Knowledge spillovers in Germany:

A spatial input-output weighted estimation strategy

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Motivation & Approach

- Widespread presumption that knowledge leads to spillovers (pos. external effects). $\rightarrow$ This implies scope for political action in fostering innovative activity. Understanding how exactly these spillover work can help policy makers to design intervention schemes.

- We analyze one specific spillover channel: procurement relationships (intermediate goods trade between firms).

- Data on firm-specific patent stocks from *Patstat* is merged with the *Amadeus* firm-level database.

- Exploiting the techniques of spatial econometrics allows us to estimate coefficients indicating the magnitude of spillovers and test them for significance.

Drawbacks

- The match of *Patstat* data with *Amadeus* data is only feasible for German firms and Amadeus data quality for German firms is far from optimal. Moreover, it is clear that German firms buy a significant amount of their input from abroad and also deliver to other countries, a fact we cannot account for.

- Currently, we only have information on the firms' *stocks* of patents; more interesting might be the flow of new patents in one period. We are working to get this information.

Literature

- To my knowledge there is no other paper using firm-level patent data and spatial econometrics to analyze spillovers related with intermediate goods usage.

- Studies using spatial econometrics usually focus on geographical space (e.g. Das and Finne 2008).

- Studies on intermediate goods spillovers on firm level usually do not use spatial econometrics; Moreover, they often consider spillovers of buying from MNEs (e.g. Smarzynska Javorcik 2004).

- Our paper is most closely related to Egger and Badinger (2010), who use input-output data as spatial weighting matrix, but focus on TFP at a sectoral level.