# Agricultural Minimum Wage and US Agricultural Employment

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## Abstract

American farmers have relied on guest workers, but farmers are required to pay them at least the minimum wage, called the Adverse Effect Wage Rates (AEWRs). Using a border discontinuity approach, **I find that the AEWR policy led to increased agricultural employment, especially for less-educated citizen Hispanic workers** but had insignificant effects on overall agricultural employment for other groups of workers. Further analysis reveals a similar pattern with hours of work and hourly wages as outcome variables. This suggests that higher AEWRs do not adversely affect American workers and may attract less-educated citizen Hispanic workers who were previously paid lower wages compared to other workers. Moreover, higher AEWRs are unlikely to discourage the hiring of guest workers, possibly due to a lack of viable options for employers to substitute them.

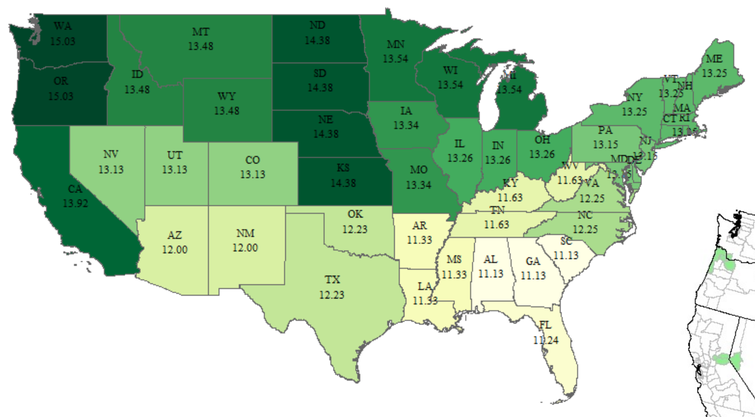


**Figure 1.** AEWR in 2019 ($)

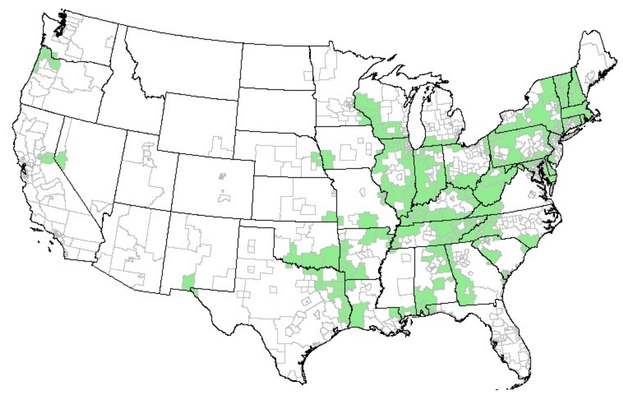

**Figure 2.** PUMA-pairs along the state border (80 miles cutoff)

## Motivation and Research Question

Motivation

- **American farmers have faced widespread labor shortages for years, and non-citizen workers have become an essential labor resource.**
- However, growing concerns have been raised that non-citizen workers, who are willing to work for low wages, can depress the wages and employment of American workers in the agricultural sector.
- To address these potential challenges, **the US government requires employers who hire guest workers through the H-2A program to pay at least the minimum wage, called the Adverse Effect Wage Rates (AEWRs).**
- This paper seeks to answer whether the AEWRs avoid any adverse effects on American agricultural workers in accordance with policy objectives and whether specific groups of agricultural workers are disadvantaged due to this policy.

Research Questions

**Does agricultural minimum wages affect agricultural employment, hours of work, and hourly wages?**

All agricultural workers
- Less-educated workers
  1. Non-citizen workers
  2. Citizen workers
     (1) Non-Hispanic White
     (2) Non-Hispanic Black
     (3) Non-Hispanic other
     (4) Hispanic
- Guest workers

## Data

- AEWRs: Department of Labor and Congressional Research Service Reports
- Dependent and control variables: American Community Survey, 2005-2019 and Department of Labor's H-2A program data
- Unit of analysis: Public Use Microdata Area (PUMA), similar to the county level

