

Vulnerable Communities: Automation, Trade and the Future of Public Policy



Computing Research Association: Summit on Technology and Jobs

December 12, 2017

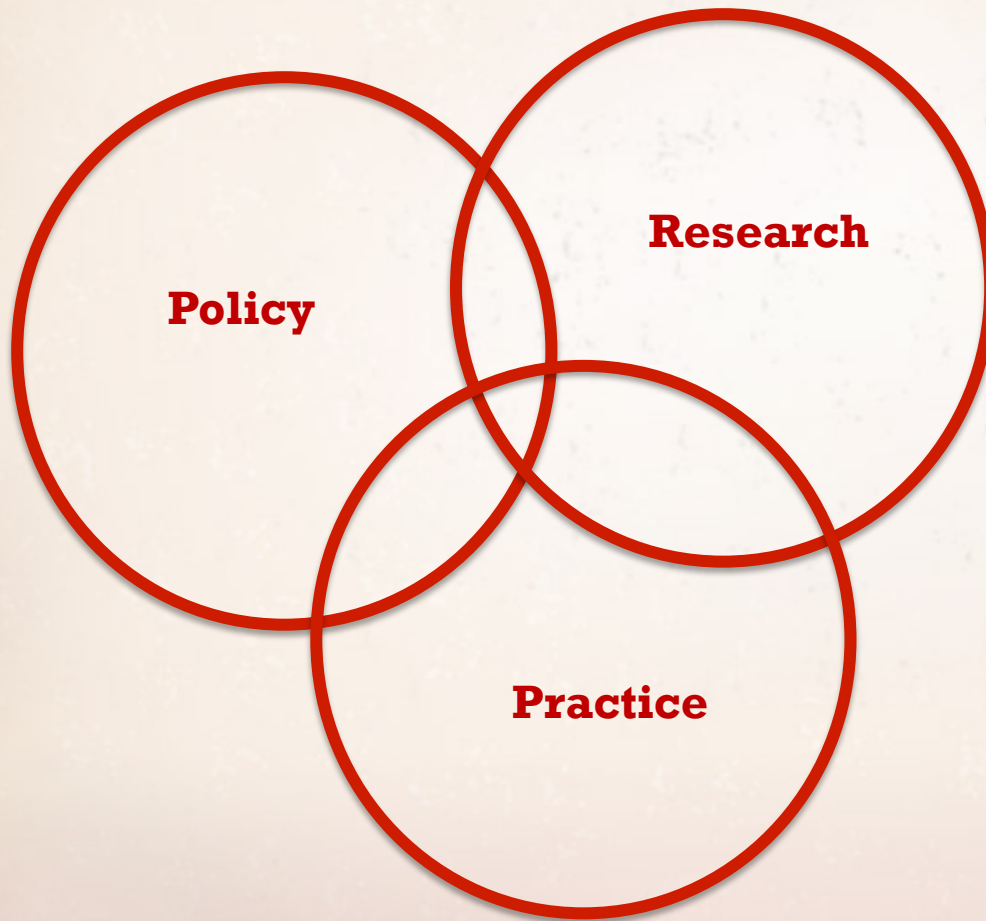
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Research: economics, sociology, political science, public administration and planning

