Do Minimum Wages Really Reduce Teen Employment? Evidence from the United States

Productivity, Investment in Human Capital and the Challenge of Youth Employment

October 16, 2012
University of Bergamo
Bergamo, Italy

Sylvia A. Allegretto, PhD
Economist, Institute for Research on Labor and Employment
University of California, Berkeley USA
Outline

- History of the MW in the U.S.
- Importance of MW
- MW workers
- Outline of Studies: Data & Methods
- Results: MW Effects
- Further discussion
History of the Federal MW

$0.00
$1.00
$2.00
$3.00
$4.00
$5.00
$6.00
$7.00
$8.00
$9.00
$10.00


$7.25

Real MW
2007: $5.85 to $7.93
2010: $7.25 to $9.04
Number of SMW > FMW
Who are MW workers?

- Share of WF
- Within group MW share
- Share of all MW workers

Bar chart showing the distribution of workers across different age groups.
Who are MW workers?

- **Share of WF**
- **Within group MW share**
- **Share of all MW workers**
Importance of MW

- Politically debated for years
- Three decades of declining real wages
- Recent declines in family incomes
  - -8.1% or $4,400 since 2007
- Significant increases in student loans
- Huge gap and growing trends in inequality
4th Generation MW research

- Builds upon G1-G3
- Local case studies
- National panel studies
  - Neumark & Wascher (2007, 2000)
- Replicates and refutes “old-consensus” estimates on employment -1% to -3%
IRLE on forefront of MW research

- Do Minimum Wages Really Reduce Teen Employment? Accounting for Heterogeneity and Selectively in State Panel Data
  Allegretto, Dube & Reich
  *Industrial Relations*
  April 2011

  Dube, Lester, Reich
  *Review of Economics and Statistics*
  November 2010
Recall importance of Teens

- 1/3 of MW workers are teens
- 43% of teenage workers are MW earners
- MW workers are disproportionally:
  - Young
  - Female
  - High school degree or less
  - Hispanic or African American
Ages 16-19

Ages 25+

Panel data 1990-2010

- Current Population Survey (CPS)
  - Estimates monthly unemployment rate, etc.
  - Individual-level repeated cross-section
  - Widely used in research

- CPS is merged w/macro variables that capture variation in aggregate labor demand & supply

- Merge with MW variables
Canonical Fixed Effects Model

\[ y_{ist} = \beta MW_{st} + X_{ist} \Gamma + \lambda \cdot unemp_{st} + \phi_s + \tau_t + \varepsilon_{ist} \]

- \( MW \) refers to the log of the minimum wage
- \( i, s, \) and \( t \) denote: individual, state & time indexes
- \( X \) is a vector of individual characteristics
- \( unemp \) is the quarterly unemployment rate in state \( s \) at time \( t \)
- \( \phi_s \) refers to state fixed effects
- \( \tau_t \) represents quarterly time dummies
- Standard errors clustered at the state level
Building FE Specification

\[ y_{ist} = \beta MW_{st} + X_{ist} \Gamma + \lambda \cdot \text{unemp}_{st} + \phi_s + \tau_t + \epsilon_{ist} \]  

(1)

\[ y_{ist} = \beta MW_{st} + X_{ist} \Gamma + \lambda \cdot \text{unemp}_{st} + \phi_s + \tau_{dt} + \epsilon_{ist} \]  

(2)

\[ y_{ist} = \beta MW_{st} + X_{ist} \Gamma + \lambda \cdot \text{unemp}_{st} + \phi_s + \psi_s \cdot t + \tau_t + \epsilon_{ist} \]  

(3)

\[ y_{ist} = \beta MW_{st} + X_{ist} \Gamma + \lambda \cdot \text{unemp}_{st} + \phi_s + \psi_s \cdot t + \tau_{dt} + \epsilon_{ist} \]  

(4)

- Importance of controlling for unexplained heterogeneity
## Wage Effects

<table>
<thead>
<tr>
<th></th>
<th>(1FE)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4ADR)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All Teens</strong></td>
<td>( \eta )</td>
<td>0.123***</td>
<td>0.161***</td>
<td>0.165***</td>
</tr>
<tr>
<td></td>
<td>se</td>
<td>(0.026)</td>
<td>(0.030)</td>
<td>(0.025)</td>
</tr>
<tr>
<td><strong>16-17</strong></td>
<td>( \eta )</td>
<td>0.197***</td>
<td>0.224***</td>
<td>0.221***</td>
</tr>
<tr>
<td></td>
<td>se</td>
<td>(0.032)</td>
<td>(0.036)</td>
<td>(0.030)</td>
</tr>
<tr>
<td><strong>18-19</strong></td>
<td>( \eta )</td>
<td>0.074**</td>
<td>0.115***</td>
<td>0.120***</td>
</tr>
<tr>
<td></td>
<td>se</td>
<td>(0.030)</td>
<td>(0.037)</td>
<td>(0.038)</td>
</tr>
<tr>
<td><strong>Division-specific time controls</strong></td>
<td>-</td>
<td>Y</td>
<td>-</td>
<td>Y</td>
</tr>
<tr>
<td><strong>State-specific time trends</strong></td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
## Employment Effects

