Dense Enough To Be Brilliant: Patents, Urbanization, and Transportation in Nineteenth Century America

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Abstract
This paper examines the geographic distribution of patenting in the nineteenth century United States as it evolves in response to transportation improvements. I find a robust, statistically significant, and positive effect of increases in local transportation access on patenting. Over the twenty years following the arrival of the railroad in a county, the number of patents per capita doubles. I explore two possible mechanisms behind this increase: a) inventors responded to larger markets afforded by transportation improvements; or b) transportation improved information flows making investors more productive. I find little evidence that patenting responded positively to increased market access per se, but that local access still matters. Using digitized texts of patents, I measure whether any given patent mentions a previous, novel technology within a particular time frame. I find little evidence that the speed of arrival of these new ideas is related to transportation improvements. These results suggest that access to local transportation lowers the effective cost of patenting by forming a nexus around which local agglomerations occur.

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