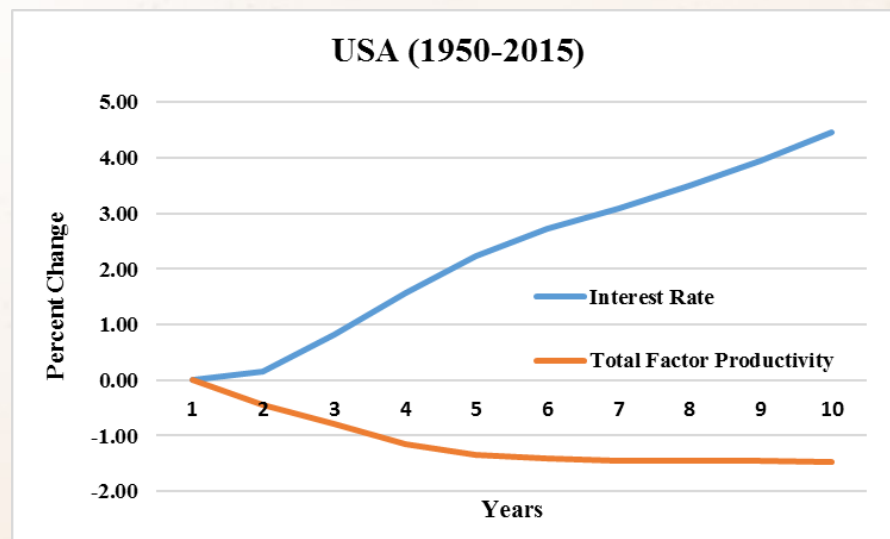
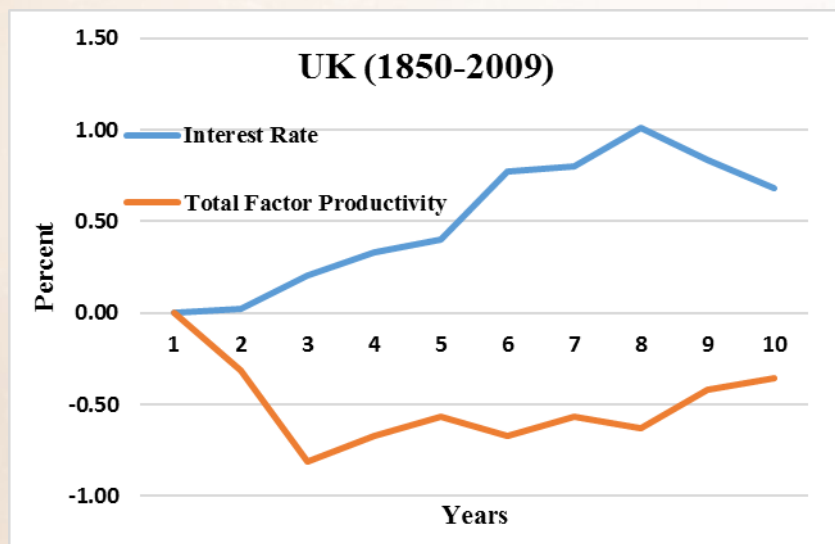
Policy: former agency heads, elected officials and legislative services veterans

Practice: former economic and community development officials

A Puzzle . . .

The impulse-response of a one-std. dev. shock of technology and cost of capital on the unemployment rate

