

Minimum Wages in the U.S.

Economics of Social Policy
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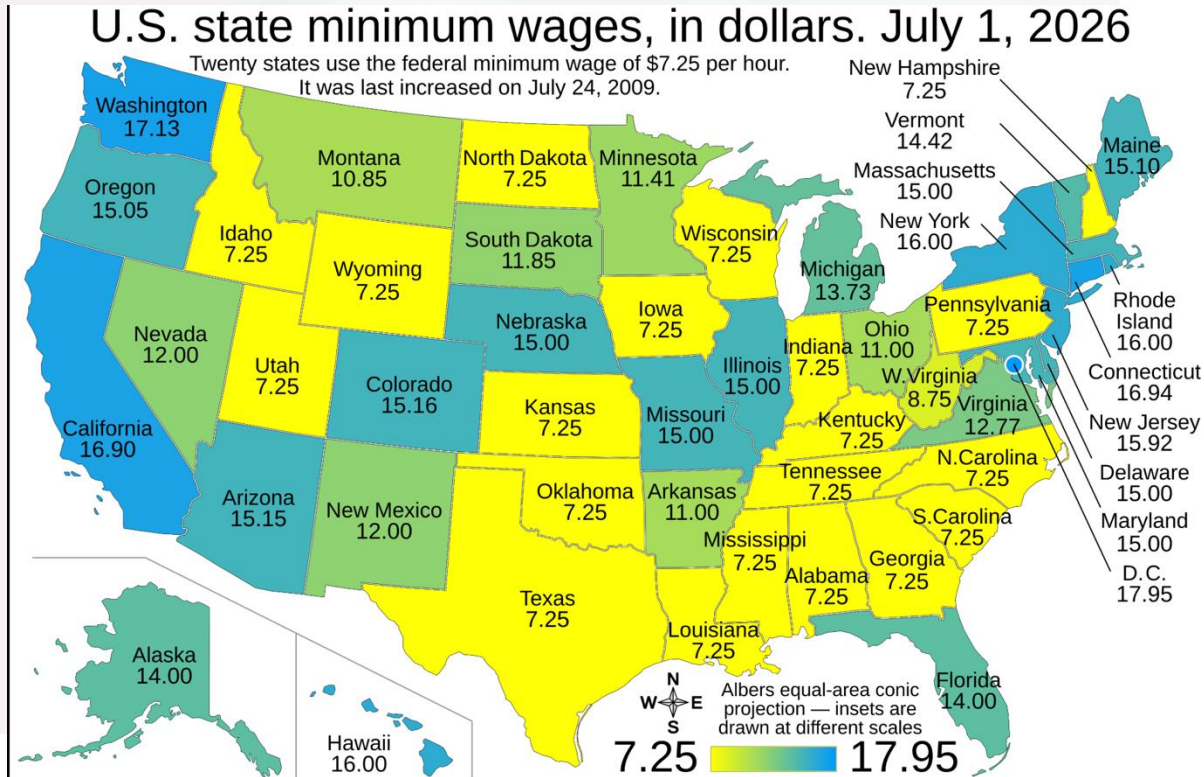
Anyone who thinks there's a consensus in economics on the effects of changing the minimum wage should talk to someone who's recently tried to publish a paper on the topic. I study lots of controversial topics but would never go near that one, thanks. So political. A nightmare.

8:37 PM · Jan 15, 2021 · Twitter for iPhone

“ *How much is the federal minimum wage?*

How much is the minimum wage in PA?

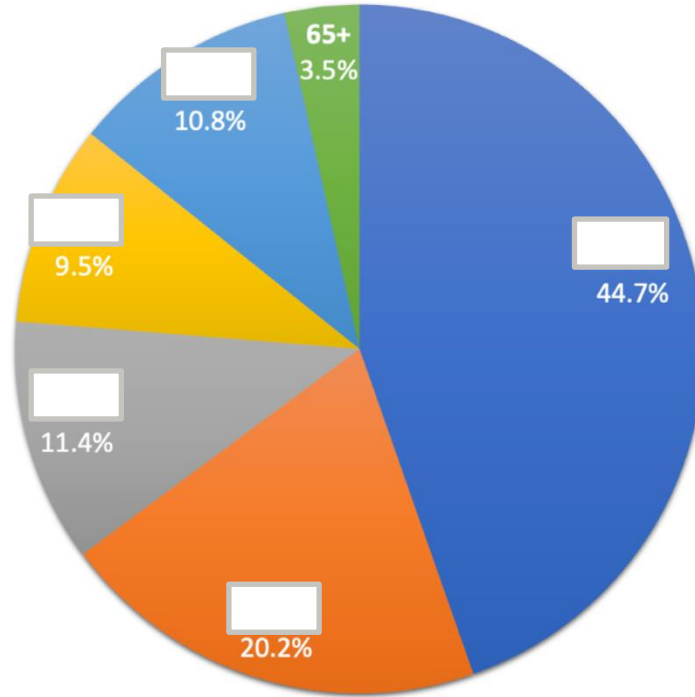
- Federal rate of \$7.25 has not changed for more than a decade (last change in 2009).
- <https://minimumwage.com/>



