DOES PLANNING REGULATION PROTECT INDEPENDENT RETAILERS?

Raffaella Sadun
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BACKGROUND

• Retailing has gradually become a major industry in most developed countries (≈20% employment in the UK)

• This phenomenon has coincided with deep transformations:
  – IT Revolution
  – Vertical Integration
  – Emergence of national chains and large retail stores (big-boxes) and decline of small, independent retailers

• Fate of independent stores and local communities spurred an intense policy debate
  – Anti Wal-Mart movements in the US
  – Anti chains movements in the UK (Friends of the Earth, High Street Britain, Tescopoly etc etc)
A TYPICAL POLICY TOOL: PLANNING REGULATION

• Placing restrictions on the creation of “big boxes” via planning regulation is a typical policy tool chosen to slow down the decline of independent retailers.

• However, the use of planning regulation is controversial:
  1. Possible productivity side-effects (big-boxes are high TFP establishments)
  2. No clear evidence planning restrictions are actually protecting independents

• Take the example of the UK 1996 planning reform, which made entry of big-boxes extremely difficult (test of need, sequential test).
CASE: THE UK 1996 PLANNING REFORM

The introduction of stricter rules against big-boxes was followed by a substitution of big boxes with smaller chain stores in town centres...

Policy binds after 2 years (construction lag)

Number of food stores opened by major retail chains in/outside town centre

Note: England only. Source: ODPM and IGD
CASE: THE UK 1996 PLANNING REFORM

The introduction of stricter rules against big-boxes was followed by a substitution of big boxes with smaller chain stores in town centres...
CASE: THE UK 1996 PLANNING REFORM

The introduction of stricter rules against big-boxes is followed by a substitution of big boxes with smaller chain stores in town centres... and by a decline of independents’ employment growth.

DOES PLANNING REGULATION HELP INDEPENDENT RETAILERS?

- Not necessarily. Planning regulation effect depends on the relationship between big-boxes and other stores competing with independents.

- Two possible cases:
  1. Big-boxes cannot be substituted by other stores. In this case, blocking big boxes helps independent retailers (standard argument for planning regulation).

  2. Big boxes can be substituted by other stores, which exert stronger competitive pressure on independents (e.g., Tesco express). In this case, blocking big boxes may actually harm independent retailers.

- This paper presents some evidence supporting (2).
THIS PAPER

- Observe implementation of planning restrictions against big-boxes across 305 English Local Authorities observed between 1998 and 2004

- Instrument policy implementation (planning grants) with political affiliation of planning officers (similar to Bertrand and Kramartz, 2002)

- Main Findings
  - Lenient policy implementation (higher big box entry) associated with *positive* employment growth of independent stores
  - Big box entry associated with fewer proportion of small chain stores (e.g. Tesco Express)
THE EFFECTS OF PLANNING REGULATION ON INDEPENDENT RETAILERS

- Data
- Econometrics
- Results
- Conclusion
THE UNIT OF OBSERVATION IS A LOCAL AUTHORITY

- Planning policy is implemented at the Local Authority (LA) level
- Key assumption is that LAs function as independent retail markets
- London and LAs with more than 400,000 people excluded
- 305 LAs, average population of 130,000 people (9.5 ph)
MAIN SOURCES OF INFORMATION

• Independent stores’ employment
  – Population of stand alone retail stores active in grocery sector (SIC3 521)
  – Store level info derived from ONS retail files, aggregated up to LA level (employment, location, affiliation to other firms)
  – Yearly data for 1998-2004

• Implementation of Planning Policy
  – Proxy (inverse) of planning restrictions with number of planning grants
  – Costly applications (£70,000) imply one to one relationship between grants and actual stores
  – LA level information on planning grants for major retail developments provided by the ODPM
  – Yearly data for 1993-2003
## SUMMARY STATISTICS
1998-2004, 305 English Local Authorities

### Retail (SIC 521)

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Independent</th>
<th>Chains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment</td>
<td>2,726</td>
<td>274</td>
<td>2,452</td>
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<tr>
<td>Number of Stores</td>
<td>121</td>
<td>77</td>
<td>44</td>
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<tr>
<td>Employment Growth</td>
<td>0.03</td>
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<td>0.04</td>
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### Planning Policy