Labor is complement to capital



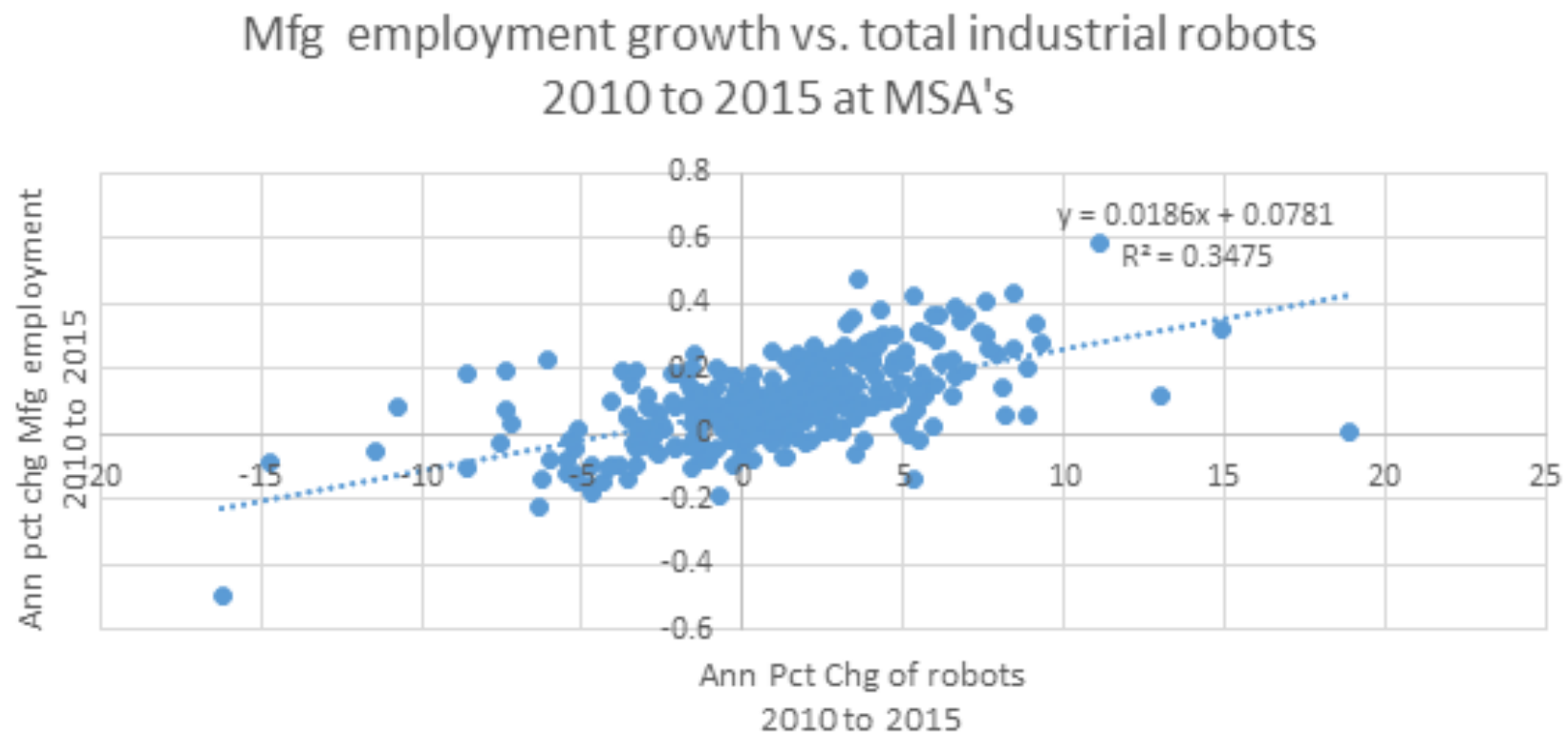
Technology shocks reduce unemployment

Liverpool and Muncie . . .

