

Local Ties in Spatial Equilibrium

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Spatial Equilibrium if People have Local Ties

People have local ties

- Median US born adult lives about 50 miles from where they were born
- People are moving less often
(Molloy, Smith and Wozniak, 2011; Ganong and Shoag, 2017; Kaplan and Schulhofer-Wohl, 2017; Coate and Mangum, 2018)

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Spatial Equilibrium models are extremely influential, and cannot match that fact

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What happens to spatial equilibrium if people have local ties?

Agenda

1 Empirical Results

- People Live Close to Where They Were Born (skipped)
- People Who Live in Depressed Places were Born There
- Places Lose Population Slowly (skipped)
- Less Migration in Places with More Locals (skipped)

2 Model of Spatial Equilibrium with Local Ties

3 Model Results

- Depressed Places have Lower Incomes and Migration Elasticities
- Hysteresis: Negative Shocks Make Incomes Lower and More Volatile
- Place-Based Subsidies can be Efficacious
- Local Ties are Persistent

4 Conclusion

Agenda

1 Empirical Results

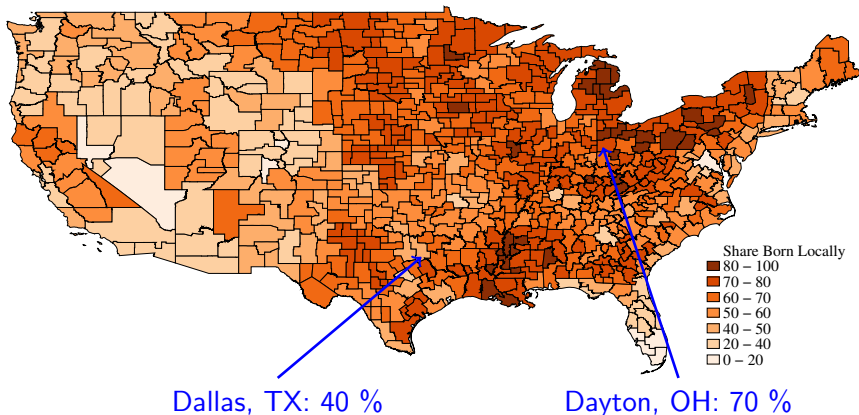
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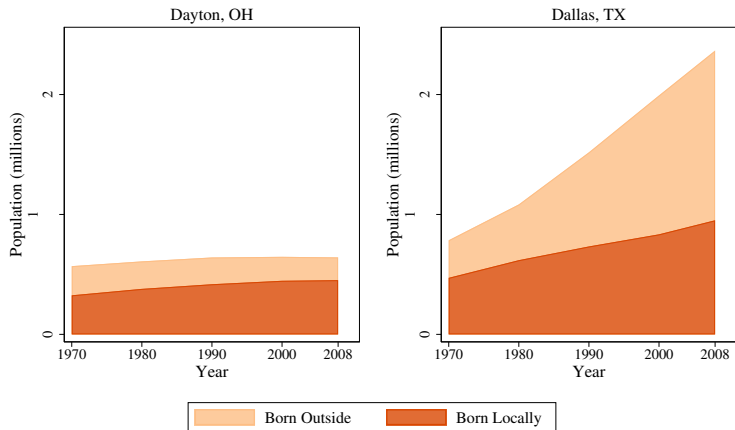
Share of Residents Born in the Same State



Source: 2000 Census mapped to 1990 commuting zones

People with local ties stay in depressed places

People who Live in Depressed Places were Born There



Note: Commuting zones 5120 and 520. [Scatter of Ties](#)

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Model in of Local Ties in Spatial Equilibrium

Workers choose a place to live

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- Birthplaces reflect historical populations (previous shocks)
- **Most workers prefer to live where they were born** ($k = j$)
- But they trade off local ties, wages, rents, and amenities

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In spatial equilibrium:

- Local firms in each area with changing productivities
- National firm combines local goods into a consumption good
- Housing is non-tradeable, has supply elasticity

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- Can extend to include durable housing, different skill levels

Housing

Government

Production

Worker Choice

Calibration

Workers Choosing Where to Live

Indirect utility of individual i , in area j , who was born in area k :

$$u_{ijk} = \underbrace{\omega_j}_{\text{Real incomes}} + \underbrace{A_j}_{\text{Amenities}} + \underbrace{\xi_{ijk}}_{\text{Logit}} + \underbrace{\mathbb{1}(k=j)\mu_i}_{\text{Local Ties}}$$

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Local Ties (μ_i) - Preference for living in your birthplace

