

HOUSING MARKET AND MIGRATION REVISITED

A BAYESIAN MULTILEVEL GRAVITY MODEL FOR DUTCH MUNICIPALITIES

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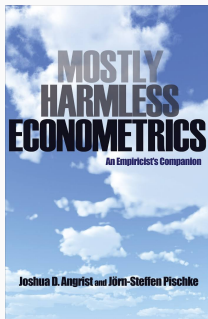
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Background: two different cultures (following Breiman, 2001)

In economics:

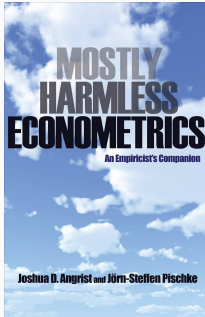
- causal impact of x on y
- Average treatment effect



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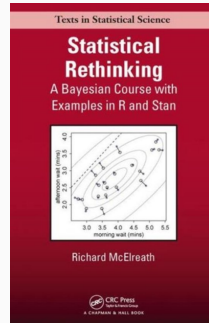
In economics:

- causal impact of x on y
- Average treatment effect



Outside economics:

- Model performance
- prediction of total effect



- 50–70% of all research questions in spatial economics evolve around policy **evaluation**
 - focus on **consistency**
- Huge demand (e.g., by firms & government) for research dealing with **prediction**
 - focus on model **performance**
- But, more than 90% of all statistical analyses is basic applied econometrics using **linear** models and **fixed** effects

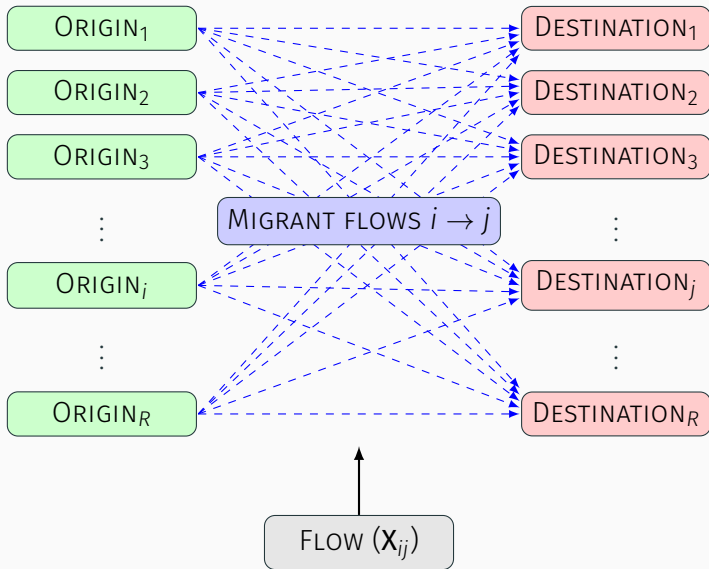
Research question

- Aggregate homeownership has negative impact on labour market performance, because of increased **moving costs** (Oswald, 1996, 1999)
- This paper applies a **gravity model** on the impact of housing market structure (e.g., homeownership and social renting) on within-country migration flows (Congdon, 2010)
- **Aim:** to be able to **predict** all changes in incoming and outgoing migration flows of, e.g., Amsterdam, when housing market structure changes **whilst** accounting for origin and destination specific effects (Ranjan & Tobias, 2007)

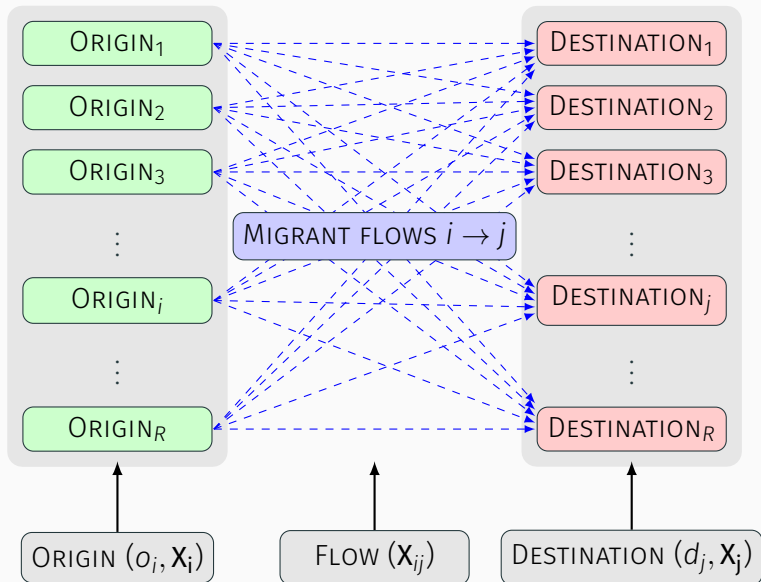
Gravity model data structure



Gravity model data structure



Gravity model data structure



Why a Bayesian multilevel approach?

- Now frequently used in many disciplines (except again in economics)
- **Simultaneous** modeling at various levels (e.g., cities, regions, flows, individuals)
 - No two-stage models anymore
- Many definitions in a Bayesian context:
 - mixed effects
 - varying intercepts/parameter
 - shrinkage
 - partial pooling

Thank you!

Paper, data and code
can be retrieved from the project's GitHub page:
https://github.com/Thdegraaff/migration_gravity.