

# Labor Demand: Minimum Wage and Monopsony

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# Introduction

- ▷ In perfectly competitive labor market, each firm faces a perfect elastic labor supply
- ▷ If a firm announces a 5% wage cut for its employees, how many of them would leave? (Q: what if a 5% wage rise?)
- ▷ This is why each firm takes market wage as given under perfect competition
- ▷ We know this is not true in most of the real world cases
- ▷ Let's modify our model to cater for and study this part of realistic

## You can read [Manning \(2003\)](#) introduction to see how an economist argue an economics theoretical assumption does not fit the realism

- ▷ *"The main advantage of the monopsonistic approach is to make the way one thinks about labor markets more 'natural' and less forced"*
  - ▷ workers do not perceive labor markets as frictionless
  - ▷ employers perceive they have discretion over the wages paid
- ▷ *", and to make life more comfortable for labor economists"*
  - ▷ existence of wage dispersion for identical workers, w/o unobserved ability
  - ▷ employers can pay for general training, w/o specific human capital
  - ▷ minimum wage substantially raises the pay and does not appear to harm employment

Also see [Manning \(2011\)](#) section 5 for "why [was] an imperfect competition perspective not pervasive in labor economics?"

# Nobel Prize 2021 *(see his recent public lecture and early academic lecture)*

## David Card Facts

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David Card

The Sveriges Riksbank Prize in Economic Sciences in  
Memory of Alfred Nobel 2021

Born: 1956, Guelph, Canada

Affiliation at the time of the award: University of California,  
Berkeley, CA, USA

Prize motivation: “for his empirical contributions to labour  
economics”

Prize share: 1/2

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## Work

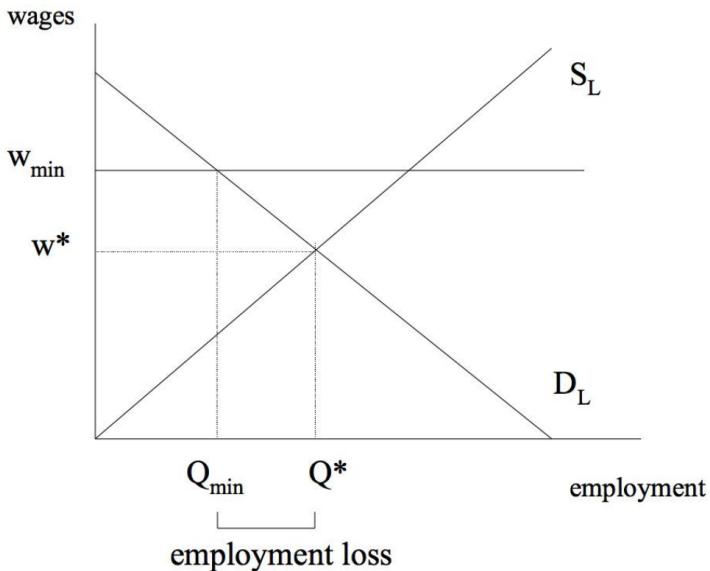
Many of the big questions in the social sciences deal with cause and effect. Some of these questions are possible to answer using natural experiments, in which chance events or policy changes result in groups of people being treated differently. Using natural experiments, David Card has analysed the labour market effects of minimum wages, immigration and education. The results showed, among other things, that increasing the minimum wage does not necessarily lead to fewer jobs, as was previously thought.

# Roadmap

1. The Puzzle of Minimum wage
2. Monopsony Model: basic
3. Monopsony Model: math and oligopsony \*
4. Monopsony Model: microfoundation
5. Revisiting The Minimum Wage Effect †

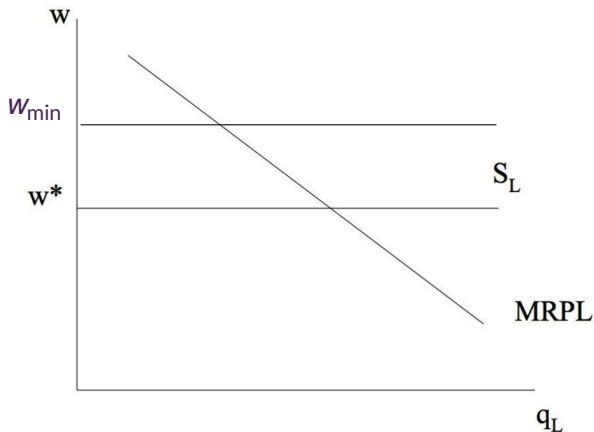
# Minimum wage in a perfectly competitive market

(borrowed from David Autor's lecture notes)



# Individual price-taking firm

(borrowed from David Autor's lecture notes)



MRPL = Marginal Revenue Product of Labor  $\Rightarrow$  "What the marginal worker produces."

(Q: why downward sloping MRPL?)

