

# David Card

Nobel Lecture

January, 10, 2022

CREST

# D. Card: The Quintessential Labor Economist

- Focus on *a)* quasi-experiments captured by shocks on **labor demand** in this part of the presentation;
- The minimum wage quasi-experiment.
- Focus on *b)* the statistical structure of the equilibrium price supposedly equating demand and supply: **wages**
- and their loci of formation: the market, the firm, the workers, and (sometimes) the workers' unions

# The Minimum Wage in the US

- One of the two most famous and talked about quasi (natural) - experiments in labor
- The Nobel prize presentation of Card's contributions starts with it  
*Card and Krueger (1994), AER*
- It had and still has an enormous influence on policy, other scholars in the field and well beyond the field; both in the US and in the rest of the world

**Card, D. and A.B. Krueger (1994).** “Minimum wages and employment: A case study of the fast-food industry in New Jersey and Pennsylvania.” *American Economic Review*, 84: 772-784.

**Abstract:** On April 1, 1992, New Jersey's minimum wage rose from \$4.25 to \$5.05 per hour. To evaluate the impact of the law we surveyed 410 fast-food restaurants in New Jersey and eastern Pennsylvania before and after the rise. Comparisons of employment growth at stores in New Jersey and Pennsylvania (where the minimum wage was constant) provide simple estimates of the effect of the higher minimum wage. We also compare employment changes at stores in New Jersey that were initially paying high wages (above \$5) to the changes at lower-wage stores. We find no indication that the rise in the minimum wage reduced employment.

# Data sources:

- Uses the hike in the minimum wage, from 4.25\$/h à 5.05\$/h, that took place, April 1st 1992, in the state of New Jersey.
- This hike was decided at the beginning of year 1990 by the state assembly.
- The hike was criticized by the local MEDEF
- The hike was decided before the 1992 recession in the state
- The neighboring state, Pennsylvania, left its own minimum unchanged at 4.25\$/h
- Starting 1992, Card and Krueger decided to study this industry (25% of the restaurants industry), in particular because they tend to apply legislation; and because they usually respond to telephone surveys (except McDonald's, who was excluded from the survey)
- The survey comprises 410 fast-food restaurants in NJ and eastern Pennsylvania (close to NJ). Burger King, KFC, Wendy's, Roy Rogers
- Two waves: 1) before the hike, from mid-february to beginning march 1992; 2) after the hike, november-december 1992

