Discussion of Firm Size and Complementarity between Geography and Products
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Summary of the paper

- Using Japanese retail scanner data, the paper documents empirical patterns that larger firms sell more products in a given market, firms sell more products in larger markets, and larger firms are present in more markets than smaller firms.

- The paper develops and estimates a quantitative model of heterogeneous multi-product firms operating in multiple markets that can explain these empirical patterns.

- The paper studies the welfare effects of a Small and Medium Enterprise (SME) subsidy policy in Japan.

Main contributions to the literature

- The paper develops an analytically tractable general equilibrium model, as well as estimates the model parameters and evaluates model fit, the latter of which wasn't done in the most closely related model of Bernard, Redding, and Schott (2011).

- Relative to existing work, this paper emphasizes that the complementarity between the number of products a firm sells and the number of markets the firm sells in is quantitatively important for the firm size distribution.

Limitation of the model for policy evaluation

- As might be expected (Melitz and Redding 2015, Dhingra and Morrow 2019), the paper shows that its market equilibrium is efficient.

- Since a priori we know any intervention is sub-optimal, the only point of a policy evaluation is a quantitative assessment of how sub-optimal a policy could be.

- Alternatively, I next discuss a couple of ways the model could be changed such that the market equilibrium isn't efficient.

Oligopoly

- Holding all model elements fixed but allowing for oligopolistic competition instead of monopolistic competition breaks the efficiency of market equilibrium.

- Hottman, Redding, and Weinstein (2016) estimate in U.S. scanner data that the largest firms (that account for most of aggregate sales) have variable markups that depart substantially from the monopolistically competitive benchmark, leading to a quantitatively significant departure from an efficient market equilibrium benchmark.

- However, while this mechanism is relevant for understanding other data moments, it would greatly reduce model tractability and wouldn't qualitatively change policy evaluation.
    - Relative to an oligopolistic equilibrium, the planner wants the largest firms to sell more (and thus wouldn't subsidize small firms).

Non-CES demand and/or elastic labor supply

- Holding all model elements fixed but generalizing from Constant Elasticity of Substitution (CES) demand ala Dhingra and Morrow (2019) would mean market is generically inefficient.

  ▶ In this case, it's possible for relatively small firms to be too small (or too big!) in market equilibrium, potentially justifying some sort of subsidy. However, going beyond CES risks intractability.

- Alternatively, relaxing the assumption of inelastic labor supply (all else equal) would mean market outcome is inefficient again, because monopolistic competition markup creates a labor wedge and results in too little output.

  ▶ In this case, the planner wants to raise output with a subsidy (although first-best requires a common subsidy). Still, a small-firm subsidy is likely welfare improving over the market equilibrium.

Limitation of the model for matching data moments

- One moment that the paper doesn't compare between the model and the data is the distribution of product prices, but I expect that the model predicts much larger price variation than in the data.

- Again Hottman, Redding, and Weinstein (2016) find in U.S. data that the within-category differences in prices aren't that large, while the within-category differences in firm sales is substantial.
  - ▶ We find large differences in product appeal/taste/demand across firms that are important for rationalizing the firm size distribution.

- If I understand this paper correctly, taste shifters are assumed to be 1 for a base product for each firm (the product sold in the largest number of prefectures). Within firm differences in sales identifies the taste shifter for other products within the firm.
  - ▶ The paper should identify taste shifters using the relative sales across all products (not just within firms), so that there is meaningful across-firm taste differences.

Contribution of product scope differences to firm size distribution

- The paper conducts an exercise limiting firms to a single product, in order to quantify the contribution of product scope differences to the firm size distribution.
    - As with what we discussed on previous slide, in the single product case firms are assumed to all have taste shifters of 1 (so firms are symmetric in terms of taste).

- If the model is extended to the case with suitable differences in taste shifters across firms, then in this single-product exercise I would suggest calibrating each firm's taste shifter to be an appropriately weighted average of it's multi-product taste shifters.
    - In this case, the exercise would be holding fixed taste differences across firms but isolating the effect of multiple vs single products.

Conclusion

- This paper has great data, an analytical tractable model, and is asking important questions about how the model can rationalize the data.

- I look forward to reading a future version of this very nice paper.