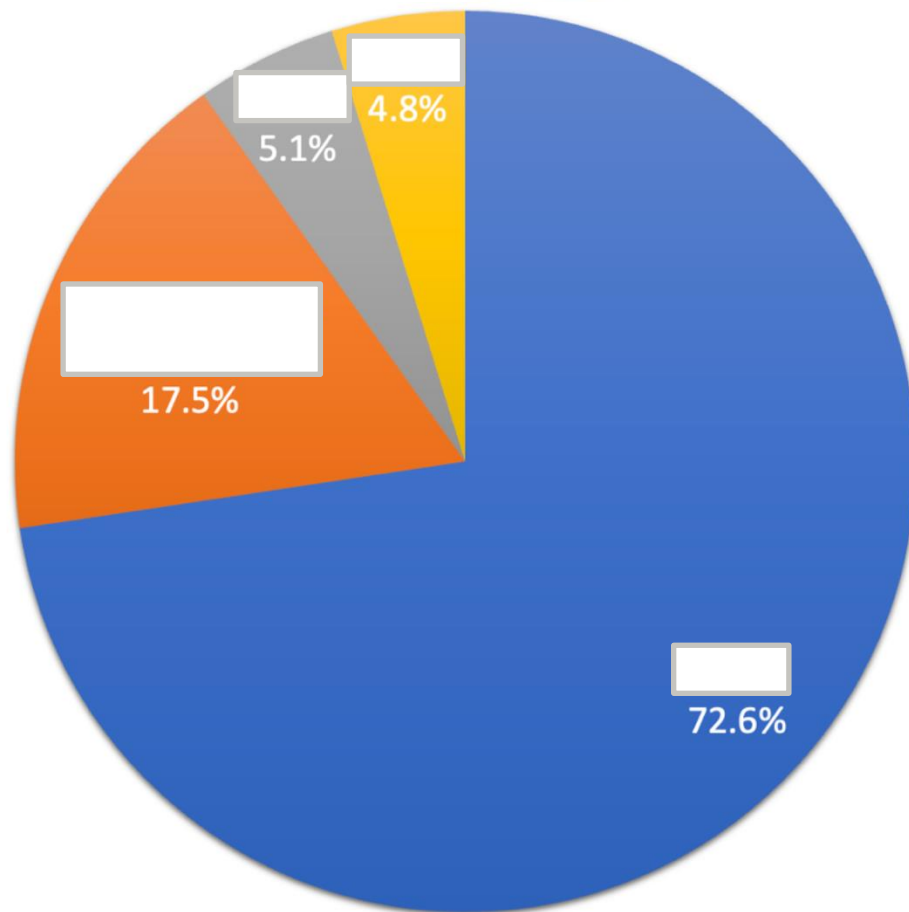
Source: Department of Labor: <https://www.dol.gov/agencies/whd/minimum-wage/state>

Who earns the minimum wage?

The latest report from the Bureau of Labor Statistics (BLS) finds that 44.7% of all employees earning the federal minimum wage are between the ages of



Percent of Minimum Wage Workers by Race



Industry	Percent
Leisure and recreation	62.5%
Food and beverage services	9.0%
Voluntary action	7.7%
Retail trade	6.9%
Professional and business services	4.0%
Other services	3.8%
Manufacturing	3.4%
Nondurable goods	2.5%
Transportation and utilities	1.4%
Information	1.0%
Construction	0.9%
Durable goods	0.9%
Agriculture and related industries	0.8%
Financial activities	0.8%
Wholesale trade	0.7%
Mining, quarrying, and oil and gas extraction	0.0%

COVID-19 and Minimum wages

- The pandemic hurt low-wage workers the most
- COVID-19 relief bill included \$15 MW hike by 2025
- However, small business owners see the wage increases as yet another challenge during a pandemic
- Business struggle to pay their workers, and those workers who end up losing their jobs will be the workers who need their jobs the most
- Will MW raise *reduce* or *widen* social/racial inequity?

Group Activity:

Minimum wage Raise

□ PROS

□ CONS



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Many talk about higher minimum wages as if they're a magical free lunch. We wish everyone made more money so let's just tell employers they have to pay more and poof problem solved without any sacrifices from anyone! That sort of thinking drives me crazy. There are always costs.

Support for a \$15 Wage Declines When Americans Are Aware of The Negative Effects