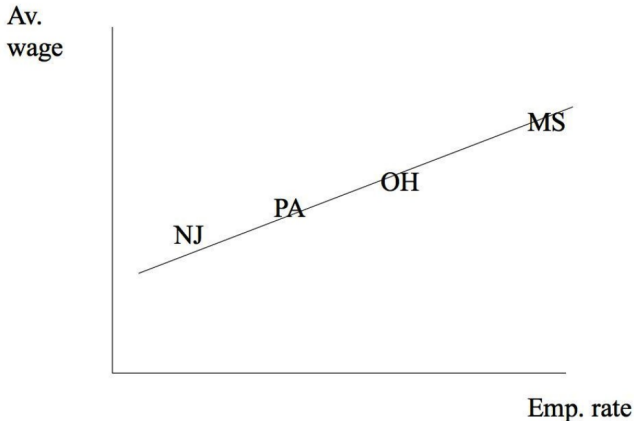
# Perfectly competitive market and price-taking

- ▷ Why firms are price(wage) takers?
  - ▷ Labor supply is perfectly elastic (infinitely large)
- ▷ When labor supply is perfectly elastic?
  - ▷ Number of firms in the market are close to infinity / Each firm is close to be infinitesimal
  - ▷ Finite firms do endless (Bertrand) price(wage) competing
  - ▷ No searching cost or other frictions
  - ▷ No other job characteristics involved in workers' job decisions
- ▷ What does price(wage)-taking indicate?
  - ▷ Firms face the same horizontal labor supply curve
  - ▷ Firms have no power in changing the market prices
  - ▷  $MRPL = MC = W$
  - ▷ Workers are indifferent working in any firms

# What evidence can be used to test our theory?

(borrowed from David Autor's lecture notes)

Let's suppose you find the following pattern:



Would this convince you that higher wage levels *caused* higher employment? I hope not!

## Test by using "Experiments" (Card and Krueger, 1994)

- ▷ How do employers in a low-wage labor market respond to an increase in minimum wage?
- ▷ Conventional economic theory: perfectly competitive employers cut employment  $\leftarrow$  Does this really happen?
- ▷ CK: why not do an "experiment"? (intro to casual inference)
- ▷ The quasi-experiment (definition): an increase in New Jersey's minimum wage from \$4.25 to \$5.05 per hour
  - ▷ Eastern Pennsylvania (control group) is nearby New Jersey (treatment group) and thus has similar economics conditions
  - ▷ High-wage stores (control group) within New Jersey potentially received no impact compared to low-wage stores (treatment group)
  - ▷ The rise occurred during a recession but the increase had been legislated two years earlier and decided in last-minute
- ▷ CK chose 400+ fast-food restaurants as the experiment targets

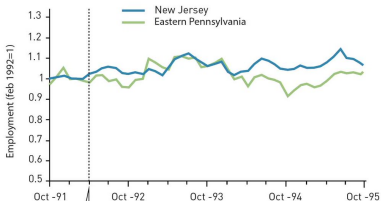
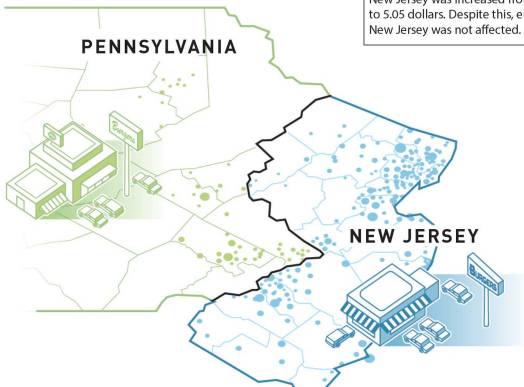
# CK1994: New Jersey v.s. Eastern Pennsylvania

## The effect of increasing the minimum wage

Card and Krueger used a natural experiment to study how increasing the minimum wage affects employment.

The researchers identified a treatment group (restaurants in New Jersey) and a control group (restaurants in eastern Pennsylvania) to measure the effect of increasing the minimum wage.

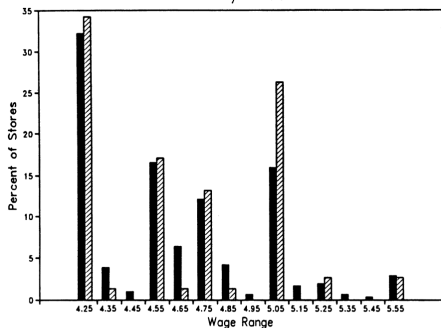
● CONTROL GROUP ● TREATMENT GROUP



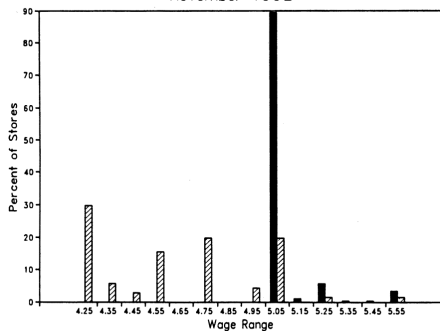
1 April 1992: The hourly minimum wage in New Jersey was increased from 4.25 dollars to 5.05 dollars. Despite this, employment in New Jersey was not affected.

