Discussion of “Estimating Geographic Frictions on Interfirm Transactions”, by Kentaro Nakajima

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Summary

• “What drives agglomeration?”
  – Role of distance in choosing transaction partners?

• A structural model of many-to-many matching using transaction network data from Japanese manufacturing
  – Revealed preference approach

• Findings:
  – Distance negatively affect revenues
  – Magnitude seems larger for upstream firms
  – Magnitude varies across industries

• Contributions: to quantify benefits of shorter distance on choice of transaction partners relative to other factors

• Preliminary, but ambitious and promising
Revealed Preference Approach

- Matching games: a new area for theoretical and empirical IO
  - Cooperative behavior
  - Two-sided markets: Marriage, bank mergers, sellers and buyers, ..

- Two aspects of Fox (2010):
  
  (1) Structural estimation
  - To uncover model primitives in revenue function (in this case, preference of firms with whom to conduct transaction)
  - Assumption: Data we observe are generated by equilibrium of matching game
  - Issue: “curse of dimensionality”
    - (# of assignments of 1-to-1 matching of 100 upstream firms to 100 downstream firms) > (# of atoms in universe)

  (2) Revealed preference approach
  - Infer parameters by imposing restrictions “You cannot increase payoff by changing the link”
  - Lighter computational burden
Comment 1: Distance Parameters

- Remember normalization: every parameter is relative to ln (Degree) for a downstream firm
  - ln(degree): Average number of transaction partners of upstream firms, proxy for how sound your transaction partners are financially
- Increasing number of transaction partners always increases the payoff?
  - +: may avoid hold up
  - -: may reduce benefits from returns to scale/scope
  - -: may increase the costs of negotiation

- Suggestion (1): try other variables for normalization, which are less controversial to sign reversal, such as credit ratings?
- Suggestion (2): look at more closely at a particular industry, rather than looking at whole manufacturing sector?
Comment 1: Distance Parameters (cont’d)

• Magnitudes vary wildly across industries
  – Are we picking up differences comparable across industries?
  – How ln (Degree) impact the revenue can be different across industries? E.g., cement or concrete industries

• Suggestion (1): Adjust the cross-industry differences by measuring the deviation from the industry mean?
• Suggestion (2): Adjust the Ellison Grazer index to incorporate the across-industry differences?
Comment 3: Policy Implications?

- The trade-off of exogenously creating a “cluster”
Other Comments

• Downstream distance parameters vary wildly
  – Hypothesis testing on restriction?

• Some coefficients are imprecisely estimated
  – Increasing # of inequalities helps?

• Direction of causality