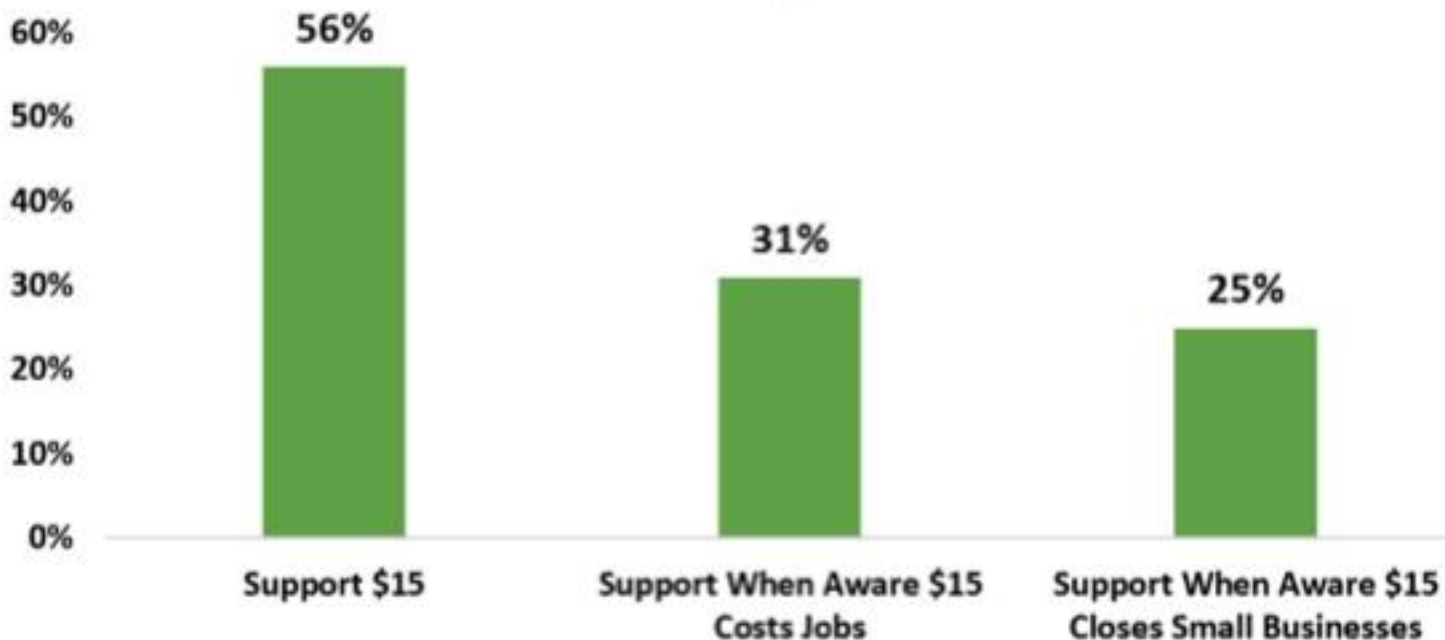


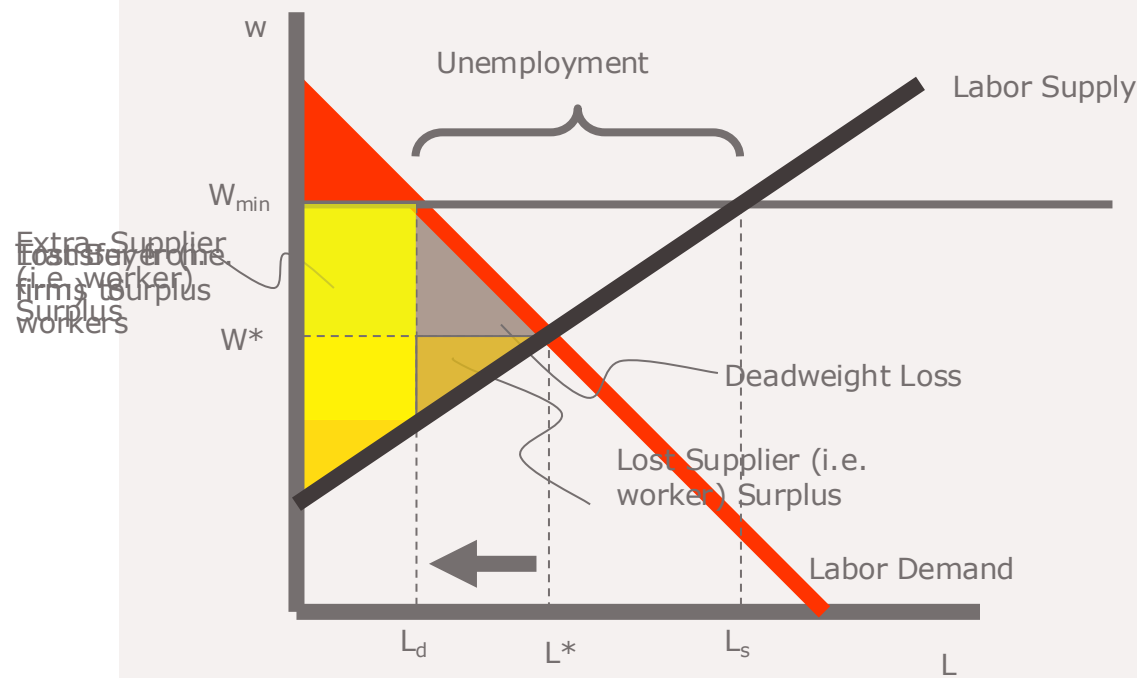
Figure 5. Survey Results for Support of \$15 Minimum Wage

What the Economic theory says

Let's start with what we learned from Intro to Econ class

A large white number 1 is centered over a rectangular image. The image shows several stalks of dried, golden-brown grasses or reeds against a soft, out-of-focus background. The overall aesthetic is minimalist and natural.

Theoretical Model



“



Imagine that you run a local burger shop with two minimum-wage workers. Now, the minimum wage has gone up from \$7.25 to \$12. What would be your responses?

