The Effect of Short-Term Rentals on Local Consumption Amenities: Evidence from Madrid

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Motivation

- Short-term rentals contribute to substitute residents for tourists whose consumption patterns differ from each other.
- Airbnb-induced tourism leads to urban transformation enhancing tourist-oriented establishments such as restaurants, bars, cafes and clubs.
- Unlike the traditional accommodation industry, short-term rentals spread across the city, therefore redistributing the economic impact of tourism outside downtown areas.

Results

We find evidence that short-term rentals foster consumption amenities although half of the increase is explained by displacement existing stores.

<table>
<thead>
<tr>
<th></th>
<th>OLS</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airbnb rooms</td>
<td>0.197</td>
<td>0.022</td>
</tr>
<tr>
<td>Covariates</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Census tract fixed effects</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Year fixed effects</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Distance x year</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.450</td>
<td>0.986</td>
</tr>
<tr>
<td>F Stat, Excluded instrument</td>
<td>48.466</td>
<td>68.246</td>
</tr>
</tbody>
</table>

- Alternative specification: we replicate our IV using log-level specification, a CF-IV, alternative measures of Airbnb activity like the number of listings and reviews and adding the Airbnb rooms from neighbors census tract to control for spatial spillovers.
- Alternative sample: we replicate our empirical strategy for Barcelona, removing all census tract in Madrid with new hotel openings or being located in the city center and near the airport, and using different aggregation units such as neighborhoods or transport zones.

Empirical Strategy

We estimate the effect of short-term rentals arrival on the number of consumption amenities at the census tract level during the period 2014-2019 in Madrid.

Consumption amenities$_{it} = \beta$Airbnb rooms$_{it} + \gamma X_{it} + \delta Y_{it} + \gamma Z_{it} + \epsilon_{it}$

- Bartik-like IV: We instrument the number of Airbnb rooms in census tract $i$ in year $t$ with the interaction between the share of rental houses in 2011 in each census tract and Google Trends for the word Airbnb.

Shift-Share$_{it} = \text{Rental houses}_{i,2011} \times \text{Airbnb Google Searches}_t$

Mechanism

We complement our initial results accessing the effect of Airbnb on employment, consumption amenities individually and other activities.

Conclusions

- Test the local impact of Airbnb on consumption amenities using small administrative units (census tract) as unit of observation.
- Positive effect in employment and number of establishments after ruling out displacement effect.
- Higher effects in off-the-beaten touristic areas.

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Full paper