- Differences are due to who chooses to live in j
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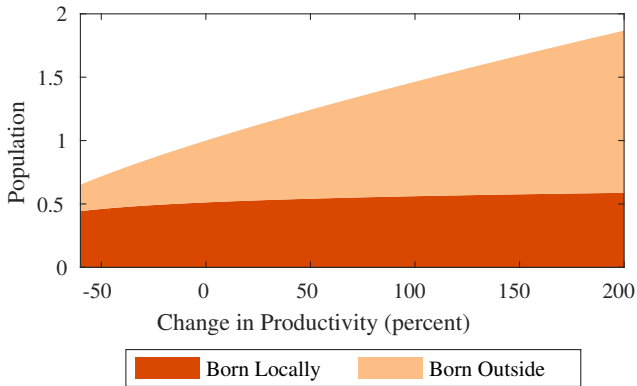
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Local Ties (μ_i) - Preference for living in your birthplace

- Differences are due to who chooses to live in j
- And how many people were born in k
- Distribution of attachments, indexed by i , is independent the birthplace (k)
- Local ties evolve over time – workers move to productive places and form ties

Productivity Increases Population, Decreases Local Ties



Calibration

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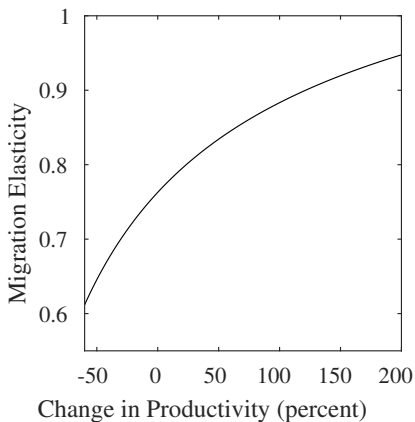
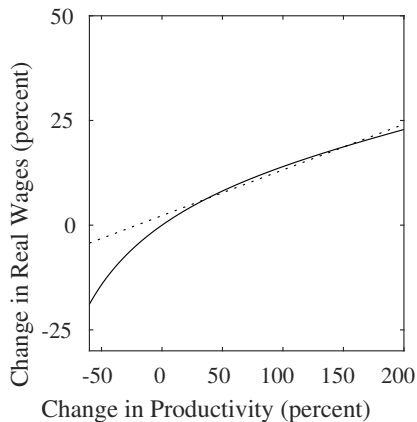
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Real Incomes and Migration Elasticities Are Lower in Depressed Places



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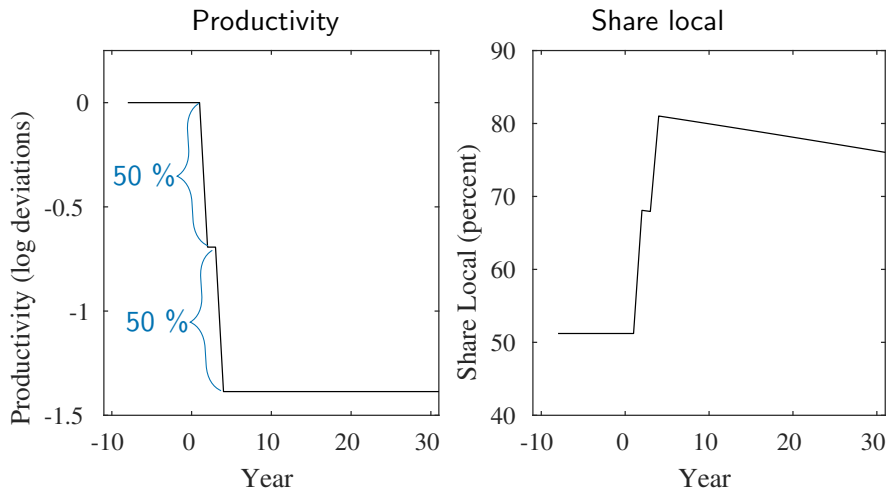
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Impulse Responses after Equal Declines in Productivity

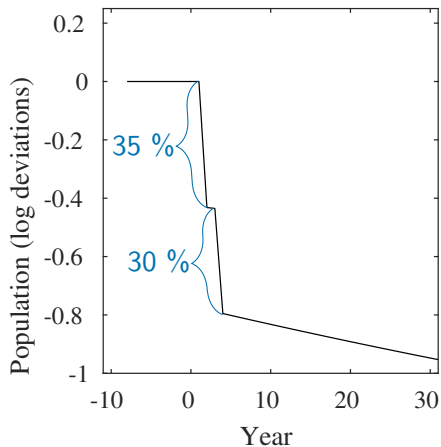


Idea: Shock the same area twice, same size shock.