To keep your business running



Fire workers?

Since the wage that you have to pay almost doubled, would you rather fire worker(s) and do all the work by yourself?

Increase the price?

To recoup the same profit, it seems inevitable to increase the price of burgers, or even cut the production costs by using cheaper ingredients.

Anything else?

What else would you do?

The effects of minimum wages on

- Overall employment level in the economy
- Overall prices of goods and services
- ***Real*** wages of employees
- Business survival



Minimum wages



Benefits

Higher MW for affected workers, some of whom are in poor or low-income families

Downsides

Higher MW may discourage firms from employing the low-wage workers that MW are intended to help

Price pass-through

Card and Krueger, AER 1994

David Card, Economist who won a Nobel Prize in 2021



Krueger (left) and Card with the IZA Prize Medals

2

Follow the Flow



Research Q

What is the effect of increasing MW on employment?

Method

- On April 1, 1992, NJ's MW rose from 4.25 to 5.05
- MW in PA stayed constant
- Natural experiment using this policy change
- **Difference-in-differences!!**

Data

Collected data on employment, wage, prices at 410 fast-food restaurants before and after the MW increase in NJ

The Idea



Why PA a control state?

- NJ is a small state, closely linked to nearby states and likely affected by common unobservable shocks
- PA presumably affected by the same unobservable shocks, but did not increase MW

Why Fast-food restaurants?

- Major employers of MW workers
- All very careful to strictly comply with legislation
- Homogeneous industry across states in terms of job requirements and product characteristics
- Absence of tips

Main Results

Average employment in fast food restaurants before and after the New Jersey minimum wage increase

Variable	PA (i)	NJ (ii)	Difference, NJ – PA (iii)
1. FTE employment before, all available observations	23.33 (1.35)	20.44 (.51)	–2.89 (1.44)
2. FTE employment after, all available observations	21.17 (.94)	21.03 (.52)	–.14 (1.07)
3. Change in mean FTE employment	–2.16 (1.25)	.59 (.54)	2.76 (1.36)

Notes: Adapted from Card and Krueger (1994), table 3.

- Full time employment actually decreased slightly in PA (by 2.16) while it remained quite stable in NJ (0.59 increase)

Two potential measures

1) Employment difference between NJ and PA after the policy change

$$FTE = \delta_0 + \delta_1 NJ + \epsilon, \text{ only for after}=1$$
$$\widehat{FTE} = 21.17 - 0.14NJ$$

2) Employment change in NJ before and after the policy change

$$FTE = \gamma_0 + \gamma_1 After + \epsilon, \text{ only for NJ}=1$$
$$\widehat{FTE} = 20.44 + 0.59After$$

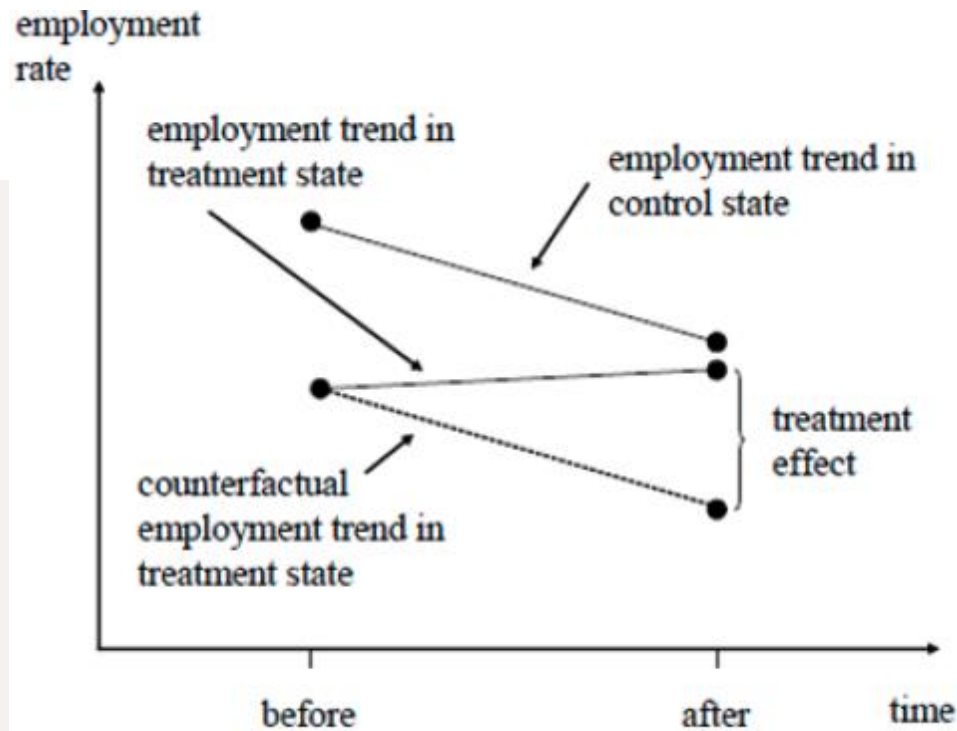
Difference— in- differences estimator

- Average change in NJ employment relative to average change in PA employment:
- $DD = [(Y|NJ, \text{Nov } 1992) - (Y|NJ, \text{Mar } 1992)] - [(Y|PA, \text{Nov } 1992) - (Y|PA, \text{Mar } 1992)]$

$$FTE = \beta_0 + \beta_1 NJ + \beta_2 After + \beta_3 NJ * After + \varepsilon,$$