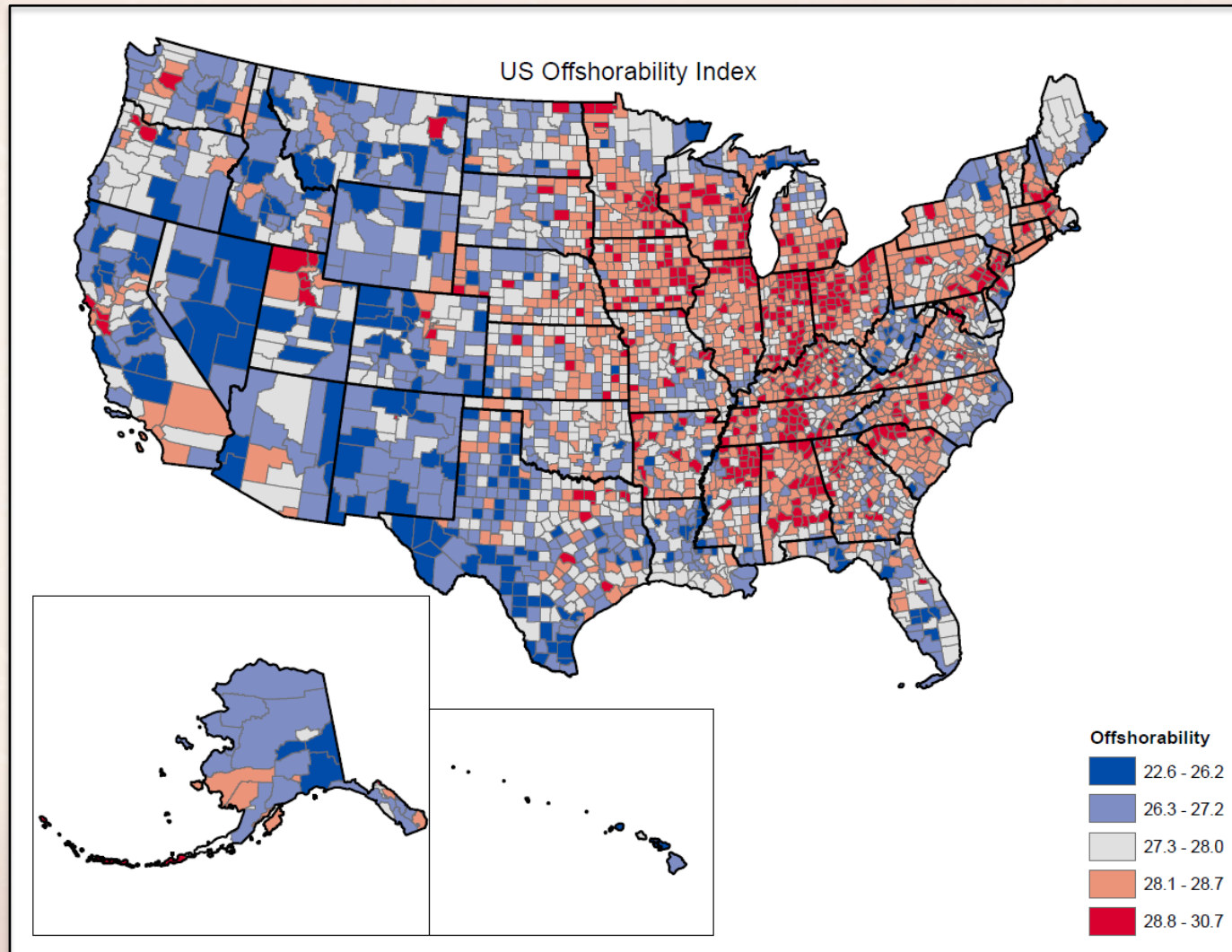


Vulnerable communities

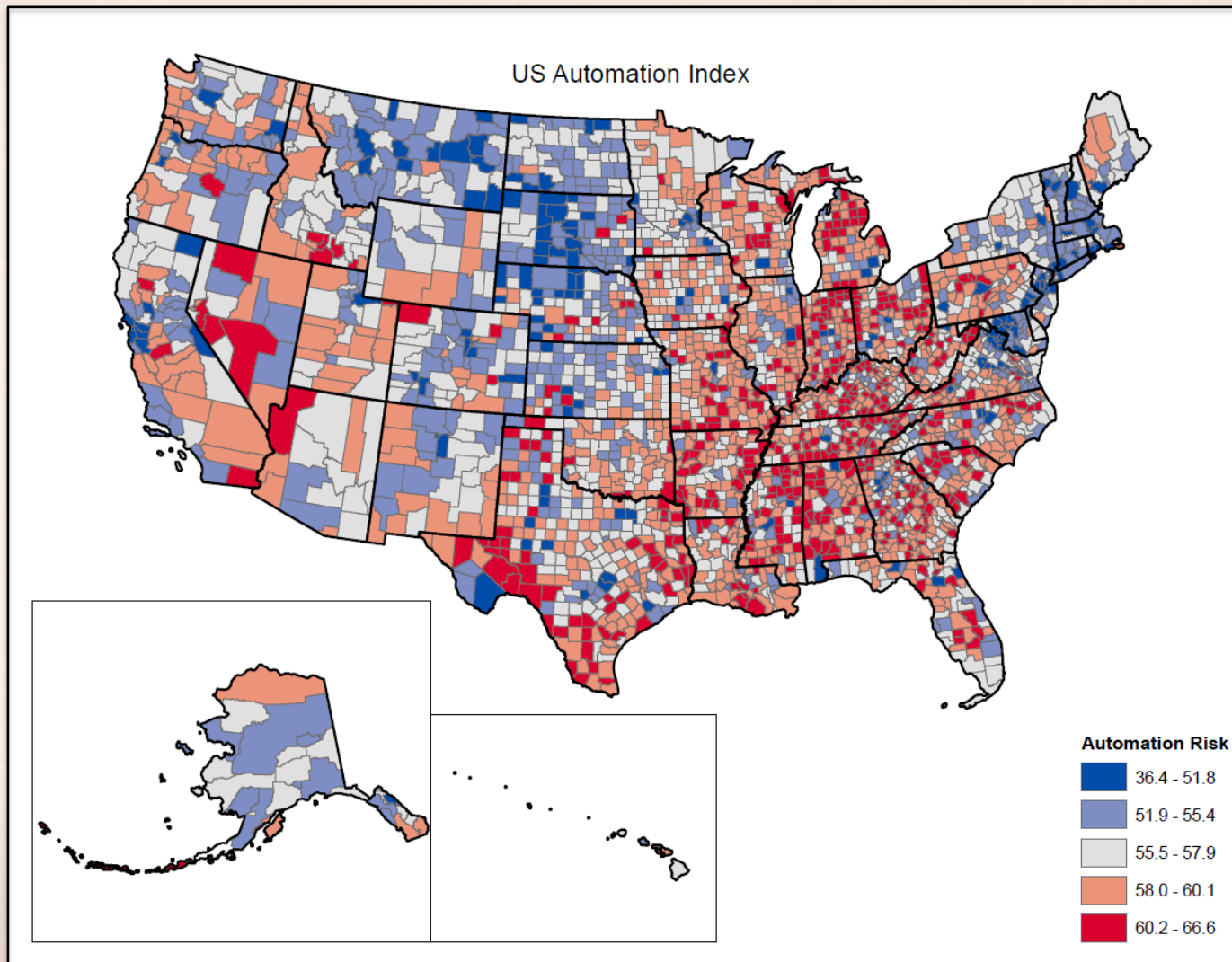
Robots are Complements to Workers? But not necessarily in the same factory



