Does Diesel Price Matter?
Estimate the elasticities of trucking behaviors with respect to fuel price

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Research Question:
How do truckers respond to changes in diesel price?
- Drive less?
- Choose better fuel economy?
- Ship more efficiently? (ton-miles/gallon)

Data Source:
- Vehicle Inventory and Use Survey (1977-2002)
- U.S. Energy Information Administration

Method:
- Baseline OLS Estimation
- Instrumental Variable Estimation
  - IV: Average diesel price in non-neighboring states

Yes, diesel price affects VMT!
- 10% increase in diesel fuel price →
  - 5.4% reduction in vehicle miles traveled (VMT) for single-unit trucks,
  - 0.9% increase in VMT for truck tractors.

No, diesel price does not affect MPG!
- Truckers’ choice of fuel economy responds little to fluctuation in fuel price.
- Shipping efficiency appears to be negatively correlated with the diesel fuel price.

<table>
<thead>
<tr>
<th>Dpt. Variables</th>
<th>log(VMT)</th>
<th>log(MPG)</th>
<th>log(Ship.Eff.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elasticities</td>
<td>-0.54**</td>
<td>0.010</td>
<td>-0.75***</td>
</tr>
<tr>
<td>(R. Std. Err.)</td>
<td>(0.26)</td>
<td>(0.12)</td>
<td>(0.23)</td>
</tr>
<tr>
<td>HST×price</td>
<td>0.13</td>
<td>0.087</td>
<td>0.55***</td>
</tr>
<tr>
<td>TT×price</td>
<td>0.63***</td>
<td>-0.028</td>
<td>0.24</td>
</tr>
<tr>
<td>Truck char.</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Business char.</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>2-way FE</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

R²: 0.47 0.23 0.48
No. of obs.: 133,494 133,494 121216

Note: HST-heavy single unit trucks; TT-truck tractors; all estimations apply IV method; ***p<0.01, **p<0.05, *p<0.1