- β_3 measures the difference between the average employment change in NJ and that in PA

Key Assumption: Parallel Trends



- The trend in employment rate in the two states would have been the same in the absence of the policy change

A bunch of robustness tests

- Table 5
 - Row 2: when they set wave-2 employment at the temporarily closed stores to 0 (instead of missing): small attenuating effects on the coefficient on NJ dummy
 - Row 3-5: alternative measures of FTE
 - Row 6: exclusion of stores along the NJ shore
 - Row 7: controlling for the week of wave-2 interview
 - Row 8: excludes any stores that were called back more than twice

Further evidence

- No significant change in # FTE and #PTE (i.e. substitution). (Table 6 panel 1)
- No evidence that the rise in MW is associated with a change in # operating hours, # of cash registers, etc. (Table 6 panel 2-4)
- No evidence that employers offset the minimum-wage increase by reducing free or reduced-price meals (fringe benefits to employees) (Table 6 panel 5-7)
- No evidence of flattening the tenure-wage profile (by increasing the time to first raise) (Table 6 panel 8-10)
- Mixed evidence that higher MW results in higher fast-food prices (Table 7)
- The effects of MW on fast-food store opening rates are positive and insignificant (Table 8)

Questions

- Isn't the DD estimate driven by the reduction in employment in PA fast food restaurants, rather than the increase in employment in NJ fast food restaurants?
 - If we look at NJ stores by its initial wage level before the MW raise, the increase in employment is solely driven by stores that raised MW from \$4.25 to \$5.05
 - The change in employment in NJ stores with initial wage of $\geq \$5$ and the change in employment in PA stores are identical, -2.28 vs -2.16 (both are not affected by the MW)
- Is there any evidence that workers have moved from PA to NJ fast food restaurants, seeing a rise in minimum wage?

Questions (continued)

- They only look at stores already in place in first stage (no entry effects)
- Legislation may have been endogenous
- Employment may have been measured with error as data was obtained from telephone surveys
- Differences in response rates may be a small source of bias in the comparison because of unobservable heterogeneity

Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania: Reply

By DAVID CARD AND ALAN B. KRUEGER*

Replication and reanalysis are important endeavors in economics, especially when new findings run counter to conventional wisdom. In their Comment on our 1994 *American Economic Review* article, David Neumark and William Wascher (2000) challenge our conclusion that the April 1992 increase in the New Jersey minimum wage led to no loss of employment in the fast-food industry. Using data drawn from payroll records for a set of restaurants initially assembled by Richard Berman of the Employment Policies Institute (EPI) and later supplemented by their own data-collection efforts, Neumark and Wascher (hereafter, NW) conclude that "...the New Jersey minimum-wage increase led to a relative decline in fast-food employment in New Jersey" compared to Pennsylvania.¹ They attribute the discrepancies between their findings and ours to problems in our fast-food restaurant data set. Specifically, they argue that our use of employment data derived from telephone surveys, rather than from

payroll records, led us to draw faulty inferences about the effect of the New Jersey minimum wage.

In this paper we attempt to reconcile the contrasting findings by analyzing administrative employment data from a new representative sample of fast-food employers in New Jersey and Pennsylvania, and by reanalyzing NW's data. Most importantly, we use the Bureau of Labor Statistics's (BLS's) employer-reported ES-202 data file to examine employment growth of fast-food restaurants in a set of major chains in New Jersey and nearby counties of Pennsylvania.² We draw two samples from the ES-202 files: a longitudinal file that tracks a fixed sample of establishments between 1992 and 1993, and a series of repeated cross sections from the end of 1991 through 1997. Because the BLS data are derived from unemployment-insurance (UI) payroll-tax records, the employment measures are free of the kinds of survey errors that NW allege affected our earlier results. In addition, because the ES-202 data include information for all covered employers in a fixed group of restaurant chains, there is no reason to doubt the representativeness of the BLS sample.

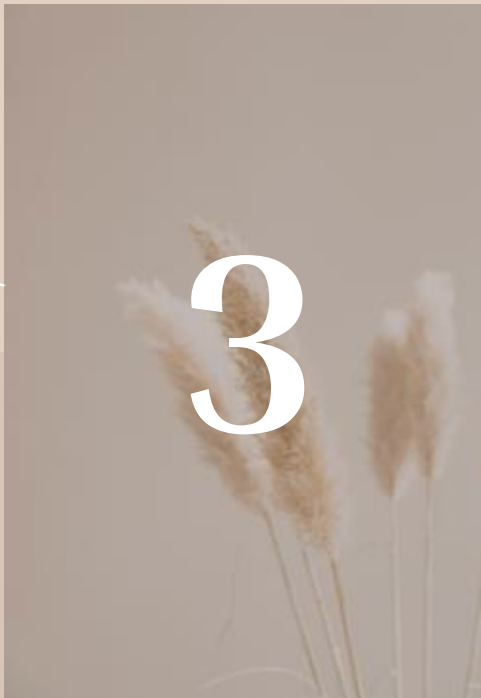
A comparison of fast-food employment growth in New Jersey and Pennsylvania over the period of our original study confirms the key findings in our 1994 paper, and calls into question the representativeness of the sample assembled by Berman, Neumark, and Wascher. Consistent with our original sample, the BLS fast-food data set indicates slightly faster employment growth in New Jersey than in the Pennsylvania border counties over the time period that we initially examined, although in most specifications the differential is small and statistically insignificant. We also use the BLS

