Labor Market Effects of Temporary Work Visas: Evidence from the Mexican *Bracero* Exclusion

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AEA Meetings · January 7, 2018
Outline

Setting

New data and a model

Results

Mechanisms

An agenda
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An agenda
Bracero workers
Bracero workers
Total *bracero* workers
“Studies of the operation of the Mexican labor program have clearly established that it is adversely affecting the wages, working conditions, and employment opportunities of our own agricultural workers.”
The 1959 evaluation
The 1959 evaluation
The 1959 evaluation

Perils of the Mexican Invasion

By S. J. Holmes
Professor of Zoology, University of California

While still paying for past blunders in the importation of cheap labor, we are now admitting a new menace to national prosperity from across the Rio Grande.

The United States seems fated never to be free from troubles attendant on race and immigration. First it was the negroes — then it was the Chinese and Japanese — and now it is the Mexicans. Soon it will be the Filipinos. Lately the Mexican situation has developed to an acute stage and will doubtless receive much attention during the next session of Congress.

The influx of Mexicans has been stimulated by the desire of local industries to supplement the declining labor supply from Japan and the Philippines. The advocates of free Mexican immigration are manifestly quite sensitive, and they endeavor to make out that it is not nearly so great as it seems. In considering any restrictive measures the number of persons apt to be affected is obviously a matter of prime importance.
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**Archival data**

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Archival data

United States Department of Agriculture
Bureau of Agricultural Economics

Farm wage rates: Wage rates by States, April 1, 1945, and April 1, 1946

<table>
<thead>
<tr>
<th>State</th>
<th>1945:</th>
<th>1946:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Per month</td>
<td>Per month</td>
</tr>
<tr>
<td></td>
<td>with board</td>
<td>without board</td>
</tr>
<tr>
<td>Maine</td>
<td>87.50</td>
<td>87.00</td>
</tr>
<tr>
<td>N.H.</td>
<td>81.75</td>
<td>89.00</td>
</tr>
<tr>
<td>Vt.</td>
<td>83.50</td>
<td>87.00</td>
</tr>
<tr>
<td>Mass.</td>
<td>86.25</td>
<td>90.00</td>
</tr>
<tr>
<td>R.I.</td>
<td>90.00</td>
<td>88.00</td>
</tr>
<tr>
<td>Conn.</td>
<td>85.50</td>
<td>85.75</td>
</tr>
<tr>
<td>N.Y.</td>
<td>87.25</td>
<td>94.25</td>
</tr>
<tr>
<td>N.J.</td>
<td>82.25</td>
<td>95.00</td>
</tr>
<tr>
<td>Pa.</td>
<td>82.00</td>
<td>86.50</td>
</tr>
</tbody>
</table>

Appendix A - Estimated employment and origin of seasonally hired workers in agriculture and food processing by State and selected agricultural reporting areas. End of period July 1-July 15, 1944

<table>
<thead>
<tr>
<th>Region, State, and agricultural reporting area</th>
<th>Total hired seasonal employment</th>
<th>Agricultural activities</th>
<th>Foreign</th>
<th>Food processing total</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Total</td>
<td>1,023,187</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eastern Seaboard</td>
<td>220,965</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connecticut</td>
<td>11,700</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delaware</td>
<td>4,644</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Florida</td>
<td>6,742</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central Ridge</td>
<td>2,106</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indian River</td>
<td>6,970</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower East Coast</td>
<td>1,666</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tampa Bay</td>
<td>501</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other areas</td>
<td>919</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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1. Includes Puerto Rico.
Model of induced technical advance
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**L fraction Mexican**

Average Mexican fraction (season peak) over years 1950 to 1970. The graph shows the Bracero fraction ($B/L$) in 1955:

- **Doted line** indicates No exposure ($B/L = 0$).
- **Solid line** indicates Low exposure ($0 < B/L < 0.2$).
- **Dashed line** indicates High exposure ($B/L \geq 0.2$).

Yearly data points represent the average Mexican fraction (season peak) for each year.
Real wages

Bracero fraction ($B/L$) in 1955:
- No exposure ($B/L = 0$)
- Low exposure ($0 < B/L < 0.2$)
- High exposure ($B/L \geq 0.2$)
Hired seasonal farm employment

Mexican workers

Domestic workers

Bracero fraction ($B/L$) in 1955:
- No exposure ($B/L = 0$)
- Low exposure ($0 < B/L < 0.2$)
- High exposure ($B/L \geq 0.2$)
Baltagi-Li semiparametric FE: Wage

\[ \ln \text{Mexican workers} \mid \text{state, quarter-by-year FE} \]
Baltagi-Li semiparametric FE: Employment

\[ \ln \text{Domestic workers} | \text{state, month-by-year FE} \]

\[ \ln \text{Mexican workers} | \text{state, month-by-year FE} \]
Robustness

→ Domestic migrants or year-round
→ Other foreign
→ Pre-trends
→ Treatment year
→ Handling of zeros
→ SUTVA
Robustness

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Tomato mechanization
Tomato mechanization
Tomato harvester adoption

Peak annual *bracero* stock (left axis)

Tomato harvest mechanization (right axis)
Differential Rybczynski effects: Event study

Tomatoes

Cotton

Sugar beets

Asparagus

Strawberries (fresh)

Lettuce

Celery

Cucumbers (pickling)

Citrus
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Moving forward

1. *Bracero* exclusion
   - Direct evidence of tech. advance
   - Rybczynski effects
   - Other adjustment margins

2. Migration restrictions
   - Natural experiments
     - Lee et al. 2017; Mayda et al. 2017, Feigenberg & Lubotsky 2017

3. Induced technical advance
   - Upward-sloping demand?
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http://mclem.org