<table>
<thead>
<tr>
<th>Planning consents for Major Retail Developments</th>
<th>Mean</th>
<th>Median</th>
<th>Sd</th>
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<tr>
<td>Developments</td>
<td>2.6</td>
<td>2</td>
<td>3.2</td>
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</table>
THE EFFECTS OF PLANNING REGULATION ON INDEPENDENT RETAILERS

• Data

• Econometrics

• Results

• Conclusion
ECONOMETRIC MODEL

• Test relationship between implementation of planning restrictions (grants for big boxes) and independent stores’ employment growth

\[ \Delta emp_{j,t} = \theta grants_{j,t-s} + \gamma \Delta X_{j,t} + \Delta \beta_t + \varepsilon_{j,t} \quad j = \text{Local Authority} \]

\[ t = \text{Time} \]

• More on specification
  – First difference transformation nets out fixed LA characteristics
  – Timing assumption reflects construction lag, between 2 and 4 years
  – \( X \) captures other socio-economic variables of relevance (income, population, skills etc)
  – Robustness checks with additional trends and controls, different timing assumptions, etc.
POTENTIAL BIASES IN OLS AND IV APPROACH

- OLS estimates might capture spurious demand effects, not the causal effect of grants (i.e., big-boxes entry) on independents since:

- Instrument planning grants with political composition of Local Authorities following Bertrand and Kramartz, QJE 2002 (data from British Local Elections Database)

- Arguments to support the IV strategy
  - Planning process typically precedes actual entry by 2/3 years (election results unlikely to be driven by political business cycles)
  - Local politicians effectively manage planning process for large retail developments (Barker Review, 2006), but no other substantial competencies
  - Planning agenda varies across parties, Conservative majorities (absolute and relative) associated with fewer planning grants
## POLITICAL POWER AND PLANNING GRANTS

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>(1)</th>
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<th>(4)</th>
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<tbody>
<tr>
<td><strong>Abs Maj Con</strong></td>
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<td></td>
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<tr>
<td>Dummy Conservative Absolute Majority</td>
<td>-0.7200***</td>
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<td></td>
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<td></td>
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<td></td>
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<tr>
<td></td>
<td>(0.1854)</td>
<td></td>
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<td></td>
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<tr>
<td><strong>Rel Maj Con</strong></td>
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<tr>
<td>Dummy Conservative Relative Majority</td>
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<td>(0.1924)</td>
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<td><strong>Sha_CON</strong></td>
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<td>-2.0683***</td>
<td>-1.5528***</td>
<td>-1.1353***</td>
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<td>(0.5225)</td>
<td>(0.4201)</td>
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<td>Share of seats won by Liberal Democrats</td>
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<td>no</td>
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<td>Local Authority F.E.</td>
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<td>no</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
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<td>Omitted group</td>
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<td>Other absolute</td>
<td>All other parties’</td>
<td>All other parties’</td>
<td>All other parties’</td>
<td>All other parties’</td>
<td>Labour party’s</td>
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<td></td>
<td>maj and no</td>
<td>relative</td>
<td>shares</td>
<td>shares</td>
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<td></td>
<td>absolute</td>
<td>majorities</td>
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THE EFFECTS OF PLANNING REGULATION ON INDEPENDENT RETAILERS

- Data
- Econometrics
- Results
- Conclusion
## MAIN RESULTS

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>(1)</th>
<th>(2)</th>
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<th>(4)</th>
<th>(5)</th>
<th>(6)</th>
<th>(7)</th>
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<tbody>
<tr>
<td><strong>Grants_{t-2}</strong></td>
<td>-</td>
<td>-</td>
<td>0.0019***</td>
<td>0.0019***</td>
<td>0.0012**</td>
<td>0.0015**</td>
<td>0.0037*</td>
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<td>Planning grants in t-2</td>
<td>-</td>
<td>-</td>
<td>(0.0005)</td>
<td>(0.0006)</td>
<td>(0.0006)</td>
<td>(0.0006)</td>
<td>(0.0021)</td>
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<tr>
<td><strong>Share Con_{t-2}</strong></td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Share of Conservative seats in t-2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>(0.6181)</td>
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<td>1815</td>
<td>1815</td>
<td>1815</td>
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<td>no</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>a</td>
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<td>*<em>Local Authority F.E.<em>year</em></em></td>
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<td>no</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>no</td>
<td>no</td>
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<td><strong>Hausman test (Ho: IV=OLS col 5), pvalue</strong></td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.996</td>
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<td><strong>Kleibergen-Paap rk Wald F statistic (10% Maximal Size Critical Value=16.38)</strong></td>
<td>-</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>19.205</td>
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</table>
HOW BIG IS THE EFFECT? THE DECLINE IN LARGE STORE ENTRY ACCOUNTS FOR 13% OF INDEPENDENTS CONTRACTION

Use estimated coefficients to calculate implied employment growth effects of restrictive regulatory change in 1996.