* Card: Department of Economics, Evans Hall, University of California, Berkeley, CA 94720, and National Bureau of Economic Research; Krueger: Department of Economics, Princeton University, Princeton, NJ 08544, and National Bureau of Economic Research. The analysis in Sections I, II, and III, subsection E, of this paper is based on confidential Bureau of Labor Statistics (BLS) ES-202 data. The authors thank the BLS staff for assistance with these data. Although the BLS data are confidential, persons employed by an eligible organization may apply to BLS for restricted access to ES-202 data for statistical research purposes. Data from our 1994 paper are available via anonymous FTP from the minimum directory of irs.princeton.edu. All opinions and analysis in this paper reflect the views of the authors and not the U.S. government. We thank seminar participants at Princeton University, the National Bureau of Economic Research, the University of Pennsylvania, the University of California-Berkeley, the Kennedy School (Harvard University), and Larry Katz and John Kennan for helpful comments, and the Princeton University Industrial Relations Section for research support.

¹ In the March 1995 version of their paper, NW relied exclusively on 71 observations collected by EPI. Subsequent versions have also included information from their supplemental data collection.

² The ES-202 data are also known as the Business Establishment List.

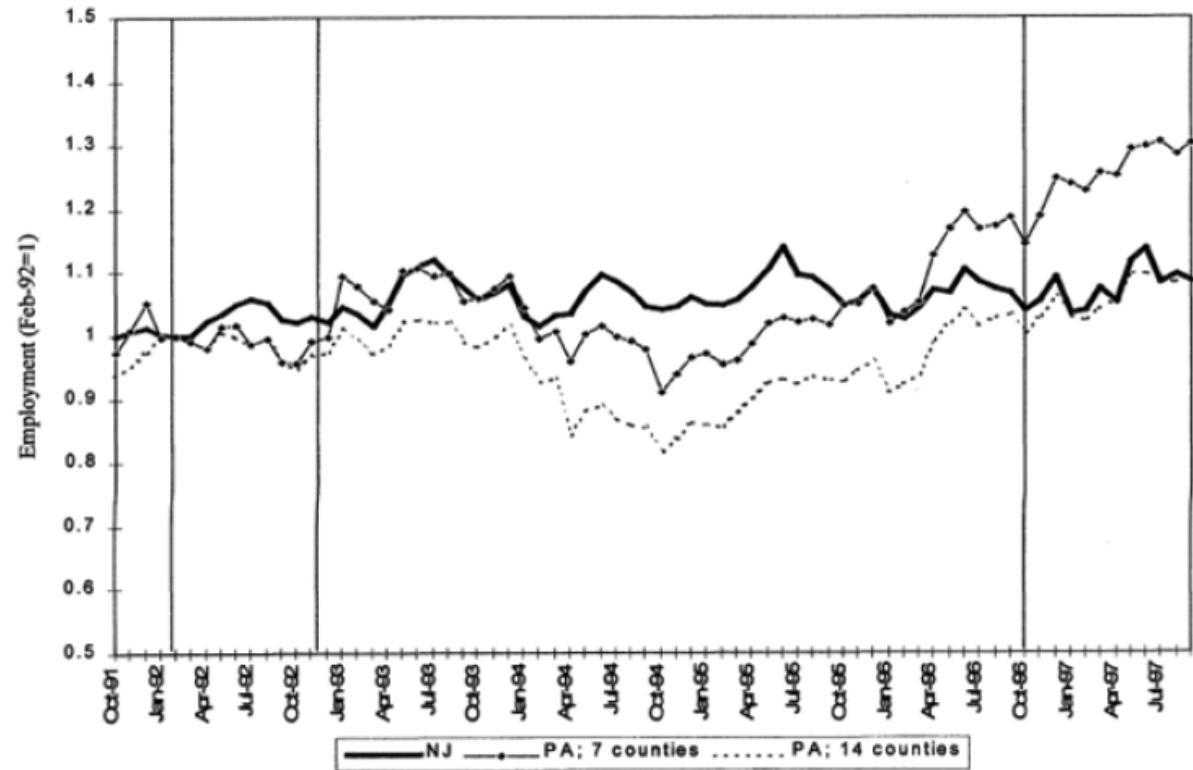
Card and Krueger, Update 2000



Update

- Neumark and Wascher (AER 2000) argue that using different data the MW can be shown to **reduce** employment
- In response to this criticism, Card and Krueger published a reply in AER in 2000
- They update their analysis using payroll tax records for fast-food restaurants in NJ and 2 selections of PA counties for a number of years

Update



- The first two vertical lines indicate the dates when their original surveys were conducted, and the third vertical line denotes the increase in the federal MW to \$4.75 in Oct 1996, which took place in PA only.

