Automation, Spatial Wage Inequality, and Place-Based Policy

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Abstract

I study how automation affects spatial wage inequality. Spatial wage inequality, or wage differences across places, is a pressing issue for policymakers who aim to promote economic development in lagging places through place-based policies. First, I show a novel fact: since 1980, spatial wage inequality in the US has increased for non-routine occupations while it has decreased for routine occupations. Since non-routine occupations are at the extremes of the skill distribution, existing models that feature skill groups cannot explain this fact. In my model, automation increases spatial wage inequality for non-routine occupations and decreases it for routine occupations through three forces: spatial differences in total factor productivity; the supply of machines being more elastic than that of labor; and machines substituting for routine occupations while complementing non-routine occupations. According to my quantitative spatial model, automation alone explains about 30 percent of the observed changes in spatial wage inequality. Finally, my model implies that place-based policies entail a trade-off between wage differences across places and wage differences within places. By raising total factor productivity in lagging places, place-based policies reduce wage differences across places. However, while place-based policies raise wages for all occupations in treated places, wages for non-routine occupations increase more, thus affecting wage differences within places.

Keywords: automation, spatial wage inequality, occupation, place-based policy, spatial sorting

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