

New Idea: Technology Selection of Firms

Mitchell Valdes-Bobes

2023-10-06

Technology Selection of Firms

In the end, my objective is to utilize my model to elucidate the impact of firms' technology selection choices and workers' mobility decisions on the geographical distribution of economic activity.

I intend to introduce the firms' technology selection decisions as follows:

- Firms exhibit variations in their productivity levels.
- These firms assess their productivity and make decisions in each city regarding whether to adopt high or low technology.
- The two technologies diverge in their characteristics, as high technology relies on the significance of agglomeration economies, whereas low technology does not.

To keep it simple and consistent with my ideas in the main documents I am thinking of the following characterization of the output of a match between a type x worker and a type y firm in city j (with skill distribution ℓ^j) that uses technology τ :

$$f^j(x, y|\tau) = \begin{cases} x^{\alpha_L} y^{1-\alpha_L} & \text{if } \tau = L \\ \Omega(x, \ell^j)^{\alpha_H} y^{1-\alpha_H} & \text{if } \tau = H \end{cases} \quad (1)$$

where $\Omega(x, \ell^j)$ is the modified productivity of type x worker accounting for the value of idea exchange in location j . All assumptions regarding $\Omega(x, \ell^j)$ remain the same as in the main document.