Other evidences on Minimum wage

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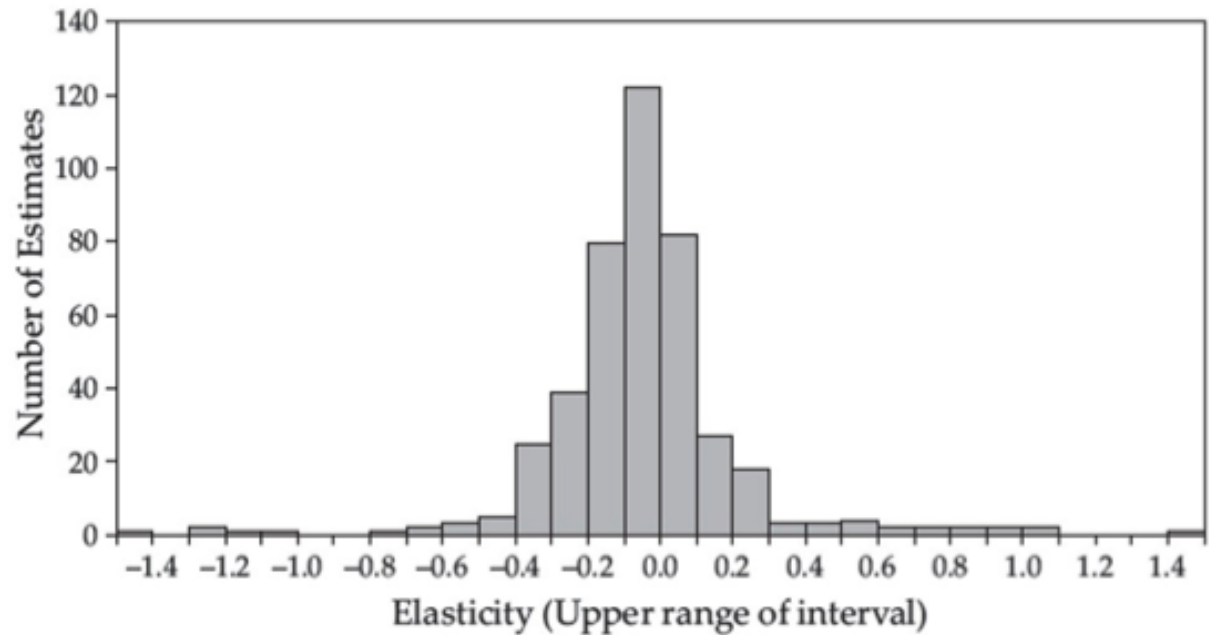
Amazon Effects???

When Amazon Raises Its Minimum Wage, Local Companies Follow Suit

New research suggests that when big companies increase wages, they drive up pay in the places where they operate — without a notable loss in jobs.

- Wage increases by the large corporate employers (Amazon, Walmart, Target, Costco) appear to drive up wages
 - A 10% increase in Amazon's advertised hourly wage led to an average increase of 2.6% among other employers in the same commuting zone
- Many businesses will grant the pay increase, but at the cost of giving workers fewer hours or hiring fewer employees
 - Small but precisely estimated declines in employment
 - A 10% increase in Amazon's base wage led to a 0.4% loss in jobs for low-wage workers (=“Minimum Wage Employment Elasticity” of -0.04)

Minimum Wage Employment Elasticities



- From 439 estimated MWE, derived from 23 studies, some are negative while others are positive, but they are centered around zero.
- The median MWE is around -0.05.

Impact of Minimum wage on workers

On racial inequality, consumption response, etc.



5

“*Suppose you are earning minimum wage now. It has gone up from \$7.25 to \$12. How are your income, spending, and debt going to change?*

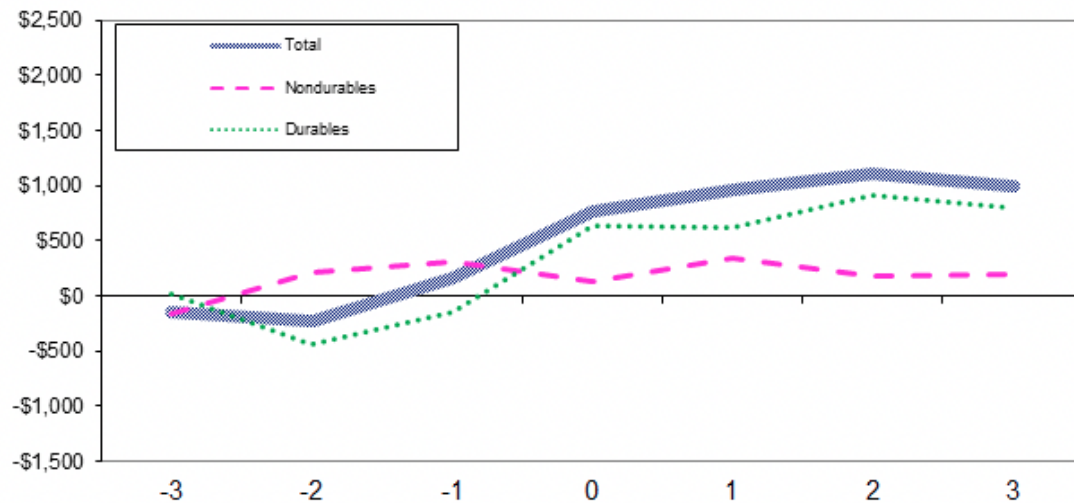
Spending, Income, and Debt responses to MW hikes (Aaronson et al. 2012, AER)