# CK1994: average starting wage at fast-food stores

February 1992



November 1992



■ New Jersey    ▨ Pennsylvania

# CK1994: "difference in differences"

TABLE 3—AVERAGE EMPLOYMENT PER STORE BEFORE AND AFTER THE RISE  
IN NEW JERSEY MINIMUM WAGE

Variable	Stores by state			Stores in New Jersey <sup>a</sup>			Differences within NJ <sup>b</sup>	
	PA (i)	NJ (ii)	Difference, NJ - PA (iii)	Wage = \$4.25 (iv)	Wage = \$4.26-\$4.99 (v)	Wage ≥ \$5.00 (vi)	Low- high (vii)	Midrange- high (viii)
1. FTE employment before, all available observations	23.33 (1.35)	20.44 (0.51)	-2.89 (1.44)	19.56 (0.77)	20.08 (0.84)	22.25 (1.14)	-2.69 (1.37)	-2.17 (1.41)
2. FTE employment after, all available observations	21.17 (0.94)	21.03 (0.52)	-0.14 (1.07)	20.88 (1.01)	20.96 (0.76)	20.21 (1.03)	0.67 (1.44)	0.75 (1.27)
3. Change in mean FTE employment	-2.16 (1.25)	0.59 (0.54)	2.76 (1.36)	1.32 (0.95)	0.87 (0.84)	-2.04 (1.14)	3.36 (1.48)	2.91 (1.41)
4. Change in mean FTE employment, balanced sample of stores <sup>c</sup>	-2.28 (1.25)	0.47 (0.48)	2.75 (1.34)	1.21 (0.82)	0.71 (0.69)	-2.16 (1.01)	3.36 (1.30)	2.87 (1.22)
5. Change in mean FTE employment, setting FTE at temporarily closed stores to 0 <sup>d</sup>	-2.28 (1.25)	0.23 (0.49)	2.51 (1.35)	0.90 (0.87)	0.49 (0.69)	-2.39 (1.02)	3.29 (1.34)	2.88 (1.23)

Notes: Standard errors are shown in parentheses. The sample consists of all stores with available data on employment. FTE (full-time-equivalent) employment counts each part-time worker as half a full-time worker. Employment at six closed stores is set to zero. Employment at four temporarily closed stores is treated as missing.

<sup>a</sup>Stores in New Jersey were classified by whether starting wage in wave 1 equals \$4.25 per hour ( $N = 101$ ), is between \$4.26 and \$4.99 per hour ( $N = 140$ ), or is \$5.00 per hour or higher ( $N = 73$ ).

<sup>b</sup>Difference in employment between low-wage (\$4.25 per hour) and high-wage ( $\geq$  \$5.00 per hour) stores; and difference in employment between midrange (\$4.26-\$4.99 per hour) and high-wage stores.

<sup>c</sup>Subset of stores with available employment data in wave 1 and wave 2.

<sup>d</sup>In this row only, wave-2 employment at four temporarily closed stores is set to 0. Employment changes are based on the subset of stores with available employment data in wave 1 and wave 2.

# CK1994: other outcomes

TABLE 6—EFFECTS OF MINIMUM-WAGE INCREASE ON OTHER OUTCOMES

Outcome measure	Mean change in outcome			Regression of change in outcome variable on:		
	NJ (i)	PA (ii)	NJ-PA (iii)	NJ dummy (iv)	Wage gap <sup>a</sup> (v)	Wage gap <sup>b</sup> (vi)
<i>Store Characteristics:</i>						
1. Fraction full-time workers <sup>c</sup> (percentage)	2.64 (1.71)	-4.65 (3.80)	7.29 (4.17)	7.30 (3.96)	33.64 (20.95)	20.28 (24.34)
2. Number of hours open per weekday	-0.00 (0.06)	0.11 (0.08)	-0.11 (0.10)	-0.11 (0.12)	-0.24 (0.65)	0.04 (0.76)
3. Number of cash registers	-0.04 (0.04)	0.13 (0.10)	-0.17 (0.11)	-0.18 (0.10)	-0.31 (0.53)	0.29 (0.62)
4. Number of cash registers open at 11:00 A.M.	-0.03 (0.05)	-0.20 (0.08)	0.17 (0.10)	0.17 (0.12)	0.15 (0.62)	-0.47 (0.74)
<i>Employee Meal Programs:</i>						
5. Low-price meal program (percentage)	-4.67 (2.65)	-1.28 (3.86)	-3.39 (4.68)	-2.01 (5.63)	-30.31 (29.80)	-33.15 (35.04)
6. Free meal program (percentage)	8.41 (2.17)	6.41 (3.33)	2.00 (3.97)	4.49 (4.50)	29.90 (23.75)	36.91 (27.90)
7. Combination of low-price and free meals (percentage)	-4.04 (1.98)	-5.13 (3.11)	1.09 (3.69)	1.20 (4.32)	-11.87 (22.87)	-19.19 (26.81)
<i>Wage Profile:</i>						
8. Time to first raise (weeks)	3.77 (0.89)	1.26 (1.97)	2.51 (2.16)	2.21 (2.03)	4.02 (10.81)	-5.10 (12.74)
9. Usual amount of first raise (cents)	-0.01 (0.01)	-0.02 (0.02)	0.01 (0.02)	0.01 (0.02)	0.03 (0.11)	0.03 (0.11)
10. Slope of wage profile (percent per week)	-0.10 (0.04)	-0.11 (0.09)	0.01 (0.10)	0.01 (0.10)	-0.09 (0.56)	-0.08 (0.57)