## Empirical Specification

Border Discontinuity Approach (Dube et al. 2010)

$$y_{ipt} = \alpha + \beta AEWR_{ipt} + \gamma X_{it} + \phi_i + \tau_{pt} + \varepsilon_{ipt}$$

where $i$ = PUMA, $p$ = PUMA-pair, and $t$ = year

$y_{ipt}$ : Employment, usual hours of work per week, or wage and salary income
$AEWR_{ipt}$: Adverse Effect Wage Rate (agricultural minimum wage)
$X_{it}$ : Control variables (demographic and socio-economic characteristics)
$\phi_i$ : PUMA fixed effects
$\tau_{pt}$ : Pair-specific time effects
$\varepsilon_{ipt}$ : Error term
The standard errors are clustered by state and border segment

Sample: PUMA-pairs across state borders with centroids less than 80 miles apart
: The contiguous PUMA serves as a suitable control group for its cross-state counterpart, sharing similar climate, crops grown, and workers' characteristics but differing in AEWR.

## Results

- The increase in AEWR leads to an increase in employment for less-educated agricultural workers, especially Hispanic citizen workers.
- This trend aligns with two other outcome variables: total hours worked in a year and hourly wages.

| Dependent variable: Employment | 100 miles | 90 miles | 80 miles | 70 miles | 60 miles |
|---|---|---|---|---|---|
| All | 63.131 | 88.525 | 131.344 | 131.508 | 90.662 |
| | (89.999) | (93.511) | (91.737) | (93.096) | (75.987) |
| Less-educated | 55.029 | 60.67 | 105.376* | 109.447** | 68.143 |
| | (64.924) | (63.048) | (54.683) | (51.826) | (46.356) |
| Non-Citizen | -4.383 | -14.842 | 9.609 | 23.664 | 18.983 |
| | (26.374) | (31.061) | (32.039) | (31.192) | (37.559) |
| Citizen | 59.412 | 75.512 | 95.767** | 85.783* | 49.16 |
| | (54.063) | (50.761) | (45.767) | (46.301) | (44.382) |
| White | 21.155 | 56.988 | 79.807* | 68.58 | 29.107 |
| | (49.388) | (46.336) | (41.683) | (43.033) | (39.773) |
| Black | 3.528 | -7.819 | -3.799 | 0.781 | 9.539 |
| | (15.587) | (8.661) | (8.362) | (8.813) | (6.42) |
| Other | 9.652 | 4.149 | -3.083 | -2.64 | -2.965 |
| | (7.479) | (6.855) | (5.057) | (5.068) | (6.092) |
| Hispanic | 25.077** | 22.194** | 22.842** | 19.061** | 13.479 |
| | (9.986) | (8.37) | (8.718) | (8.147) | (9.616) |
| Guest workers | -27.423 | -25.126 | -20.019 | -0.633 | 26.596 |
| | (24.871) | (33.215) | (35.182) | (25.844) | (20.937) |
| Observations | 7,950 | 7,260 | 6,450 | 5,730 | 4,620 |

## Tests of Cross-Border Spillover Effects

| Dependent variable: Employment | 80 miles |
|---|---|
| All | 68.422 |
| | (109.377) |
| Less-educated | 48.108 |
| | (70.998) |
| Non-Citizen | 70.893 |
| | (55.982) |
| Citizen | -22.785 |
| | (37.485) |
| White | -32.565 |
| | (37.825) |
| Black | 71.849 |
| | (52.615) |
| Other | 2.362 |
| | (9.889) |
| Hispanic | -1.269 |
| | (8.116) |
| Guest workers | -2.050 |
| | (10.306) |
| Observations | 6,450 |

$$y_{ipt} - \overline{y_{ipt}} = \alpha + \beta AEWR_{ipt} + \gamma(X_{it} - \overline{X_{it}}) + \phi_i + \tau_{pt} + \varepsilon_{ipt}$$

- I test whether spillovers occur when the labor market within a PUMA pair is linked.
- I compare the employment effects of the AEWR between border PUMAs and those in the interior of the state by subtracting the employment means of the state interior PUMAs from those along the state border.
- I do not find any evidence that employment spillovers are contaminating my local estimates.

## Conclusions

- I study the impact of AEWRs on labor market outcomes for various groups of agricultural workers.
- Using the border discontinuity approach, I find a positive impact of the AEWR on employment, hours of work, and hourly wages, especially for less-educated Hispanic citizen workers.
- As intended, the AEWR does not have an adverse effect on American agricultural workers, and higher AEWRs are likely to attract low-paid agricultural workers.

## Contact

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