- Outcome (Y): Household income, spending, and debt
- X: household's applicable MW rate
- Controlling for a full set of time and HH fixed effects
- Data: CPS, CEX, SIPP 1980-2008
- Results
 - **Income:** A \$1 MW hike leads to roughly \$250 per quarter increase in income: only significant for households with adult workers earning 60% to 120% of MW (no effects for workers earning above MW, 120-300%)

Spending,
Income,
and Debt
responses
to MW hikes
(Aaronson
et al. 2012,
AER)

- **Consumption:** A \$1 MW hike leads to approximately \$700 per quarter increase in spending. Virtually all spending is on durable goods (e.g. new cars & trucks)

Figure 1. Decomposition of CEX spending response to a change in the minimum wage

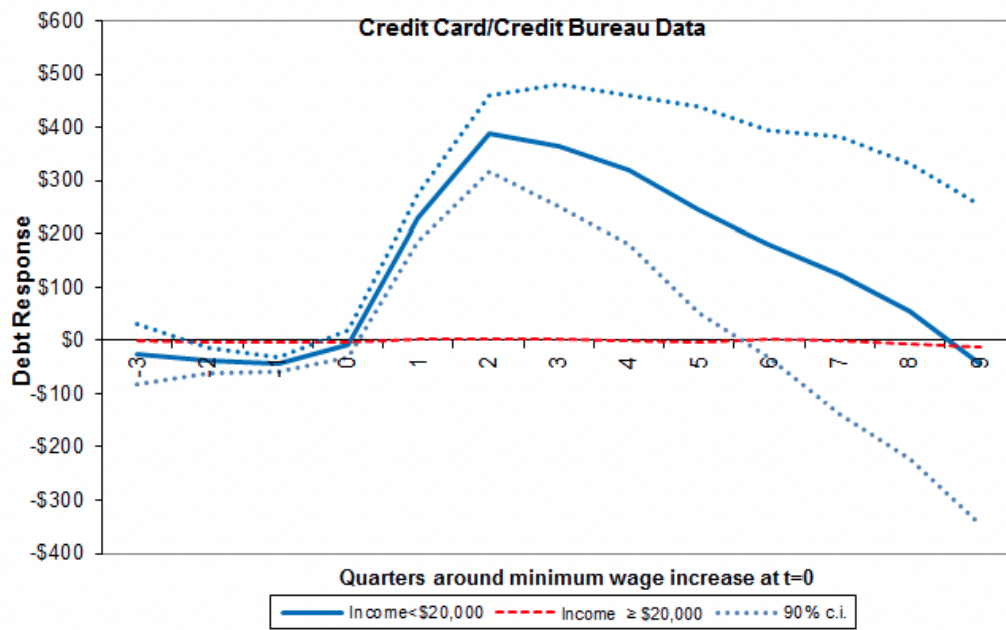


Note: Quarters around minimum-wage increase at t=0.

Spending, Income, and Debt responses to MW hikes (Aaronson et al. 2012, AER)

- **Debt:** Auto loan debt rises by \$200, the sum of auto, home equity and credit-card debt rises by \$440 per quarter following the MW hike.

Figure 2. Debt (auto, home equity, and credit card) response to a change in the minimum wage



Does MW reduce Racial Inequality in Earnings?

To Reduce Racial Inequality, Raise the Minimum Wage

Diversity and inclusion programs for elites are tokens. A large wage increase that would most benefit the Black working class is far better.

Oct. 25, 2020

- Congress's decision in 1966 to raise MW led to a significant drop in earnings inequality between Black and White Americans, and explains more than 20% of the overall reduction in succeeding years, 1967 and 1980
 - In 1963, Black workers in the U.S. earned on average 59 cents for every dollar earned by the average white workers.
 - Today, it is average 78 cents for every dollar
 - This ratio has remained unchanged since 1980.

Group Activity:

Minimum wage Raise

□ PROS

□ CONS

Group Activity:

Minimum wage Raise

▣ PROS

- If you work full-time with the current MW of \$7.25, you are below the poverty line
- Helps workers who most need the extra income
- No changes in employment
- Workers' satisfaction goes up, with less turnover and higher productivity
- MW has to be at least tied to inflation or median wage
- Reduces racial inequity

▣ CONS

- Higher MW is an added cost for businesses
- Makes workers more expensive
- More firing
- Prices higher (Price passthrough)
- 1/5 of MW workers are teens
- No workers in 40% of poor HH
- EITC or cash assistance would be Better policies
- More Automation
- Businesses will offset higher MW by reducing benefits
- Widens racial inequity (business prefer to employ a relatively high-skilled, experienced workers over young, under-skilled)