## CK1994: interpretation

- ▷ The results are inconsistent with the predictions of a standard competitive model which predicts falling employment
- ▷ If fast-food stores face an upward-sloping labor-supply schedule, a rise in the minimum wage can potentially increase employment at affected firms and in the industry as a whole
- ▷ This same basic insight emerges from an equilibrium search model in which firms post wages and employees search among posted offers

# Roadmap

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3. Monopsony Model: math and oligopsony \*
4. Monopsony Model: microfoundation
5. Revisiting The Minimum Wage Effect †

## Monopsony: notion

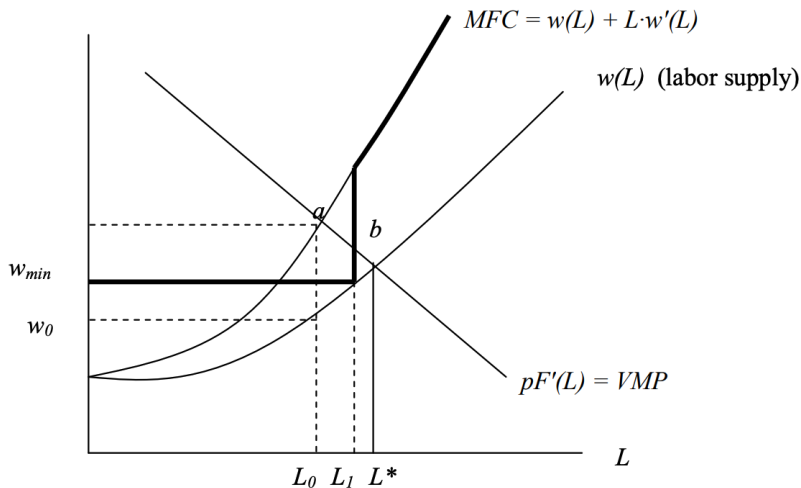
- ▷ The term monopsony simply means "One buyer, many sellers", similar to monopoly
- ▷ There is also oligopsony i.e. "Several buyers", similar to oligopoly
- ▷ It's better to take the essence as "The firm is not a price taker"
- ▷ What does it indicate?
  - ▷ A firm faces upward sloping labor supply curve
  - ▷ A firm's own demand affects its price (wage)
  - ▷  $MRPL = MC > W$
  - ▷ Workers can have different wages in different firms

## Monopsony: framework

- ▷ Firm's profit maximization problem:  $\max \pi = p \cdot F(L) - w(L) \cdot L$ 
  - ▷ Normalize product price:  $p = 1$
- ▷ FOC:  $\frac{\partial F(L)}{\partial L} - w(L) - \frac{\partial w(L)}{\partial L} \cdot L = 0$
- ▷ Trade-off:  $\underbrace{F'(L)}_{MRPL} = \underbrace{w(L) + w'(L)L}_{MC}$
- ▷ Under perfectly competitive market & price-taking:  $w'(L) = 0$  and  $F'(L) = w^*$  where  $w^*$  is the market wage
- ▷ Under monopsony, firms face an upward sloping labor supply curve, and  $MC$  increases in  $L$  (Q: why have two terms in MC?)
- ▷  $\frac{MRPL}{w} = 1 + \frac{\partial w}{\partial L} \frac{L}{w} \Rightarrow \frac{MRPL}{w} = 1 + \frac{1}{\eta} \Rightarrow w = \frac{MRPL}{1 + \frac{1}{\eta}} \equiv \mu MRPL$ 
  - ▷  $\eta$  is the elasticity of labor supply ( $\eta \rightarrow \infty$  perfect competition)
  - ▷  $\mu$  is called markdown (similar to markup), indicating the (labor) market power held by the firm (Q: how is  $\eta$  and  $\mu$  correlated?)