<table>
<thead>
<tr>
<th></th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indep Stores Employment Growth per additional big-box</td>
<td>0.01%</td>
</tr>
<tr>
<td>Average reduction in big-boxes entry (Number of Stores)</td>
<td>-0.61</td>
</tr>
<tr>
<td>Implied decline in Indep Stores</td>
<td>-0.01%</td>
</tr>
<tr>
<td>Actual decline in Indep Stores 1998-2004</td>
<td>-4.46%</td>
</tr>
<tr>
<td>Contribution</td>
<td>0.13%</td>
</tr>
</tbody>
</table>

Post reform decline in large store entry accounts for ~13% of independents contraction
WHAT DRIVES THE POSITIVE EFFECT OF BIG BOXES?

• Empirical findings are consistent with idea that big boxes substitute for more competitive stores (small chain stores)

• Some supporting evidence:

  1. Positive effect of big boxes is stronger in later period (2000-2004), when small chined stores start to appear

  2. Share of small chain stores negatively related with planning grants
DEFINITION OF A SMALL CHAIN STORE

- Chain stores defined according to two criteria:
  - Firm size: Below/above 10,000 employees)
  - Store size: Below above median store employment (11 employees for small chains, 27 for large chains))

<table>
<thead>
<tr>
<th>Type of Chain</th>
<th>Type of Stores</th>
<th>Number of Stores</th>
<th>Total Employment</th>
<th>Average Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Chains</td>
<td>Below median</td>
<td>4,543.59</td>
<td>27,135.34</td>
<td>5.97</td>
</tr>
<tr>
<td>(&lt;10,000 emp)</td>
<td>Above median</td>
<td>4,653.08</td>
<td>139,012.90</td>
<td>29.88</td>
</tr>
<tr>
<td>Large Chains</td>
<td>Below median</td>
<td>5,106.14</td>
<td>73,652.59</td>
<td>14.42</td>
</tr>
<tr>
<td>(&gt;=10,000 emp)</td>
<td>Above median</td>
<td>5,115.97</td>
<td>679,953.10</td>
<td>132.91</td>
</tr>
</tbody>
</table>
## PLANNING GRANTS AND SMALL CHAIN STORES

<table>
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<th>Estimation method IV</th>
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<th>(3)</th>
<th>(4)</th>
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<tr>
<td></td>
<td>Above Median</td>
<td>Below Median</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Store Type</td>
<td>Small</td>
<td>Large</td>
<td>Small</td>
<td>Large</td>
</tr>
<tr>
<td>Chain Type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dependent Variable</td>
<td></td>
<td></td>
<td>$\Delta_{emp_t}$</td>
<td></td>
</tr>
<tr>
<td>Grants$_{t-2}$</td>
<td>0.026**</td>
<td>0.012*</td>
<td>-0.011</td>
<td>-0.024**</td>
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<tr>
<td>Planning grants in t-2</td>
<td>(0.012)</td>
<td>(0.007)</td>
<td>(0.010)</td>
<td>(0.010)</td>
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<tr>
<td>Observations</td>
<td>1792</td>
<td>1815</td>
<td>1758</td>
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</table>
THE EFFECTS OF PLANNING REGULATION ON INDEPENDENT RETAILERS

- Data
- Econometrics
- Results
- Conclusion
SUMMARY

Methodology
Estimated effects of planning regulation on independent retailers using:
- New micro data sources on population of UK retail store
- IV approach based on political composition of planning bodies to instrument entry of large stores

Results
- Planning regulation does not seem to protect independent retailers, significant and positive effects of large store entry on independent retailers
- Result rationalized with substitution between big-boxes and small chain stores

Next steps
- Extension to other retail sectors
- Look into discontinuity in election results
BACK UP
WHAT IS PLANNING REGULATION?

This research provides micro econometric insights on the effects of planning regulation on the UK retail sector.