US Relative Offshorability Risk to Employment Source:
Blinder, 2009 in Devaraj, Hicks, Wornell and Faulk, 2017

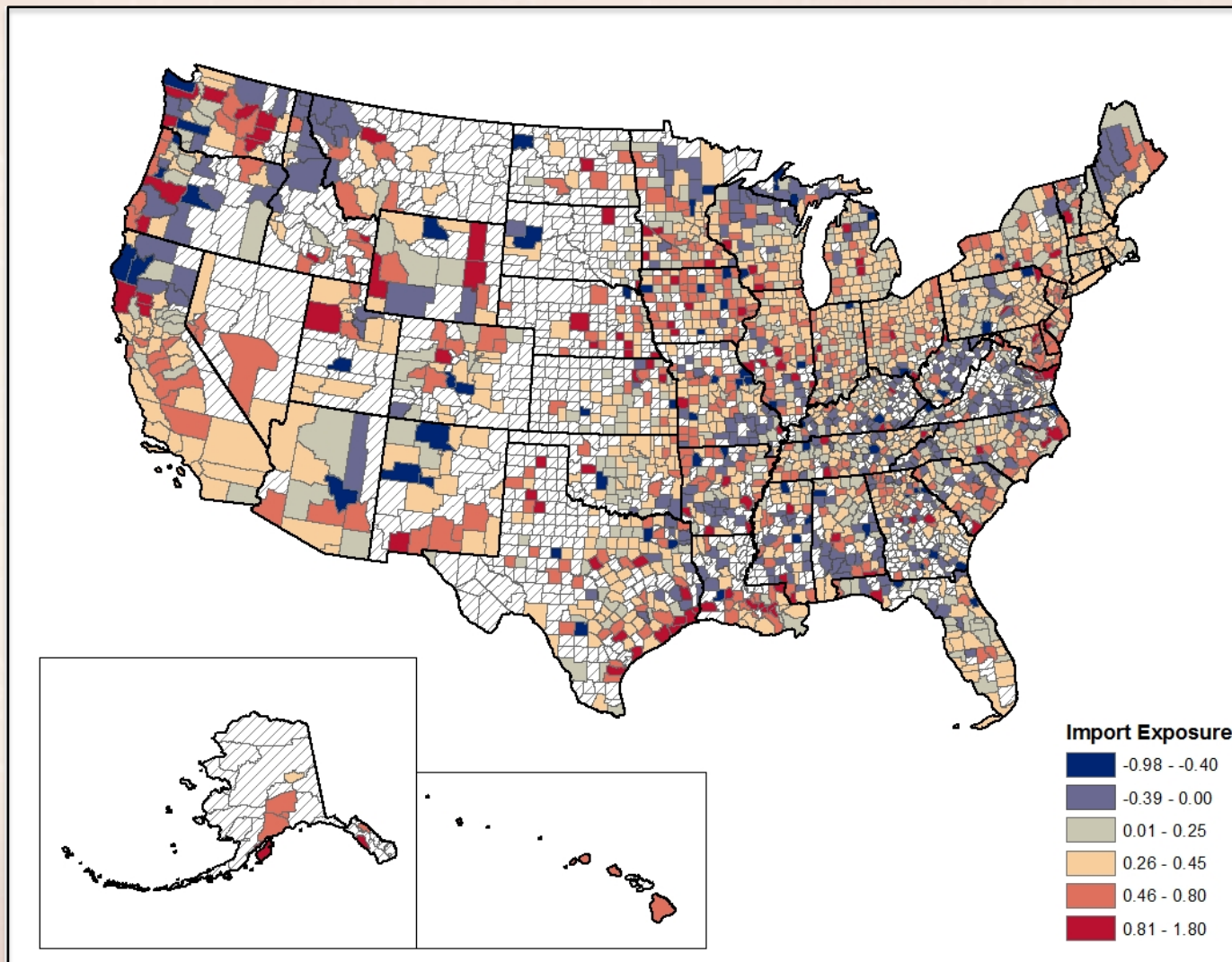


US Relative Automation Risk to Employment Source: Frey and Osborne, 2017 in Devaraj, Hicks, Wornell and Faulk, 2017

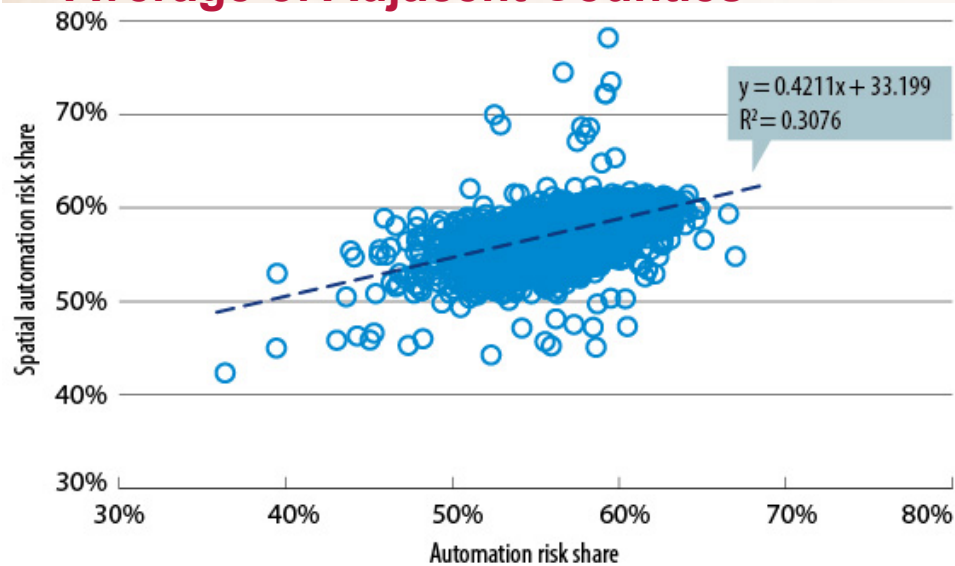


Change in Trade Exposure (2000-2010)

