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Knowledge sharing within firms across space

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Abstract:

We study how local knowledge spills over to distant regions through the spatial networks of multi-region firms. Using confidential plant-level data from the U.S. Census Bureau, we show how the opening of large manufacturing plants not only raises the productivity of incumbent plants ("local spillover") but also of geographically distant plants belonging to multi-region firms ("global spillover"). While the local spillover decays rapidly with geographic distance, the global spillover does not, suggesting that knowledge, once acquired by the firm, can be used freely within. To quantify the significance of multi-region firms for the diffusion of knowledge across regions, we develop and estimate a quantitative spatial model with costly goods trade and labor mobility in which regions are populated with local firms and multi-region firms. A key feature of multi-region firms in our model is that their plants' production technologies are linked through shared knowledge. We apply our model to quantify the distributional implications of improvements in within-firm knowledge sharing as well as the general equilibrium implications of regional place-based policies.