Wendy’s, Walmart, or Whole Foods

DOES SHALE ENERGY DEVELOPMENT AFFECT RETAIL FOOD OPTIONS IN RURAL COMMUNITIES?

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OSU CARES/OSU Extension
Community Access to Resources and Educational Services
Healthy Food Access

The physical and economic ability to obtain culturally acceptable and nutritionally adequate food
Retail Food Environment
Retail follows people.

AND RETAIL FOLLOWS MONEY.
Research Questions

Has the influx of workers and wealth associated with shale oil and gas development changed retail food options available to original residents?
Percent Change in Population 2007-2012
<table>
<thead>
<tr>
<th></th>
<th>NAICS</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>445110</td>
<td>Supermarkets and Other Grocery Stores</td>
</tr>
<tr>
<td>2</td>
<td>447110</td>
<td>Convenience Stores attached to Gas Stations</td>
</tr>
<tr>
<td>3</td>
<td>452910</td>
<td>Warehouse Stores and Supercenters</td>
</tr>
<tr>
<td>4</td>
<td>722513</td>
<td>Limited-Service Restaurants</td>
</tr>
</tbody>
</table>
Explanatory Variables

**Key Explanatory Variable**
1. Number of Oil and Gas workers NAICS=2111 & Mining Support workers NAICS=2131 (EMSI)
2. Interaction with URBAN POPULATION

**Control Variables**
1. Log population density (BEA and USGS land area)
2. Log per capita income (BEA)
3. Poverty rate (SAIPE)
4. Industry mix (EMSI)
Research Strategy: Triple Differences

\[
# \text{Stores}\downarrow DD = \\
(\# \text{Stores}\downarrow 2012 - \# \text{Stores}\downarrow 2007) - (\# \text{Stores}\downarrow 2007 - \# \text{Stores}\downarrow 2002)
\]

**First difference:** The difference between the boom and preboom periods

**Second difference:** The change between the beginning and end points of each period

**Third difference:** The difference between shale and non-shale
<table>
<thead>
<tr>
<th>Type of Establishment</th>
<th>Urban population inflection point</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fast Food</td>
<td>53,774</td>
</tr>
<tr>
<td>Supercenters</td>
<td>59,401</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>County</th>
<th>Urban Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belmont</td>
<td>36,881</td>
</tr>
<tr>
<td>Carroll</td>
<td>8,820</td>
</tr>
<tr>
<td>Harrison</td>
<td>2,850</td>
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<tr>
<td>Jefferson</td>
<td>44,382</td>
</tr>
<tr>
<td>Noble</td>
<td>4,923</td>
</tr>
</tbody>
</table>
Local Policy Interventions

Retail
- Work with existing retail
- New retail (encouraging healthy and discouraging unhealthy)

Impact Fees
- Improve transportation networks
Conclusions

Shale oil and gas activity is changing food environments in local communities

In particular, activity is impacting fast food and supercenter options but has little effect on grocery stores

Local officials should consider policy options