Studying the role of planning in the UK is important given policy interest:
- Planning blamed for disappointing productivity performance of the sector (McKinsey, 1998)
- Demand for planning reforms from diverse interest groups
- Sector under scrutiny by UK policy makers (Competition Commission, Barker Review) and planning one of the major issues analysed

Studying the role of planning econometrically in the UK is feasible given institutional design:
- Planning policy has changed over time
- Implementation of entry policy varies cross sectionally across the UK, within well specified geographical boundaries (local authorities)
INDEPENDENTS

– N identical, small and central retailers (independents) in a standard horizontal product differentiation model (Salop, 1979).

– Independents’ equilibrium profits ($\pi$) are directly proportional to transport costs ($t$) and inversely related to the number of firms in the market ($n$)

$$\pi = \frac{t}{n}$$

– Transport costs are endogenous and a function of:
  • Total number of stores opened by a single retail chain (proportional to chains’ total land acquisitions, $L$)
  • The average TFP and proximity of chained stores, function of the store-mix chosen by the chain (see over)
THE RETAIL CHAIN

- The chain produces a single retail output in perfect competition using two perfectly substitutable technologies:
  - Big-boxes: peripheral, high TFP
  - Small stores: central, low TFP

- Both technologies use a single input, land. The chain maximises profits choosing:
  - How much land to acquire
  - How to allocate land across two technologies (store-mix)

- Changing the store-mix has implications on the chain:
  - Average TFP
  - Proximity to central areas
MODEL IMPLICATIONS

1. For a given amount of land acquired by the chain, a reduction in the share of land allocated to big-boxes has an ambiguous effect on independents’ profits
   • BB ↓ => Chain TFP ↓ => t ↑ => π ↑
   • BB ↓ => Chain proximity ↑ => t ↓ => π ↓

2. Given 1), the introduction of a restrictive planning policy – modeled as an exogenous increase in land price – has an ambiguous effect on independents’ profits.
   An increase in land prices will be followed by:
   ▪ A decrease in total land acquisitions made by the chain, which helps independents
   ▪ A decrease in the share of land allocated to big boxes, which has an ambiguous effect on independents (low TFP, higher proximity)
MAIN SOURCES OF INFORMATION

Independent stores’ employment
– Population of stand alone retail stores active in grocery sector (SIC3 521)
– Store level info derived from ONS retail files, aggregated up to LA level (employment, location, affiliation to other firms)
– Yearly data for 1998-2004

Planning Permissions for Big-Boxes
– Information on big-boxes grants (necessary and costly prerequisite for big-box entry)
– Provided by the ODPM at the LA level
– Yearly data for 1993-2003

Political Composition of LA Councils
– Local politicians deciding on majority of planning grants for large retail developments
– Candidate level data on English local elections from the British local elections database (BLED), aggregated up to the Local Authority level
– Yearly data for 1993-2003 (potentially back to 1900)
OTHER DETAILS ON ECONOMETRICS

• Instrument big-box entry with share of Conservative seats in Local Authority

• 1827 observations (306 Local Authorities over 6 changes 1998-2004)

• Standard errors clustered at the Local Authority level

• Basic spec includes as additional controls growth in retail chains employment, year dummies, urban/rural characteristics, population growth

• Population weighted regressions

• Explore margins of adjustment (entry, exit, incumbents) using Davis and Haltiwanger (1992) method
Decompose growth rate into entry, exit and incumbents component using the Davis Haltiwanger (1992) method.

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<tr>
<td><strong>Dep variable</strong></td>
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<td>ΔEmp</td>
<td>ΔEmp</td>
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<td>Basic</td>
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<tr>
<td><strong>Growth component</strong></td>
<td>All</td>
<td>Entry</td>
<td>Exit</td>
<td>INC+</td>
<td>INC-</td>
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<td><strong>BB_Entry (t-2)</strong></td>
<td>0.0100*</td>
<td>-0.0032</td>
<td>-0.0131**</td>
<td>-0.0011</td>
<td>-0.0013*</td>
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<td><strong>N</strong></td>
<td>1827</td>
<td>1827</td>
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</table>

Basic controls include year dummies, population growth, growth of retail chain employment, and the share of urban land in the local authority. All regressions are weighted by the log of population. The instruments in the IV regressions is the share of conservative seats in t-2 (always negative and significant at the 1% level). Stock and Yogo threshold=16.38. Cragg Donald Statistic=57.931.