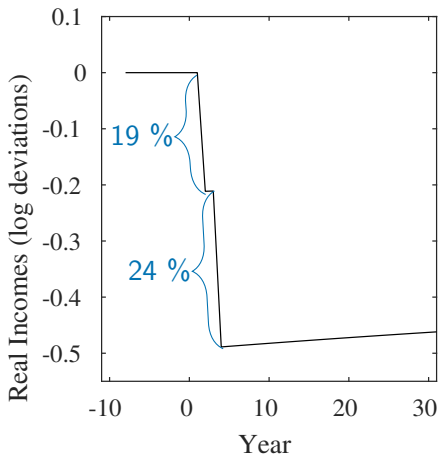
- First shock changes the share local

Impulse Responses after Equal Declines in Productivity

Population



Real Incomes



Responses differ

- 1 First shock - Locals stay, real wages decline somewhat (persistently)
- 2 Second shock - Less migration, real wages decline by more

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A 10 pct Place-Based Subsidy

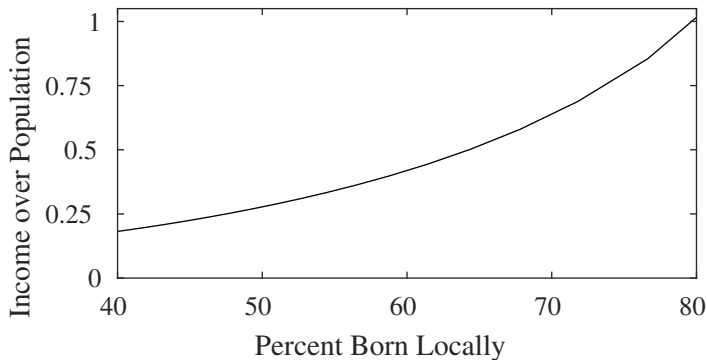
Setup: A subsidy equal to 10 percent of initial wages

- To places with low and high ties (percents born locally)
- Declines at 4 percent per year
- Present Discounted Value of percent changes with 2 pct discount rate

Impacts on

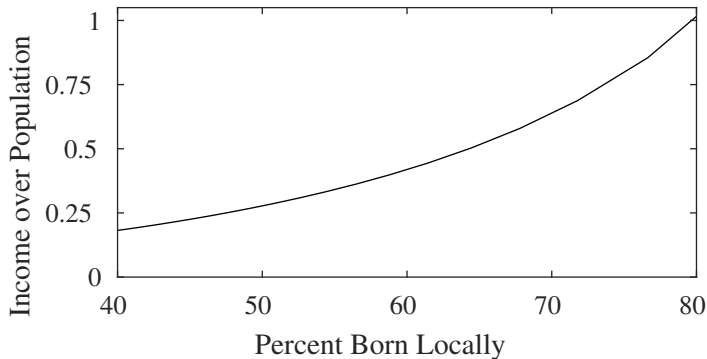
- 1 Ratios of changes in incomes to populations
 - ▶ Benefit (income increases) vs cost (population distortion)
Kline and Moretti (2014); Zabek (2018)
- 2 Changes in real incomes locally and in places paying for the subsidy

Ratio of Changes in Real Incomes to Population



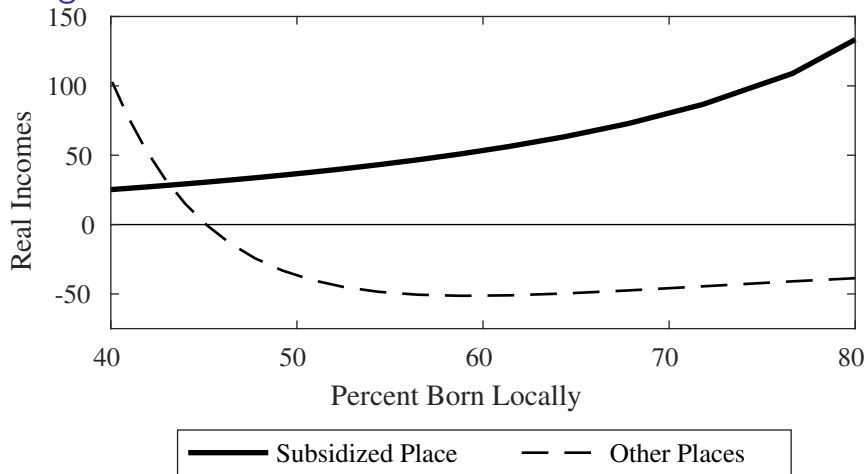
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Ratio of Changes in Real Incomes to Population



