Knowledge Sharing within Firms across Space

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Abstract

Place-based policies are often rationalized with the existence of Marshallian agglomeration economies that raise the productivity of local workers and businesses. This paper provides reduced-form and model-based evidence that the productivity gains from these local externalities may spread throughout the rest of the economy through the plant-level networks of multi-region firms. Using confidential Census plant-level data, we show how the openings of large manufacturing plants not only increase the productivity of local incumbent plants but also of distant plants many hundred miles away which are part of large multi-region firms that are “exposed” to the local externalities through one of their plants. We argue that the evidence is consistent with knowledge sharing between plants of multi-region firms. Once the knowledge spills over to the firm’s local plant, it can be passed on to other plants inside the firm’s boundaries, raising the productivity of local and distant plants alike. Consistent with this idea, we find that the productivity spillover does not decay with geographical distance and is stronger between plants in industries characterized by mutual R&D flows or patent citations. To assess the importance of knowledge sharing within multi-region firms, we develop and estimate a quantitative spatial general equilibrium model with costly goods trade and labor mobility in which plants of the same firm are linked through shared knowledge. Counterfactual exercises show that while knowledge sharing between plants reduces disparities among regions affiliated with plant-level networks, it increases overall regional inequality in the economy.

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