# Monopsony and Minimum Wage

(borrowed from Peter Kuhn's lecture note)



(Q: how the  $\eta$  and  $\mu$  change with the minimum wage?)

(Q: what if the  $w_{min}$  is higher than wage at point  $a$ ?)

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# Monopsony and Minimum Wage

- ▷  $w_0 = \mu_0 \times MRPL_0(L_0)$
- ▷  $w_{min}(\uparrow) = \mu_1(\uparrow) \times MRPL_1(L_1)(\downarrow)$
- ▷ Profit:  $\pi = F(L) - wL = F(L) - \mu F'(L)L$
- ▷ Recall that with CD production function we have  $Y = F(L) = F'(L)L + F'(K)K$  and there is no profit  $\pi = 0$ ;
- ▷ With market power, the firm can earn positive profit:  
 $\pi = (1 - \mu)Y$ , which increase when  $\mu$  decreases
- ▷  $\pi_1 = (1 - \mu(\uparrow)) \times Y(\uparrow) < \pi_0$  (by the definition of the profit maximization problem)

# Monopsony vs Oligopsony

- ▷ The literal sole-employer case is rarely realistic (except say company towns)
- ▷ Oligopsony is more often, e.g., considering a Cournot model of employment-setting game with market employment  $\mathbf{L} = \sum_i L_i$ :  
$$\max_{L_i} F_i(L_i) - w(L_i + L_{-i}^*) L_i \Rightarrow w(L_i) = \left[1 + \frac{1}{\eta(\mathbf{L})} \frac{L_i}{\mathbf{L}}\right]^{-1} F'_i(L_i)$$
  - ▷ (Q: when will oligopsony market becomes perfectly competitive market or monopsony?)
- ▷ Under oligopsony, market structure matters for market power and strategic interactions will play important roles
- ▷ Berger et al. (2022) develops a more flexible framework of oligopsony using a CES aggregator of disutility ▶ see appendix
- ▷ The definition of the "oligopsony labor market" is not without disputes; often use [region × industry or occupation]
  - ▷ The implicit idea to separate markets here is to use physical distance and skill-task distance, both of which indicate job moving costs

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## Sources of Monopsony Power

- ▷ Recall  $w_i = \left[1 + \frac{1}{\eta}\right]^{-1} \times MRPL$ , where monopsony is all about  $\eta \neq \infty$  and  $w(L)$  being upward sloping
- ▷ If truly monopsony, one firm faces the market labor supply curve, which can be elastic (Q: why?)
- ▷ But workers can migrate and firms can freely entry and compete
  - ▷ Esp. Bertrand competition on wage can remove any market power
- ▷ Can we have elastic labor supply even when each firm is atomistic?
- ▷ It turns out that we have two natural sources for it:
  - ▷ Search friction (for finding jobs & workers)
  - ▷ Idiosyncratic preference (on non-wage firm characteristics)

## Early recognitions on the general presence of labor market power even in the absence of "concentration"

- ▷ *The supply of labour to an individual firm might be limited ... there might be a certain number of workers in the neighborhood and to attract those from further afield it may be necessary to pay a wage equal to what they can earn near home plus their fares to and fro, or there may be workers attached to the firm by preference or custom and to attract others it may be necessary to pay a higher wage. Or ignorance may prevent workers from moving from one firm to another in response to differences in the wages offered by the different firms. (Robinson [1933] 1969, p. 296)*
- ▷ *The assumption that workers are fully informed and completely responsive to wage differences may be altered in three main ways. It may be assumed that workers are ignorant of the wages paid by other employers, or that they are perfectly informed concerning wages but are deterred from changing jobs by considerations of security, or that they are perfectly informed concerning wages but differ in their evaluation of the non-base-rate components of the wage. (Reynolds 1946, p. 393)*

# Microfoundation 1: Search Friction

- ▷ Workers take time and effort in searching for limited number of jobs, same as firms in searching for workers
- ▷ The matching of workers and firms is thus a process with frictions
- ▷ **Burdett and Mortensen (1998)** shows that in a model where
  - ▷ firms post jobs with wages
  - ▷ homogenous workers randomly receive those job offers
  - ▷ an equilibrium with wage dispersion but same profits for all firms
  - ▷ low wage firms more likely losing workers to high wage firms
- ▷ Labor supply in BM-type model is upward slopping
  - ▷ as it requires a firm posting a higher wage to have more workers attracted and less worker poached, retaining a larger employment
    - ▷ [see a version of the model here](#)
- ▷ Perfect competition in this case is reached when job offers from all firms arrive simultaneously and instantaneously to all workers

## Microfoundation 2: Idiosyncratic Preference

- ▷ Workers often consider more than wages when choosing jobs
- ▷ Firms are workplaces and consist of a large set of (dis)amenities
  - ▷ Location and commute times
  - ▷ Fringe benefits
  - ▷ Job safety or career potential
  - ▷ Relationships with managers and coworkers
  - ▷ ...
- ▷ Individual's valuations on them will vary wildly
- ▷ Firms often cannot directly observe this taste heterogeneity and thus post only one wage per job
- ▷ Firms, however, know that some workers would not leave even with a wage lower than marginal product
- ▷ The amount of workers firms can attract depend on both their wages and (dis)amenities

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# Did California's 2023-2024 Fast Food Minimum Wage Reduce Employment?

