On “Colocation and Knowledge Diffusion: Evidence from Million Dollar Plants” by Fons-Rosen, Scrutinio, Szemerediti

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Greenstone and Moretti (2004), Greenstone, Hornbeck and Moretti (2010)

“Five years after the new plant opening, the productivity of incumbent plants in winning counties is 12% higher compared to the productivity of plants in losing counties.”
Multimillion Dollar Plants

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knowledge flow?

- Knowledge diffuses across local plants (inventors) where the MDP firm enters.
- Local plants (inventors) may be able to assimilate knowledge from the MDP firm through observation, imitation and interaction.
Local firms in the winning county

Local firms in the losing county

The MDP enters into the winning county
Local firms in the winning county

Citations increase

Existing patents of the MDP

The MDP enters into the winning county

Local firms in the losing county

Local firms in the losing county
Local firms in the winning county

Local firms in the losing county

Existing patents of the MDP

Citations increase

Observation, imitation or interaction?
1: Identification

Rely on the reported location rankings (à la Greenstone and Moretti, 2004; Greenstone et al., 2010)

- treated county *(winner)*: the MDP ultimately chose to enter.
- control counties *(losers)*: the MDP considered but did not end up locating.

⇒ The authors provide much supporting evidence (pre-existing trends etc).
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Other research design (more random?):

- Inoue, Nakajima, Saito (2017): partial opening of high-speed rail
2: Channel

A key contribution in our paper is to address a channel by which local firms can benefit from the entry of large corporations into their counties. (page 1)

- For each MDP firms:
  - Stock of patents
  - How many citations they received
  - The location of the inventors citing the MDP firms stock of patents
- Citations to pre-existing patents of MDP firms received from local plants (inventors).
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⇒ Is this through observation, imitation or interaction?

⇒ Is this a driver in increasing productivity of local incumbent plants?
3: Outcome

- “Most patents are the result of collaborative work and produced by teams of heterogeneous sizes” (Akcigit et al. 2018)

- Collaborative patents: 51% among Japanese patent holding firms and 18% among U.S. patent holding firms (Inoue et al. 2017)
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- It can show the importance of geographical proximity in enhancing knowledge spillovers.
Nice data with immediate policy relevance

Two components of the paper are:

1. Identification using the revealed location ranking of MDP
2. (relative) increases in citations to MDP’s patents by local firms in the winning county
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Nice data of firms/plants, inventors, patents and citations with geo. information

- merge with micro-level performance data?
- want to see a channel: “knowledge flow $\Rightarrow$ productivity improvement”