Source: Hicks and Devaraj

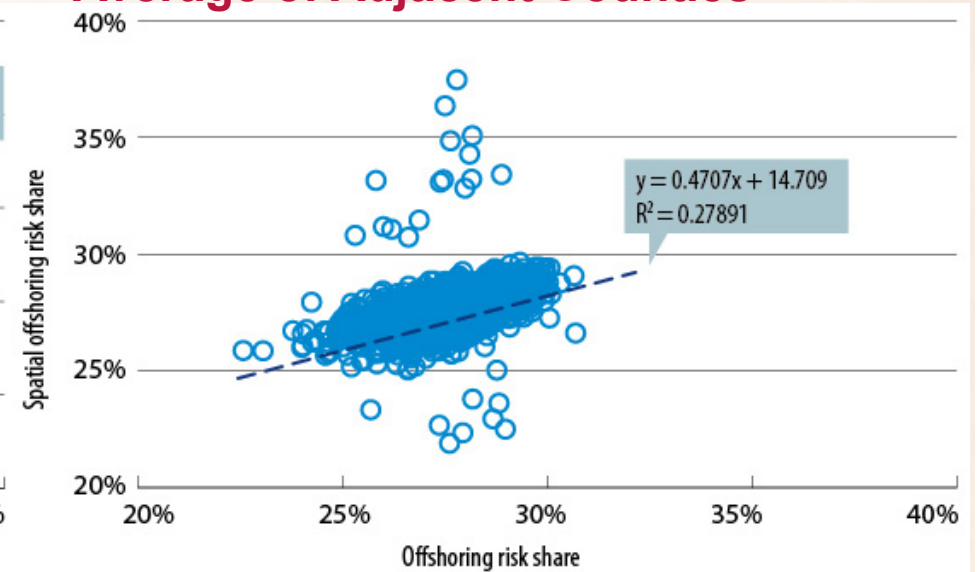


Automation Risk in Own County and Average of Adjacent Counties



Source: Frey and Osborne (2017), reported in Devaraj, Hicks, Wornell and Faulk, 2017

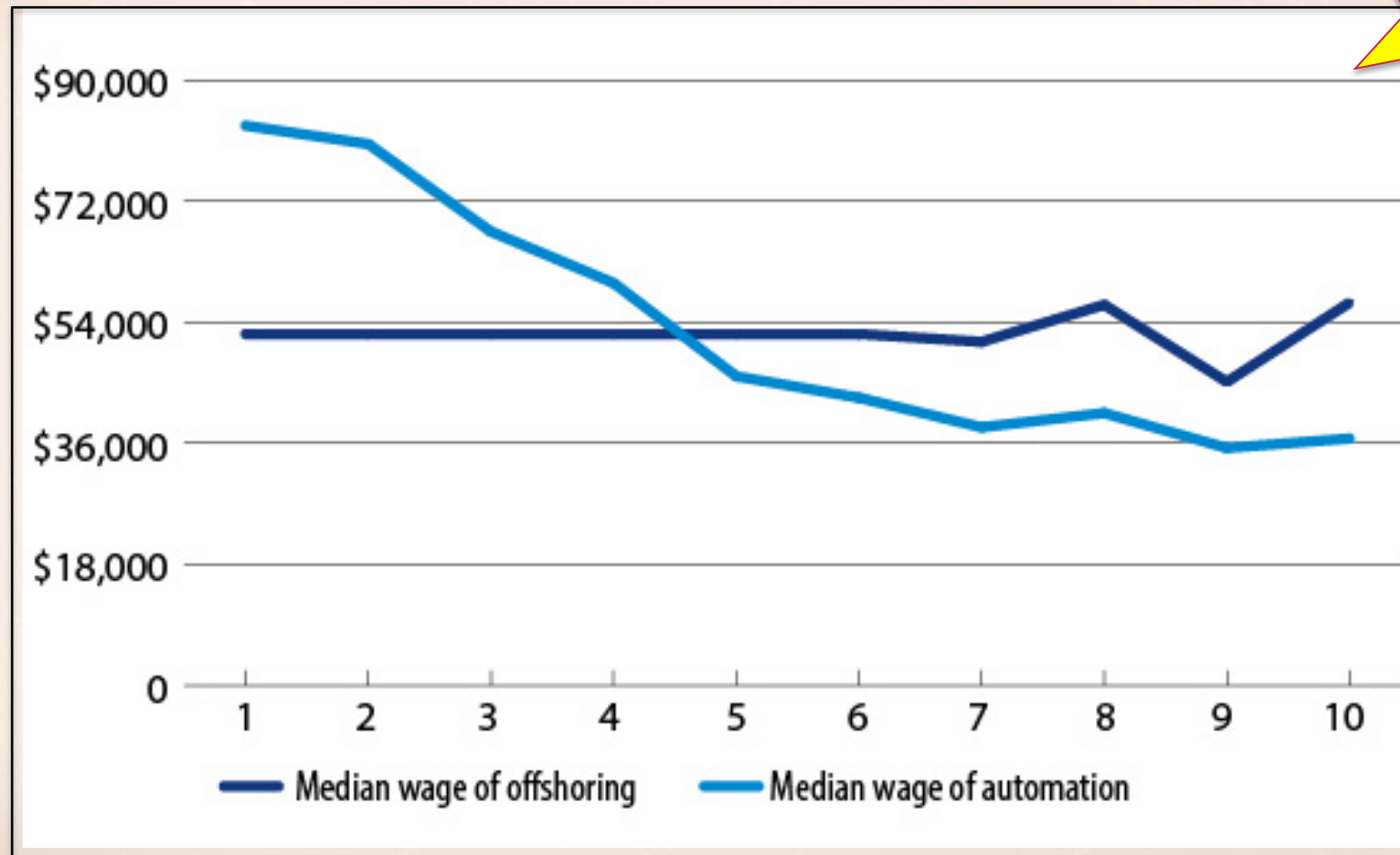
Offshoring Risk in Own County and Average of Adjacent Counties



