Discussion of "Commuting Infrastructure in Fragmented Cities" Bordeu (2024)



Luis Pérez

(luisperez@smu.edu)

April 25, 2025

Texas Monetary Conference

Main idea

Road investments in Chile largely made by local governments

(Eg, municipalities in Santiago's MSA are responsible for building and maintaining their roads)



Road investments in Chile largely made by local governments

(Eg, municipalities in Santiago's MSA are responsible for building and maintaining their roads)

- Local gvt objectives \neq regional gvt objectives
 - Local gvt makes investments to \max net local land value
 - Regional gvt makes investments to \max net regional land value

(Gvt revenue depends on land value through property taxes and commercial permits)

- Local gvts understand how their road investments affect spatial distribution of residents and workers in the MSA and, in turn, their own land value
- $\blacktriangleright \quad \text{Decentralized decisions} \neq \text{centralized decisions} \rightarrow \text{spatial misallocation}$

Embed "public goods" problem into quantitative spatial economics model (Tiebout 1956, Ellickson et al 1999 + Ahlfeldt et al 2015, Redding Rossi-Hansberg 2017)

- Individuals choose where to live and work
- Local gvts make investments in roads
- Calibrate model to match moments in Santiago's MSA

Use model to quantify spatial misallocation caused by presence of local gvts

Findings

Decentralized road investments in Santiago's MSA lead to:

1. Substantial underinvestment

- Road investments in Santiago's MSA would be 45–60% higher under regional gvt
- Population and welfare would be approx 1.5–2.5% higher under regional gvt
- 2. Different geographical distribution of investment
 - Underinvestment near municipalities' borders
 - Underinvestment in more central and more productive municipalities
 - Higher commuting costs, more polycentric & less populous MSA, lower welfare

Three points (as an outsider to this literature):

- 1. Further support calibration with arguments, data, or do robustness
- 2. Counterfactuals are subject to the Lucas' critique
- 3. Results hinge on the scope of competition (within vs. between MSAs) and on the layer of government making investments (regional vs. national)

> And offer some suggestions to address these concerns (at least partially)

> Point 1: Further support calibration with arguments, data, or do robustness

- · Some key model parameters taken from studies for cities in other countries
 - Eg, land share in production = 0.2 from Tsivanidis 2019 who studies Bogota
 - Eg, congestion elasticity = 0.06 from Akbar Duranton 2017 who study Bogota
 - Eg, shape parameter of preferences shocks for residence-work pairs = 6.8 from Ahlfeldt et al 2015 who study Berlin

▶ Point 1: Further support calibration with arguments, data, or do robustness

- Some key model parameters taken from studies for cities in other countries (Eg, land share & congestion elasticity for Bogota, preference parameter for Berlin)
- Not clear that these parameters reflect realities of Santiago's MSA
 - Suggestion 1: Argue that these parameters are reasonable
- Parameters could have been estimated for model with different DGP
 - Suggestion 2: Do robustness checks

(Ie, re-do counterfactuals for a bunch of different parametrizations)

- Suggestion 3: Estimate these parameters using Chilean data

- ▶ Point 2: Counterfactuals are subject to the Lucas' critique
 - · Locations' productivities and amenities treated as exogenous in model
 - · Estimated to match observed distribution of residents and employment
 - Fed into counterfactuals that result in different spatial distributions, ...but productivity and amenities depend on equilibrium outcomes!
 - If amenities are thought of as affected by number of residents, this is a problem (Eg, utility from going to beach, mountain, or park decreasing in population density)
 - If productivity is thought of as specific to worker-firm match, this is a problem (Eg, productivity in location partly a function of its firms and workers)
 - Suggestion: Endogenize productivity and amenities as function of pop. density (Eg, as in Ahlfeldt et al 2015, Desmet et al 2018, Tsivanidis 2019, Allen Arkolakis 2022, ...)

- Point 3: Results hinge on the scope of competition (within vs. between MSAs) and on the layer of government making investments (regional vs. national)
 - Model features competition for residents within MSA, *not across* MSAs (Ie, the outside option of living elsewhere is fixed and exogenous)
 - With competition between MSAs and no intl. migration, outside options would be endogeneous and respond to investments in Santiago's MSA
 - People may not be willing to move to-may even want to leave-Santiago's MSA
 - Absence of this competition could lead model to overstate welfare gains since these partly driven by positive net migration (which puts

 pressure on land value)
 - Would national centralization also increase welfare of Santiago's MSA?
 - $\rightarrow\,$ National gvt internalizes externalities across regions and its investments may make Santiago's MSA worse off
 - Suggestion: Address these two points in future research



My take

- Very cool paper taking an important step toward the quantification of spatial misallocation resulting from multiple layers of government
- Main contribution is to embed "public goods" problem into state-of-the-art quantiative spatial model to aid policy design
- **Exercise speaks to recent policies** (Chile 30/30)
 - ightarrow Structural reforms likely going in the wrong direction
- ▶ Would be interesting to see:
 - + Model with endogenous amenities and productivity
 - + Robustness exercises with respect to key borrowed parameters
 - + Analysis w/ three gvt layers (local, regional, national) and competition b/w MSAs

Questions?

Thank You!

(Email: luisperez@smu.edu)
(Website: https://luisperezecon.com)