

Discussion of  
**“Persistence and Path Dependence  
in the Spatial Economy”**  
by Allen and Donaldson

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The views expressed here are those of the authors and do not necessarily represent those of the Federal Reserve Bank of Philadelphia or the Federal Reserve System.

## Motivation & contribution

Theories of cities feature increasing returns, externalities, spillovers, ...

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- A challenge for modeling and policy analysis.

This paper develops a **quantitative, dynamic spatial equilibrium model** that:

- Rationalizes prior evidence of **path dependence** in spatial structure (Bleakley & Lin, ...).
- And is amenable to quantitative analysis (even for “big” policies, e.g, TVA).

## The core modeling feature

Separate **contemporaneous** and **historical** agglomeration spillovers.

$$A_{i,t} = \bar{A}_{i,t} L_{i,t}^{\alpha_1} L_{i,t-1}^{\alpha_2}$$

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If contemporaneous spillovers ( $\alpha_1 + \beta_1$ ) and forward-looking behavior ( $\delta$ ) weak, then dynamic equilibrium path is unique (Prop 1).

At the same time, if historical spillovers ( $\alpha_2 + \beta_2$ ) strong, multiple steady states (Prop 3).

→ History can matter, even in the long run.

## Answers and questions

A very important contribution.

Neat (elegant, novel) answer that accomodates theory, evidence on path dependence in quantitative analysis .

Open questions.

What about self-fulfilling expectations?

What progress are we making on “fundamentals”?

When path dependence?

## Expectations

Paper wants to “embrace both sides of the ‘history’ versus ‘expectations’ trade-off.”

This is an important frontier, for both theory and empirics.

How might self-fulfilling expectations “work” in this framework?



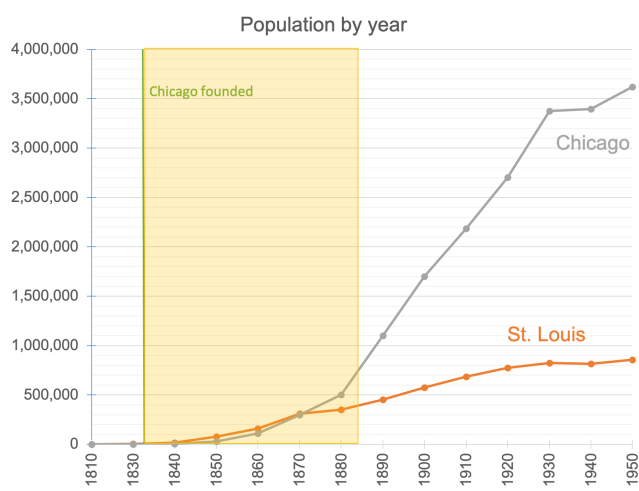
## The Gateway to the West



In early 19th c., considerable uncertainty about which city would become “Gateway to the West.”

- Many sites thought to be destined to host great cities. “If waterway geography were the determinant of urban growth, the major inland city would surely be St. Louis” (Cronon, 1991).
- At Chicago’s incorporation in 1833, St. Louis had a population  $>16\times$  larger and had been a major trading post for 70+ years.

## The rise of Chicago through the lens of this model



Claim: In 1833 (or later?), neither **nature** nor **history** had not uniquely determined the rise of Chicago.

Instead, **expectations** may have played some role (Cronon, 1991; Krugman, 1993; Glaeser, 2013).

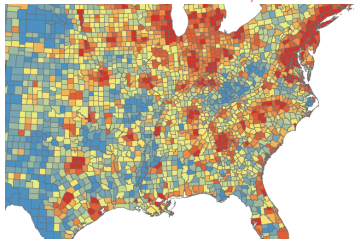
Expectations-driven dynamics: High  $\delta$  or strong  $\alpha_1 + \beta_1$ ?

- What about **Prop 1**?
- Something special about the coarseness of discrete time?

## Unpacking “fundamentals”

Allen & Arkolakis

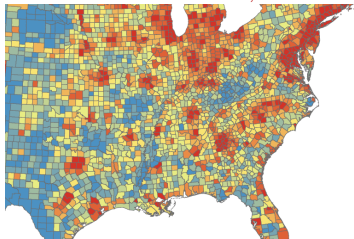
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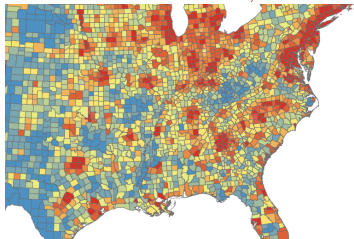
Fall-line cities (Bleakley & Lin)



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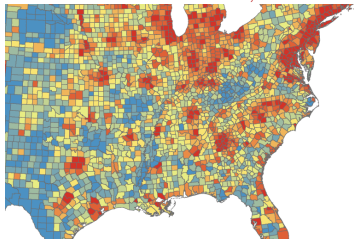
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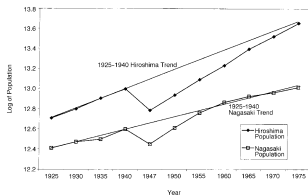
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Can we leverage restrictions on fundamentals (e.g., portage) to better estimate this model?

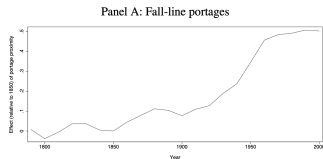
## When should we expect path dependence?

### Davis & Weinstein



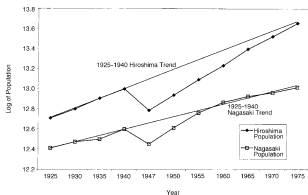
### Bleakley & Lin

Figure 7: Portage and population density, 1790–2000



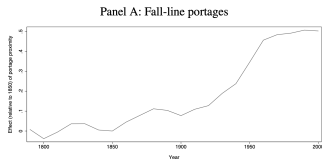
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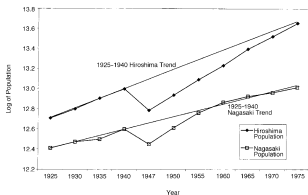
### Possible explanations:

- Natural heterogeneity
- Size of shock
- Expectations
- Capital versus labor



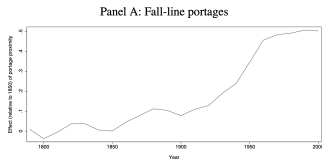
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Framework could be used to investigate these hypotheses, and perhaps more.

- How big did TVA need to be?

## Summary

An important paper that will (should) inspire a lot of future work.

Framework with potential to answer big questions in policy and urban economics.