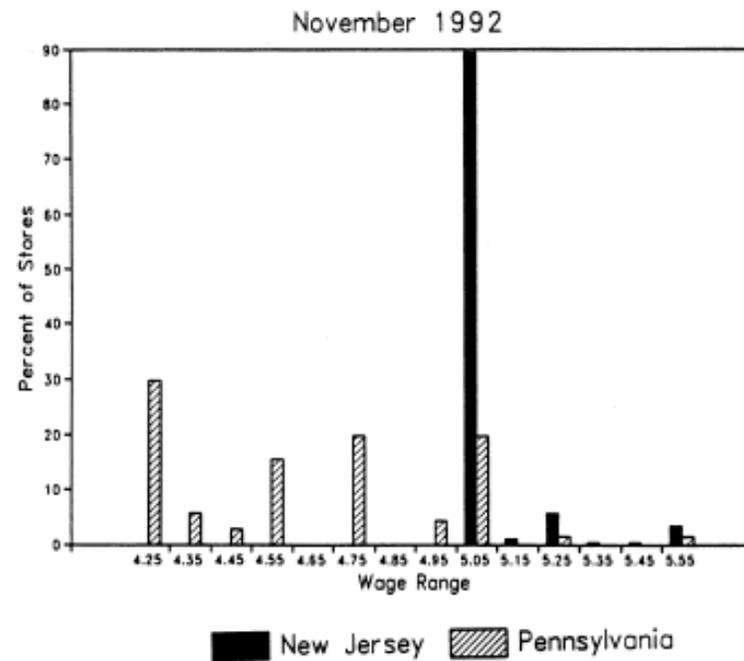
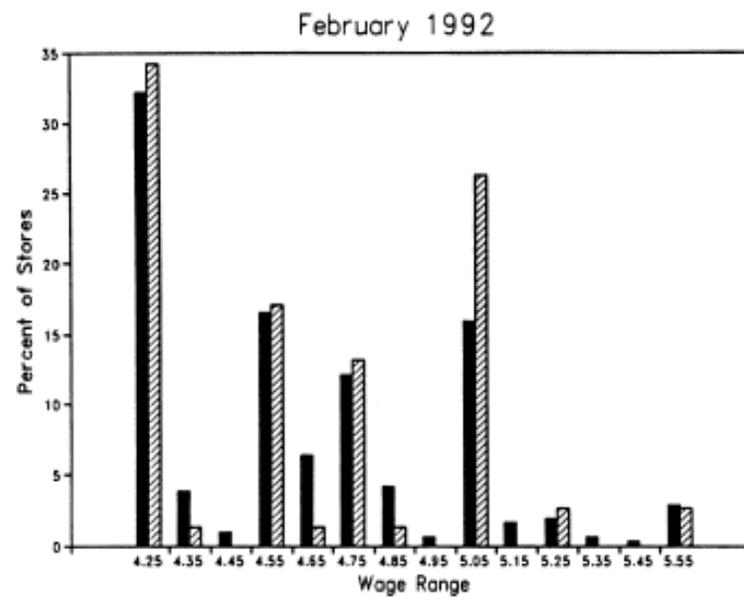


FIGURE 1. DISTRIBUTION OF STARTING WAGE RATES

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.

# Neumark and Wascher' Re-examination of CK

- Based on administrative payroll data
- From Burger King, KFC franchises
- From Wendy's, Roy Rogers franchises and company-owned restaurants
- In 80% of the zip codes from CK
- Partly collected by NW, partly collected by EPI (employment policies institute)
- Employment measures based on total numbers of hours worked, converted into FTE
- ***Negative employment effect***

# Re-examination of the Re-examination (CK strike again)

- Use the Bureau of Labor Statistics (BLS) ES-202 data (Krueger used his position as chief economist of the BLS)
- Records to their state employment security agency, every quarter, for unemployment insurance tax purposes
- Number of covered workers
- Selected among eating and drinking industry with the right names (chains)
- Added 7 more counties (from the 7 original ones in Pennsylvania)
- Longitudinal
- Potential problem with multi-units: solved by « hand »
- ***Zero employment effect of the MW hike***

*The No-effect result became the consensus in the US*

# More Generally

- In the United-States, results seen as evidence of monopsony power (employers): hence, MW may be good for employment
- A line of research on monopsony has been flourishing
- The Nobel committee has adopted this view, forgetting clearcut evidence for France (where MW was well below M<sub>cost</sub>, the two converging)
- MW appears to be good on inequality (true in most countries)
- These questions are very political (debate in the US, MW implementation in the UK, MW for the young in France ?).

***This is ok***

# The (Statistical) Structure of Wages

(and the associated economic interpretations)

- **Abowd, J.M., and D. Card** (1989), “On the Covariance Structure of Earnings and Hours Changes,” *Econometrica*, 57, 2, 411-445
- **D. Card** (1994), “The Effects of Unions on the Structure of Wages: a Longitudinal Analysis,” *Econometrica*, 64, 4, 957-979
- **Card, D., J. Heining, and P. Kline** (2013), “Workplace heterogeneity and the rise of West German wage inequality.” *Quarterly Journal of Economics*, 128, 3, 967-1015
- **Card, D., A. Cardoso, and P. Kline** (2016). “Bargaining, sorting, and the gender wage gap: Quantifying the impact of firms on the relative pay of women.” *Quarterly Journal of Economics*, 131, 2, 633–686