<table>
<thead>
<tr>
<th></th>
<th>(1FE)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4ADR)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All Teens</strong></td>
<td>η</td>
<td>-0.118**</td>
<td>-0.036</td>
<td>-0.034</td>
</tr>
<tr>
<td></td>
<td>se</td>
<td>(0.022)</td>
<td>(0.034)</td>
<td>(0.027)</td>
</tr>
<tr>
<td><strong>16-17</strong></td>
<td>η</td>
<td>-0.232**</td>
<td>-0.077</td>
<td>-0.071</td>
</tr>
<tr>
<td></td>
<td>se</td>
<td>(0.028)</td>
<td>(0.043)</td>
<td>(0.032)</td>
</tr>
<tr>
<td><strong>18-19</strong></td>
<td>η</td>
<td>-0.053</td>
<td>-0.010</td>
<td>-0.020</td>
</tr>
<tr>
<td></td>
<td>se</td>
<td>(0.021)</td>
<td>(0.034)</td>
<td>(0.027)</td>
</tr>
<tr>
<td>Division-specific time controls</td>
<td>-</td>
<td>Y</td>
<td>-</td>
<td>Y</td>
</tr>
<tr>
<td>State-specific time trends</td>
<td>-</td>
<td>-</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
MW Employment Time Paths

(1)

(4)
# Hours Effects

<table>
<thead>
<tr>
<th></th>
<th>(1FE)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4ADR)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All Teens</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( \eta )</td>
<td>-0.074**</td>
<td>-0.054</td>
<td>-0.001</td>
<td>-0.032</td>
</tr>
<tr>
<td>se</td>
<td>(0.035)</td>
<td>(0.048)</td>
<td>(0.040)</td>
<td>(0.042)</td>
</tr>
<tr>
<td><strong>16-17</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( \eta )</td>
<td>-0.070</td>
<td>0.002</td>
<td>-0.011</td>
<td>0.038</td>
</tr>
<tr>
<td>se</td>
<td>(0.042)</td>
<td>(0.074)</td>
<td>(0.044)</td>
<td>(0.073)</td>
</tr>
<tr>
<td><strong>18-19</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( \eta )</td>
<td>-0.090**</td>
<td>-0.092*</td>
<td>-0.011</td>
<td>-0.079*</td>
</tr>
<tr>
<td>se</td>
<td>(0.042)</td>
<td>(0.049)</td>
<td>(0.050)</td>
<td>(0.042)</td>
</tr>
<tr>
<td><strong>Division-specific time controls</strong></td>
<td>-</td>
<td>Y</td>
<td>-</td>
<td>Y</td>
</tr>
<tr>
<td><strong>State-specific time trends</strong></td>
<td>-</td>
<td>-</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>
## ADR main results for teens

<table>
<thead>
<tr>
<th>Specification</th>
<th>(1 FE)</th>
<th>(4 ADR)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Wages</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( \eta )</td>
<td>0.123***</td>
<td>0.149***</td>
</tr>
<tr>
<td>se</td>
<td>(0.026)</td>
<td>(0.024)</td>
</tr>
<tr>
<td><strong>B. Employment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>coeff</td>
<td>-0.047**</td>
<td>0.019</td>
</tr>
<tr>
<td>se</td>
<td>(0.022)</td>
<td>(0.024)</td>
</tr>
<tr>
<td>( \eta )</td>
<td>-0.118**</td>
<td>0.047</td>
</tr>
<tr>
<td><strong>C. Hours</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>( \eta )</td>
<td>-0.074**</td>
<td>-0.032</td>
</tr>
<tr>
<td>se</td>
<td>(0.035)</td>
<td>(0.042)</td>
</tr>
</tbody>
</table>

Division-specific time controls: \textit{Y}  
State-specific time trends: \textit{Y}
Local case study

State A

County R

Local Labor Market

State B

County P
DLR generalizes local case study design
DLR County pairs

Number of Contiguous County Pairs With a Minimum Wage Differential
Average Difference in Minimum Wages in Pairs with a Differential
## DLR main results for restaurants

<table>
<thead>
<tr>
<th>Specification</th>
<th>(1 FE)</th>
<th>(6 DLR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Earnings</td>
<td>$\eta$ 0.224***</td>
<td>0.188***</td>
</tr>
<tr>
<td></td>
<td>se (0.033)</td>
<td>(0.060)</td>
</tr>
<tr>
<td>B. Employment</td>
<td>$\eta$ -0.211**</td>
<td>0.016</td>
</tr>
<tr>
<td></td>
<td>se (0.095)</td>
<td>(0.098)</td>
</tr>
<tr>
<td>C. Labor demand elasticity</td>
<td>-0.787*</td>
<td>0.079</td>
</tr>
<tr>
<td></td>
<td>(0.427)</td>
<td>(0.286)</td>
</tr>
<tr>
<td>County pair X period dummies</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>State-specific time trends</td>
<td>Y</td>
<td></td>
</tr>
</tbody>
</table>
DLR Employment (1) and (6)
Discussion of results

- Monopsony at work?
- Other positive effects of MWs
  - Does not kills jobs, but job vacancies
  - Decreases turnover
  - Decreases recruiting & training costs
  - Increases productivity
  - Elevates pressure on government support
  - MW as stimulus
Widening Wedge of Wage Inequality
Widening Wedge of Wage Inequality

Female

Yearly data from 1979 to 2011 showing the widening wedge of wage inequality for females, with different percentile lines for 10th, 20th, 30th, 50th, 70th, 80th, 90th, and 95th percentiles.
ADR and DLR are strong evidence against conventional wisdom of negative employment effects.

Failure to account for critical differences in employment patterns coupled with MW changes results in biased estimates—localized estimates are better.

Spurious estimates are common and sizeable - both for low wage sectors such are restaurants and for low-wage groups such as teens. This explains why the 3G studies were wrong.

Our estimates are robust using multitude of data sources: QCEW, CBP, QWI, Census/ACS, CPS
THANK YOU!

Do Minimum Wages Really Reduce Teen Employment?

Productivity, Investment in Human Capital and the Challenge of Youth Employment

October 16, 2012
Bergamo, Italy

Sylvia A. Allegretto, PhD
Economist, Institute for Research on Labor and Employment
University of California, Berkeley USA