Source: Blinder (2009), reported in Devaraj, Hicks, Wornell and Faulk, 2017

Automation and Offshoring Risk by Income Decile

Source: Bureau of Labor Statistics, Blinder (2009) and Frey and Osborne (2017) in Devaraj, Hicks, Wornell and Faulk, 2017

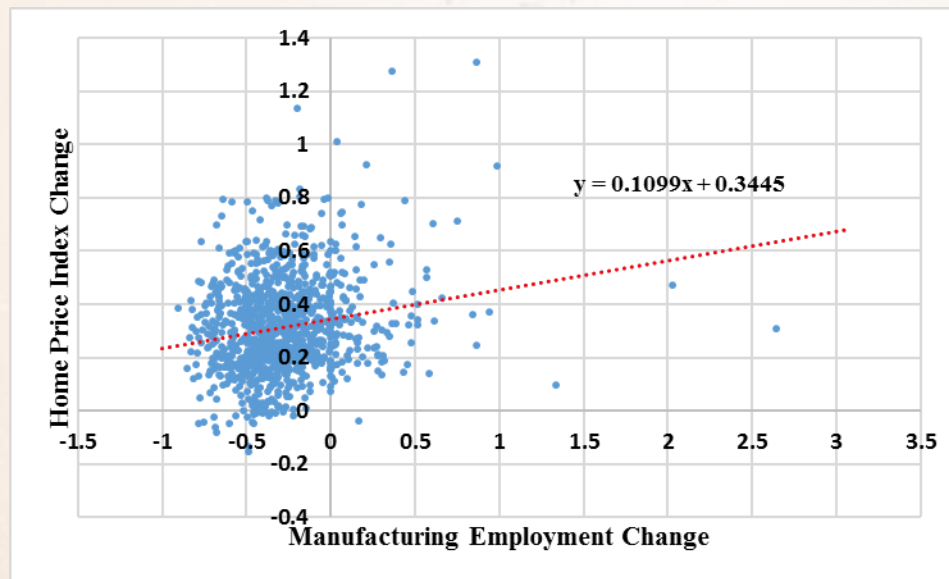


Policies on Trade, People and Places

- What is the problem/welfare impacts?
- Trade and Technology Policies
- People-Based Policies
- Place-Based Policies
- