



FACULTY & RESEARCH

Article | Journal of Urban Economics | January 2010

Breakthrough Inventions and Migrating Clusters of Innovation

by [William R. Kerr](#)

Abstract

We investigate the speed at which clusters of invention for a technology migrate spatially following breakthrough inventions. We identify breakthrough inventions as the top one percent of U.S. inventions for a technology during 1975-1984 in terms of subsequent citations. Patenting growth is significantly higher in cities and technologies where breakthrough inventions occur after 1984 relative to peer locations that do not experience breakthrough inventions. This growth differential in turn depends on the mobility of the technology's labor force, which we model through the extent that technologies depend upon immigrant scientists and engineers. Spatial adjustments are faster for technologies that depend heavily on immigrant inventors. The results qualitatively confirm the mechanism of industry migration proposed in models like Duranton (2007).

Keywords: [History](#); [Technological Innovation](#); [Patents](#); [Labor](#); [Immigration](#); [United States](#);

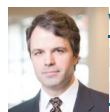
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Citation:

Kerr, William R. "[Breakthrough Inventions and Migrating Clusters of Innovation](#)." *Journal of Urban Economics* 67, no. 1 (January 2010): 46–60.

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