California's \$20 fast food minimum wage was enacted in Sep 2023 and went into effect in Apr 2024; [Clemens et al. \(2025\)](#) find that employment in California's fast food sector declined by 2.7 percent relative to employment in the fast food sector elsewhere in the US

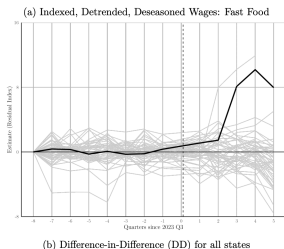


Figure 2: Fast-food employment wages in California versus the Rest of the United States (September 2021–December 2024). This figure shows the (real) average weekly wage index

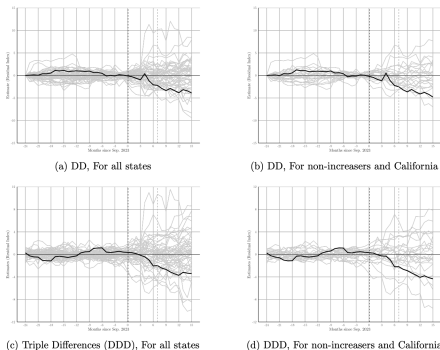


Figure 3: Fast-food employment in California (black line) versus the Rest of the United States (September 2021–December 2024). This figure shows the detrended

# Did California's 2023-2024 Fast Food Minimum Wage Reduce Employment?

Table 1: Indexed Employment Outcomes and Difference-in-Differences Estimates

		(1)	(2)	(3)	(4)	(5)	(6)
<i>Panel A</i>							
State	Industry	Sept. 2021	Sept. 2023	Sept. 2024	Change from 21–23 (annual)	Change from 23–24	Detrended (23–24) – (21–23)
CA	Fast Food (FF)	92.48	100.00	97.36	3.76	-2.64	-6.40
CA	Higher Wage Ind. (HWD)	95.03	100.00	100.58	2.49	0.58	-1.91
Rest of US	Fast Food (FF)	93.41	100.00	100.10	3.30	0.10	-3.20
Rest of US	Higher Wage Ind. (HWD)	93.37	100.00	101.04	3.31	1.04	-2.27
Non-Increasers	Fast Food (FF)	93.18	100.00	100.50	3.41	0.50	-2.91
Non-Increasers	Higher Wage Ind. (HWD)	93.01	100.00	101.16	3.49	1.16	-2.33
<i>Panel B</i>							
Comparison					Pre-Trend DD or DDD	Simple DD or DDD	Detrended DD or DDD
HWD	CA minus Rest of US				-0.82	-0.46	0.36
	CA minus Non-Increasers				-1.00	-0.58	-1.16
FF	CA minus Rest of US				0.46	-2.74***	-3.20**
	CA minus Non-Increasers				0.35	-3.14***	-3.49***
FF and HWD (DDD)	CA minus Rest of US				0.47	-2.28*	-3.57*
	CA minus Non-Increasers				0.35	-2.57**	-3.93*

$p < .1^*$ ;  $p < .05^{**}$ ;  $p < .01^{***}$

*Note:* Using data from the QCEW, this table presents the full set of cell entries that underlie estimates of equations 1 and 2 as presented in section 3. “Change from 21–23 (annual)” =  $(\text{Index}_{2023} - \text{Index}_{2021})/2$ . The “Detrended” column = (col 5) - (col 4), and analogously for the DD and DDD estimates in Panel B. September 2023 is 100 for every industry in every state by the mechanics of the index construction. This table shows the results of the simple difference-in-difference exercises described in Equations 1 and 2. Significance levels are calculated using the placebo method described in Section 3. The sets of placebo treatment states with estimates more negative than the California estimate are shown in Table A1.

# In fact, such evidence has not been rare in the literature (Neumark et al., 2014)

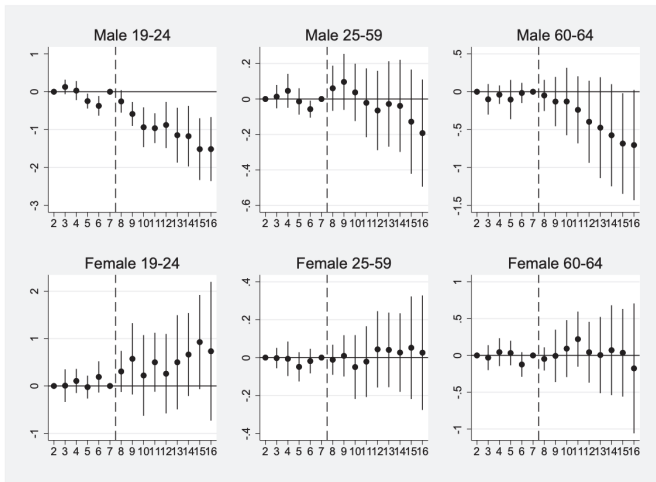
Table 6. The Effects of the Minimum Wage on Restaurant Employment, “Falsification Tests,” County-Level QCEW Data

	(1)	(2)	(3)
<i>Dependent variable: Log (restaurant employment)</i>			
	<i>DLR sample: 1990:Q1-2006:Q2 (DLR Table B1, specification 2)</i>	<i>Sample restricted to 1998:Q3-2006:Q2 (period with no federal MW changes)</i>	<i>Sample restricted to 1998:Q3-2006:Q2, county pairs with minimum wage difference for at least one quarter</i>
<b>Actual MW sample</b>			
Log(MW)	-0.208 (0.150)	-0.247*** (0.042)	-0.260** (0.097)
N	34,514	21,308	5,180
<b>Placebo MW sample</b>			
Log(MW)	-0.123 (0.158)	-0.107 (0.068)	0.005 (0.082)
N	33,726	20,768	4,640
Percentage of county pair- quarter observations with minimum wage difference between counties	4.0	7.0	31.2
Percentage of county pairs with minimum wage differ- ence between counties in sample period	17.8	32.4	100.0
County effects	Yes	Yes	Yes
Period effects	Yes	Yes	Yes

*Notes:* These specifications include controls for population and private-sector employment. Following DLR’s code, the sample is restricted to counties that have an area less than 2,000 square miles, and have data for each quarter in the sample period studied. In column (3), the subset of county pairs in column (2) that had one or more minimum wage differences in the period always had at least two quarters of minimum wage differences. Standard errors are clustered at the state level.

\*Statistically significant at the .10 level; \*\* at the .05 level; \*\*\* at the .01 level.

# And some evidence of negative impact in Japan (Kawaguchi and Mori, 2021)



**Fig. 8.** The gap between the welfare benefit and minimum-wage earnings in 2006 and employment among the less educated ( $Educ \leq 12$ ).

Note: Regression coefficients and 95% confidence intervals of  $\theta_y^E$  of the estimated model:  $Emp_{ijt} = \sum_{y=2002}^{2016} \theta_y^E \ln(WB/MWE)_{j2006} \cdot 1(Year = y) + X_{ijt} \pi^E + \omega_j^E + \psi_1^E + \lambda_j^E \cdot Year + e_{ijt}^E$ , where  $(WB/MWE)_{j2006}$  is the ratio of the welfare benefit and minimum-wage earnings in prefecture  $j$  in 2006. The model is estimated with the microdata of individuals from the Labor Force Survey. The vector  $X_{ijt}$  includes dummy variables for each age, the fraction of each demographic group (men 19–24, 25–59, 60–64 and women 19–24, 25–59, and 60–64) within the population, and the unemployment rate of college graduates of 25–59 years old. When the welfare benefit amount exceeds the minimum-wage earnings,  $(WB/MWE)_{j2006}$  is defined to be 1. The restrictions  $\theta_{2002}^E = \theta_{2007}^E = 0$  are imposed to identify the prefecture-specific linear time trends  $\lambda_j^E$ . The 95% confidence intervals are calculated based on the standard errors robust against clustering within prefectures, denoted by  $j$ .

# Meanwhile there are also more highly cited evidence towards a null employment effect (Cengiz et al., 2019)

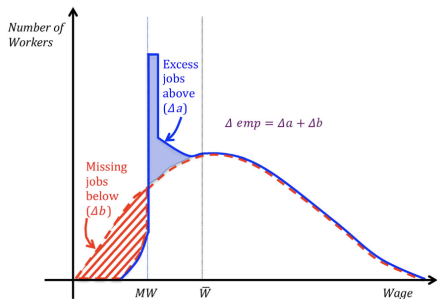


FIGURE I

The Impact of Minimum Wages on the Frequency Distribution of Wages

The figure shows the effect of the minimum wage on the frequency distribution of hourly wages. The red dashed line (color version available online) shows the wage distribution before the introduction of the minimum wage, and the blue solid line shows the distribution afterwards. Because compliance is less than perfect, some workers are paid below the minimum wage, and the post-treatment distribution starts below the minimum wage. For other workers, the introduction of the minimum wage produces “missing jobs” ( $\Delta b$ ), as shown by the striped red shaded area (under the red dashed line) between the origin and  $MW$ . These missing jobs may either reflect workers getting a raise, or their jobs being destroyed. The former group creates the “excess jobs above” ( $\Delta a$ ), as shown by the solid blue shaded area (under the blue solid line) between  $MW$  and  $\bar{W}$ , the upper limit for any effect of the minimum wage on the earnings distribution. The overall change in employment due to the minimum wage ( $\Delta e$ ) is the sum of the two areas ( $\Delta a + \Delta b$ ).

