Discussion on "Productivity As If Space Mattered: An Application to Factor Markets Across China" by Wenya Chen, John Morrow, and Kitjawat Tacharoen

Kang Shi

Dept. of Economics, CUHK

January 16, 2014

What does this paper do?

- This paper investigates the importance of local supply characteristics in determining firm input usage and productivity.
- To do so, the authors develops both theory and empirical method to identify firm input demand across and industries and heterogenous labor markets.
- The paper estimates and quantifies the role of distinct regional labor markets in firm input use, productivity and location using Chinese firm and population data, and finds that varying labor cost by 30-80% can lead to 3-17% differences in TFP once non-labor inputs are considered.

Model (1)

- The model approach is rooted in the general equilibrium trade literature.
- The model is based on Bernard, Redding, and Schott (2007), but with entry across regional markets and rich employment structure.

Model (2)

- Each region is endowed with a different distribution of skill types and wage across workers.
- Firms produce by combing homogenous inputs(materials, capital) and differentiated inputs(types of labor).
- Firms hire teams of workers by choosing the optimal combination of workers given local conditions.
- Therefore firm hiring depends on the joint distribution of worker types and wage.
- Effective labor costs vary by region and industry, which can help explain differences in productivity.

Estimation strategy

- The first step exploits differences in firm hiring patterns across distinct regional factor markets to recover firm labor demand by type.
- The second step uses the first stage to introduce local labor costs into production estimation.

1. Contribution

- This paper combines firm and population census data to explicitly model regional difference, leading to micro founded identification and estimates.
- The method use is novel, and the quantitative results of this paper highlight how the firms are affected by the local market conditions.
- This paper also clearly contributes to the empirical literature on Chinese productivity since it uncovers local factors that determines productivity.
- But, the relationship of this paper with other work in the literature is not very clear! More discussions are needed.
- Otherwise, the contribution of this paper to Chinese economy will be understated.

2. How robust is the key assumption?

- The key assumption is that the distribution of labor endowment is taken as exogenously given.
- Although there exists Hukou system in China, the labor mobility is substantially improved during recent decades. We observed (a) large migration from village to city; (b) changes of Hukou due to college education; (c) migration among big cities due to job changes.
- If some degrees of labor mobility are considered, how will the results in the paper be affected?

3. Local conditions vs labor endowment

- Firms' location decisions depend on local conditions, this makes sense. However, in the real world, the local conditions not only include labor market but also include other facts, such as government policies, financial conditions, and other resources.
- In particular, different regions may be subject to different credit constraint, so capital might be not homogenous either.
- Thus, the explaining power of heterogenous labor endowment might be exaggerated.

4.Limited factor price equalization

- Proposition 3 in the model show that while the model allows for heterogeneity of wages by worker type, general equilibrium forces still imply that factor price equalization holds on average, that is, average wages are equalized across regions.
- In the data, do we have limited factor price equalization after control income and others?

5. Hiring and labor market

- Will be the results sensitive to how the firms hire workers?
- Does unemployment matter? since in the model all the labor markets clear and all workers are hired.

(6) Policy implication

- This paper shows that policy changes which influence the distribution of regional labor markets will have sizeable effects on firm behavior, productivity, and location.
- Can the paper present quantitative examples such as, how do the regional TFP or economic growth rate respond to an exogenous change in the distribution of labor?