Comments on "Matching and Agglomeration: Theory and Evidence from Japanese Firm-to-Firm Trade" by Yuhei Miyauchi

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Summary

- This paper argues that firm-to-firm matching rate increases with the number of suppliers, increasing returns to scale in matching.
- Using a unique dataset on Japanese firm-to-firm trade, rematching after unanticipated supplier bankruptcies is faster for firms located in denser areas.
- Structural firm-to-firm matching model is constructed to quantify the importance of the mechanism.
- The mechanism explains around one third of agglomeration benefit of labor productivity.

Method (Reduced-Form Estimation)

$$Y_{igt} = \sum_s \beta^s 1_s * Treatment_i + FE_{gt} + FE_{ig} + \epsilon_{igt}$$
$$Y_{igt} = \sum_s (\beta^s + \gamma^s Density_g) 1_s * Treatment_i + FE_{gt} + FE_{ig} + \epsilon_{igt}$$

- Data: Tokyo Shoko Research, 2007-2016
- Y_{igt}: Number of new suppliers reported by firm i
- $Treatment_i$: Unanticipated supplier bankruptcy dummy (natural experiment)
- $Density_g$: Log of density of suppliers in the same industry and buyer's location as former suppliers
- IV: Supplier density of CEO's birthplace

Results

- Firms facing unanticipated supplier bankruptcies slowly recover alternative suppliers.
- Those firms are more like to exit from the market.
- Newly matched suppliers are more likely to be operating at the same industry and location as former suppliers.
- Rematching is faster for firms located in denser areas.
- Crowding out is not observed.

Structural Estimation

- Melitz model with firm-to-firm matching
- IRS in matching: Firm-to-firm matching rate increases with the density of input sellers
- Calibration: matching rate elasticity and gain from matching
- Counterfactual analysis: CRS matching
  - Labor productivity reduces by one third.
  - Welfare from Hokkaido-Shinkansen: 12% of additional gain

Comment 1 (Overall)

- *Excellent paper*
- Important topic
- Unique dataset
- Interesting setting for identification
- Elegant extension of Melitz model
- Meaningful simulation

Comment 2 (Reduced-Form Estimation)

- Common effects of earthquake
  - Buyers and other suppliers are also damaged.

- Number of newly matched suppliers as dependent variable
  - Dummy variable seems better to exclude the effects of matching with multiple suppliers.
  - Nonlinear estimation

- Validity of instrument
  - Relationship between densities of supplier location and CEO's birthplace are not clear.
  - Heterogeneous ability to deal with unanticipated shocks

Comment 3 (Structural Estimation)

- Location change
  - Firms with high productivity are likely to relocate to denser cities.
- Assortative matching
  - Firms with high productivity tend to match with each other.
- Simulation
  - Size of Tokyo under CRS in matching

Comment 4 (Minor points)

- Many papers are listed in the section of literature review.
  - It might be better to emphasize the contribution more.
- Partial year effect
  - If unanticipated bankruptcies are concentrated in early period of a year, the difference of matching rate would be larger.
- Heterogeneity of rematching rate across industry pairs
  - Estimates from input-output table can be used.