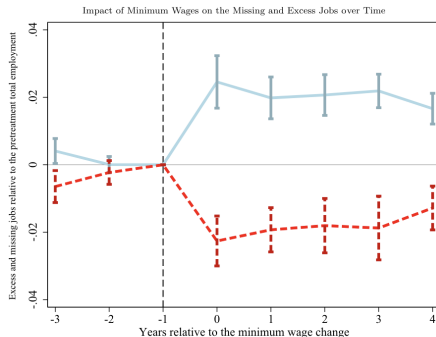


FIGURE III

Impact of Minimum Wages on the Missing and Excess Jobs over Time

The figure shows the main results from our event study analysis (see [equation \(1\)](#)) exploiting 138 state-level minimum wage changes between 1979 and 2016. The figure shows the effect of a minimum wage increase on the missing jobs below the new minimum wage (red dashed line; color version available online) and on the excess jobs at or slightly above it (blue solid line) over time. The red dashed line shows the evolution of the number of jobs (relative to the total employment one year before the treatment) between \$4 below the new minimum wage and the new minimum wage ( $\Delta b$ ); the blue solid line shows the number of jobs between the new minimum wage and \$5 above it ( $\Delta a$ ). We also show the 95% confidence interval based on standard errors that are clustered at the state level.

# The Debate Is Still Largely Not Settled

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## ORIGINAL ARTICLE

### Myth or measurement: What does the new minimum wage research say about minimum wages and job loss in the United States?

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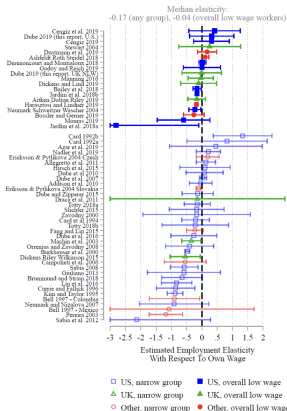
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#### Abstract

The disagreement among studies on the employment effects of minimum wages in the United States is well known. Less well known, and more puzzling, is the absence of agreement on what the research literature says—that is, how economists summarize the body of evidence on the employment effects of minimum wages. Summaries range from “it is now well established that higher minimum wages do not reduce employment,” to “the evidence is very mixed with effects centered on zero so there is no basis for a strong conclusion one way or the other,” to “most evidence points to adverse employment effects.” We explore the question of what conclusions can be drawn from the literature, focusing on the evidence using substitutional minimum wage variation within the United States that has dominated the research landscape since the early 1990s. To accomplish this, we assembled the entire set of published studies in this literature and identified the core estimates that support the conclusions from each study, in most cases relying on responses from the researchers who wrote these papers. Our key conclusions are as follows: (i) there is a clear preponderance of negative estimates in the literature; (ii) this evidence is stronger for teens and young adults and the less educated; (iii) the evidence from studies of directly affected workers points even more strongly

Chart 4.B: Own-wage employment elasticities from the minimum wage literature



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## The Elusive Employment Effect of the Minimum Wage

Alan Manning

Thirty years ago, Charles Brown (1988) invited readers of the *Journal of Economic Perspectives* to consider the question “Minimum Wage Laws: Are They Overrated?” and concluded that “the minimum wage is overrated by its critics as well as its supporters” (p. 144). At that time, there was a strong academic consensus that the minimum wage caused job losses and was not well-targeted on those it set out to help, and that as a result, it was dominated by other policies to help the working poor like the Earned Income Tax Credit. Although the minimum wage still commanded wide support among the general population, policymakers seemed to be paying attention to the economic consensus of the time: for example, in 1988 the US federal minimum wage had not been raised for almost a decade and only 10 states had higher minima. Minimum wages seemed to be withering away in other countries too. In 1993, the United Kingdom abolished the Wages Councils that had set minimum wages in some low-paying industries since they were established by Winston Churchill in 1959, leaving only a minimum wage in agriculture. In 1994, the OECD published its view on desirable labor market policies in a prominent *Jobs Study* report, recommending that countries “reassess the role of statutory minimum wages as an instrument to achieve redistributive goals and switch to more direct instruments” (OECD 1994).

The landscape looks very different today. There is pressure to make more use of minimum wages almost everywhere. In the United States, the current logjam in Congress means no change in the federal minimum wage is immediately likely.

## The Whole Literature is Rather A Rabbit Role!

A fair summary: now economists are ok to see both types of evidence, which perhaps depends on the very details of the methods used and the contexts studied

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