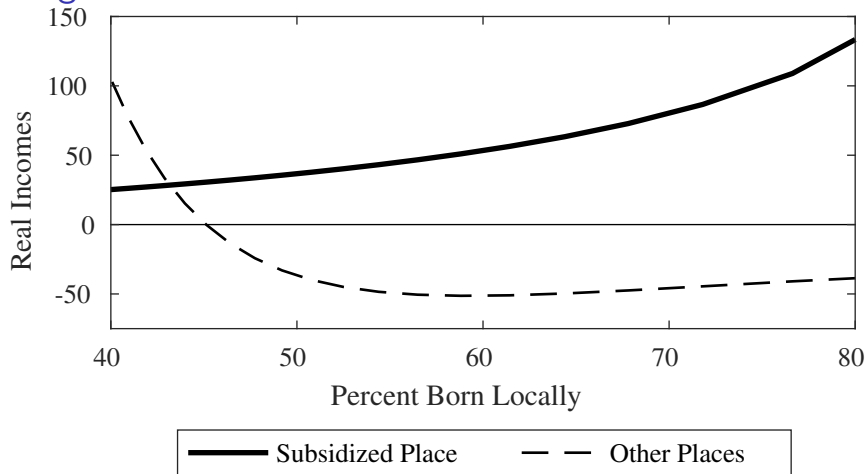
- Real incomes change by more than population in depressed places
- Subsidies increase real incomes without distorting population (much)

Changes in Real Incomes



- Real incomes in depressed places increase by more

Changes in Real Incomes



- Real incomes in depressed places increase by more
- Subsidies to growing places increase real incomes everywhere
- Including the places that pay for them

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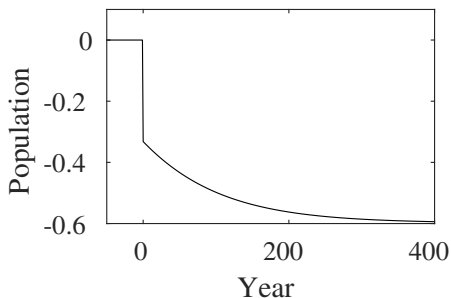
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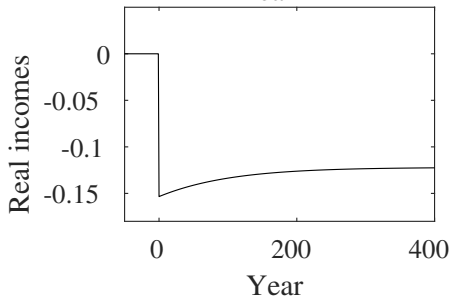
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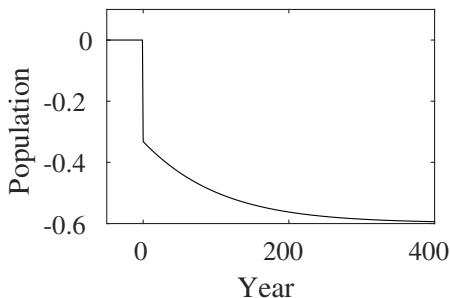
Convergence After a 50 % Decline in Productivity



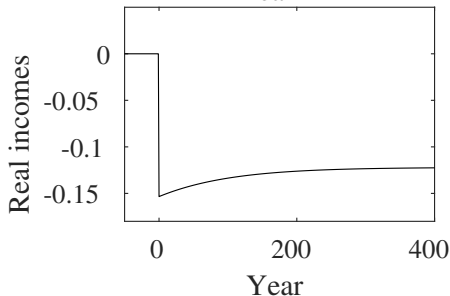
Population declines by less than in steady state
(too small by about 1/3)



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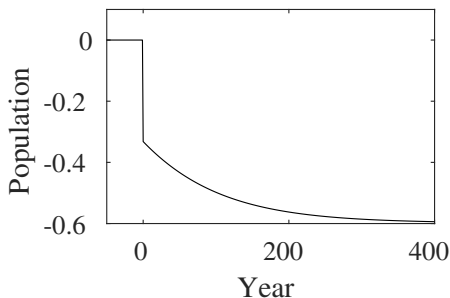


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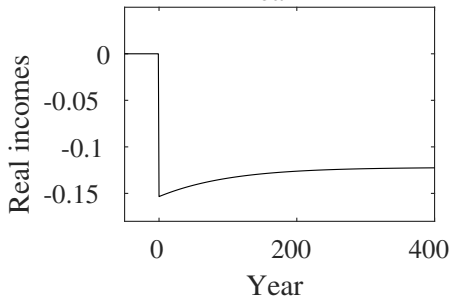


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Convergence After a 50 % Decline in Productivity



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Real incomes decline by more than in steady state

Convergence takes generations
(takes a generation to halve the distance to steady state)

Conclusion

- Large differences in how many locals live in different places
- Depressed areas have more locals and less elastic migration
 - ▶ Real wages can get quite low
 - ▶ Labor demand shocks impact wages, not population
 - ▶ Differences persist for generations
- Place based subsidies have different effects
 - ▶ Economically depressed places – increase local incomes
 - ▶ Growing places – increase population and aggregate productivity

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