Spillover effects of metro academic R&D on non-metro labor market conditions

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Abstract

Research regarding spillover effects of academic innovation tends to focus on the effects innovation from metro areas on metro area labor markets. Little attention has been given to the effects of metro area innovation on non-metro economic conditions. This research estimates the spillover effects of innovative activities coming from universities in metros of a state on economic conditions in non-metro areas in the same state. Innovation is measured through real aggregate R&D spending by metro area universities in state \( x \) per person living in non-metro areas in state \( x \). Labor market conditions in non-metro areas are considered for individuals who live in a non-metro area; thus, these individuals may be tied to a metro area economy through work. The labor market conditions for these individuals are measured through employment status, the log of real weekly wages, and college enrollment status. We find that the relationship between metro university innovation and log weekly wages and enrollment to be positive and significant. We find negative effects of metro innovation in non metro areas. The results suggest that innovation in big cities generates migration to metros from non metros, thereby reducing available labor supply. As a result metro innovation reduces non metro employment but increase earning for people who reside in non metros. We have evidence that higher innovation in metros increase human capital in non metro areas.