Poland’s Menthol Cigarette Ban: Small Effects with Large Policy Implications

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Co-authors of these studies have worked for organizations (American Cancer Society Inc and the World Health Organization) that have adopted positions on the public policies being studied.

I and co-authors' opinions expressed here are my own and do not represent those of my employers, my co-authors, or their employers.
In May 2020 menthol cigarette sales ended across the EU.

All other flavors except menthol had been removed in May 2016.
Menthol Ban Evaluation

- In Poland, menthol cigarette sales shares were 28%, the highest of any EU country.
- Prior analyses of the effects of menthol cigarette sales bans have come from areas with low menthol cigarette sales shares or small areas with legal access to menthol cigarettes elsewhere.

**OBJECTIVE:** measure whether cigarette sales declined after the May 2020 menthol ban
Data Detail

- Monthly NielsenIQ data (May 2018—April 2021)
- Sales of Cigarettes and Roll-Your-Own Tobacco
  - 8 regions (Warsaw City, Central, West, East, North, South, South-East, and South-West)
  - Split by flavor (standard and menthol)
A bite-style regression model controlling for pre-ban menthol share, climate, border opening status, and Apple movement data
Per Capita Cigarette Sales by Nielsen Region (May 2018—April 2021)

- After ban
  - Menthol sales are replaced by standard cigarettes
  - RYO sales continue growing after the ban

- Was this menthol to standard replacement enough to stop any loss in total cigarette sales?
Regional average cigarette price (Real PLN per stick, May 2018—April 2021)

- Prices dropped across all remaining legal categories
### Fully-Adjusted Regression Results for Per Month Per Capita Total Cigarettes and Roll-Your-Own Tobacco

<table>
<thead>
<tr>
<th></th>
<th>Cigarettes</th>
<th>Cig + Price</th>
<th>RYO</th>
<th>RYO + Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post</td>
<td>12.87*</td>
<td>15.83**</td>
<td>2.312*</td>
<td>2.320*</td>
</tr>
<tr>
<td>Pre-Menthol Share # Post</td>
<td>-15.02***</td>
<td>-16.86***</td>
<td>-2.285*</td>
<td>-2.288*</td>
</tr>
<tr>
<td>Time Trend</td>
<td>0.0908</td>
<td>0.0314</td>
<td>0.0883***</td>
<td>0.0881***</td>
</tr>
<tr>
<td>Heating Degree Days</td>
<td>-13.15***</td>
<td>-14.26***</td>
<td>-0.574***</td>
<td>-0.575***</td>
</tr>
<tr>
<td>EU Border Open</td>
<td>8.446***</td>
<td>4.528**</td>
<td>0.0103</td>
<td>0.00536</td>
</tr>
<tr>
<td>Non-EU Border Open</td>
<td>-6.766*</td>
<td>-7.371*</td>
<td>-1.110*</td>
<td>-1.110*</td>
</tr>
<tr>
<td>Walking Volume</td>
<td>3.695***</td>
<td>4.939***</td>
<td>0.222</td>
<td>0.222</td>
</tr>
<tr>
<td>Employment Rate</td>
<td>0.865*</td>
<td>1.380***</td>
<td>0.105</td>
<td>0.107</td>
</tr>
<tr>
<td>Average Price (PLN Real)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-15.29</td>
<td>154.1</td>
<td>13.38</td>
<td>13.64</td>
</tr>
<tr>
<td>Mean Menthol Ban Effect Size</td>
<td>-2.15</td>
<td>-1.032</td>
<td>0.0272</td>
<td>0.0326</td>
</tr>
<tr>
<td>Mean Menthol Ban Effect P-Value</td>
<td>0.199</td>
<td>0.561</td>
<td>0.798</td>
<td>0.841</td>
</tr>
</tbody>
</table>

*p < 0.05, **p < 0.01, ***p < 0.001
Only Warsaw saw a significant decline in cigarette sales
Results Translated:

- EU Menthol Ban did not significantly decrease total cigarette sales in Poland
- Regions with more menthol share at baseline saw larger declines post ban
- Cigarette prices fell after the ban, potentially to stop early sales declines
- EU border closures decreased sales in regions with such a border
- Non-EU border closures increased sales in regions with such a border
QUESTIONS

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