. (Azar, Marinescu, Steinbaum 2019)

## Predicted change in concentration of retail wireless labor market if Sprint and T-Mobile merge, by commuting zone



\*Commuting zones without both active Sprint and T-Mobile stores

**Note:** The map shows, for each commuting zone, the change in the Herfindahl-Hirschman Index, a standard measure of market concentration, applied in this context to labor market concentration. Mergers resulting in highly concentrated markets that involve an increase in the HHI of more than 200 points will be presumed to be likely to enhance market power per the Justice Department/Federal Trade Commission Horizontal Merger Guidelines.

# Earnings Effect in the Largest Markets

**Predicted decline in retail wireless worker weekly earnings from a Sprint–T-Mobile merger, by commuting zone, ranked by population size**

Rank (by population)	Commuting zone	Azar et al. (OLS)	Azar et al. (IV)	Benmelech et al.	Rinz
1	<i>Los Angeles, CA</i>	-\$16.96	-\$55.69	-\$9.14	-\$14.56
2	<i>New York, NY</i>	-\$18.91	-\$62.24	-\$10.07	-\$16.23
3	<i>Chicago, IL</i>	-\$22.77	-\$74.71	-\$11.89	-\$19.54
4	<i>Houston, TX</i>	-\$18.58	-\$61.03	-\$10.03	-\$15.95
5	<i>Newark, NJ</i>	-\$24.01	-\$79.14	-\$11.74	-\$20.61
6	<i>San Francisco, CA</i>	-\$17.16	-\$56.59	-\$8.10	-\$14.73
7	<i>Boston, MA</i>	-\$11.82	-\$39.05	-\$5.55	-\$10.14
8	<i>Washington, DC</i>	-\$19.73	-\$64.90	-\$9.63	-\$16.93
9	<i>Atlanta, GA</i>	-\$29.38	-\$96.63	-\$15.13	-\$25.22
10	<i>Philadelphia, PA</i>	-\$12.37	-\$40.88	-\$5.80	-\$10.61