Globalised Migration System
A dynamic-spatial analysis of Swiss immigration

Traditional economic literature assumes each migratory flow to be independent from another.

Empirically, such strong assumption hardly holds and I try to explain interdependencies between different flows via Tobler First Law of Geography.*

The aim is not to uncover casual links between the outcomes at different locations, but to disclose regional connections which can help the understanding of more complicated geographical dynamics.

Dynamic-Spatial Equilibrium

\[ y_{it} = \gamma' \sum_{k=1}^{K} y_{it-k} + \beta' X_{it} + \delta' U_{it} + \lambda \sum_{j=1}^{N} w_{ij} y_{jt} + \]

\[ + \varrho \sum_{j=1}^{K} \sum_{k=1}^{K} w_{ij} y_{jt-k} + \varepsilon_{it} \]

\[ \varepsilon_{it} = \alpha_{i} + \rho \sum_{j=1}^{N} w_{ij} \varepsilon_{jt} + \varepsilon_{it}, \quad \varepsilon_{it} \sim iid(0, \sigma^2) \]

Taking the neighbouring countries into account?

-Yes-

-Non-

Performance

Conventional Dynamic Models:
\( \varrho = 0; \lambda = 0; \rho = 0 \)

Spatial Dynamic Models:
• Spatial Lag (SAR) \( \rightarrow \varrho = 0; \rho = 0 \)
• Spatial Error (SEM) \( \rightarrow \varrho = 0; \lambda = 0 \)
• Spatial Dynamic Lag (SAR(3)) \( \rightarrow \rho = 0 \)

"Everything is related to everything else, but near things are more related than distant things."

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