# **Abowd, J.M., and D. Card (1989), "On the Covariance Structure of Earnings and Hours Changes," *Econometrica*, 57, 2, 411-445**

**Abstract:** This paper presents an empirical analysis of individual earnings and hours data from three different longitudinal surveys. In the first part of the paper we catalog the main features of the covariance structure of earnings and hours changes. We find that this structure is very similar across data sets, and may be adequately summarized by a simple components-of-variance model, consisting of (i) serially uncorrelated measurement error, (ii) a shared component of earnings and hours with a second-order moving average covariance structure, and (iii) a non-stationary component that affects only the variances and contemporaneous covariances of earnings and hours. In the second part of the paper we offer an interpretation of this model in terms of a simple life-cycle labor supply model. On the assumption that we can identify individual productivity growth with the shared component of earnings and hours variation, we obtain estimates of the intertemporal substitution elasticity. The results are not favorable to the life-cycle model: most of the covariation of earnings and hours occurs at fixed hourly wage rates.

**D. Card (1994)**, “The Effects of Unions on the Structure of Wages: a Longitudinal Analysis,” *Econometrica*, 64, 4, 957-979

**Abstract:** This paper studies the effects of unions on the structure of wages, using an estimation technique that explicitly accounts for misclassification errors in reported union status, and potential correlations between union status and unobserved productivity. The econometric model is estimated separately for five skill groups using a large panel data set formed from the U.S. Current Population Survey. The results suggest that unions raise wages more for workers with lower levels of observed skills. In addition, the patterns of selection bias differ by skill group. Among workers with lower levels of observed skill, unionized workers are positively selected, whereas union workers are negatively selected from among those with higher levels of observed skill.

# Card, D., J. Heining, and P. Kline (2013), “Workplace heterogeneity and the rise of West German wage inequality.” *Quarterly Journal of Economics*, 128, 3, 967-1015

- **Abstract:** We study the role of establishment-specific wage premiums in generating recent increases in West German wage inequality. Models with additive fixed effects for workers and establishments (AKM) are fit into four subintervals spanning the period from 1985 to 2009. We show that these models provide a good approximation to the wage structure and can explain nearly all of the dramatic rise in West German wage inequality. Our estimates suggest that the increasing dispersion of West German wages has arisen from a combination of rising heterogeneity between workers, rising dispersion in the wage premiums at different establishments, and increasing assortativeness in the assignment of workers to plants. In contrast, the idiosyncratic job-match component of wage variation is small and stable over time. Decomposing changes in mean wages between different education groups, occupations, and industries, we find that increasing plant-level heterogeneity and rising assortativeness in the assignment of workers to establishments explain a large share of the rise in inequality along all three dimensions.

**Card, D., A. Cardoso, and P. Kline (2013),** “Bargaining, sorting, and the gender wage gap: Quantifying the impact of firms on the relative pay of women.” *Quarterly Journal of Economics*, 131, 2, 633–686

**Abstract:** There is growing evidence that firm-specific pay premiums (AKM) are an important source of wage inequality. These premiums will contribute to the gender wage gap if women are less likely to work at high-paying firms or if women negotiate (or are offered) worse wage bargains with their employers than men. Using longitudinal data on the hourly wages of Portuguese workers matched with income statement information for firms, we show that the wages of both men and women contain firm-specific premiums that are strongly correlated with simple measures of the potential bargaining surplus at each firm. We then show how the impact of these firm-specific pay differentials on the gender wage gap can be decomposed into a combination of sorting and bargaining effects. We find that women are less likely to work at firms that pay higher premiums to either gender, with sorting effects being most important for low and middle-skilled workers. We also find that women receive only 90% of the firm-specific pay premiums earned by men. Importantly, we find the same gender gap in the responses of wages to changes in potential surplus over time. Taken together, the combination of sorting and bargaining effects explain about one-fifth of the cross-sectional gender wage gap in Portugal.