

The effect of inventor mobility on inventor productivity

MCI Course Term Paper

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Outline

Introduction

Theory

Data and Method

Prior Literature

Variation in the mobility of inventors across regions

- ▶ Almeida and Kogut (1999) suggested that interfirm mobility of engineers influences the local transfer of knowledge.
- ▶ Ge et al. (2016) interpret the higher levels of mobility in silicon valley as the outcome of targeted retention of human capital.
- ▶ Unanswered is if the variation in inventor mobility can also explain the variation in complexity of future inventions.

Research Question

- ▶ What is the relationship between the movement of some inventors into or out of a region and the average productivity of inventions from those inventors?

Relevance of Answering the Research Question

- ▶ Received wisdom earlier was that firms would have a greater incentive to keep highly dependent technology developed in weaker IPR countries secret (Cohen et al., 2000).
- ▶ However Zhao (2006) has argued that multinational enterprises may benefit from conducting R&D in countries with weak IPR protection by making up for the weaker IPR protection through better internal organization.
- ▶ The anecdotal increase in the mobility of employees at the weak IPR subsidiaries raises a potential paradox.
- ▶ If increased mobility of employees influences transfer of knowledge (Almeida and Kogut, 1999), should we expect higher complex inventions from inventors in those teams into which other inventors have moved in?
- ▶ The answer to this question is not completely explained by theory

Managerial and Policy Implications

- ▶ The innovation policy of emerging countries is influenced with the expectation that the presence of multinational R&D will create value adding spillover effects.
- ▶ Complexity of innovation provides a richer proxy for value adding innovation, and effects of inventor mobility may inform innovation policy
- ▶ Current work may inform managerial decisions about how to organize R&D teams around the world

Hypotheses

- ▶ H1: An increase in the average mobility of inventors in a region increases the average complexity of innovation generated
- ▶ H2: The effect in H1 is moderated positively by the relative strength of the intellectual property rights regime of the region

Methodology

- ▶ Data Source: Patents from USPTO, source: patentsview.org
- ▶ Unit of Analysis: Inventor-Year
- ▶ Dependent Variable: Complexity of innovation
- ▶ Primary Explanatory Variable: Mobility of innovators (Between-Region Mobility, Between-Country Mobility)
- ▶ Moderating Variable: IPR Score
- ▶ Control Variables: Technology classes, Firm effects, Year effects

Results

Potential Issues

- ▶ Direction of Causality
- ▶ Underestimation bias of mobility - effects
- ▶ Mechanism by which mobility affects complexity - other explanations
- ▶ Alternative measures of complexity

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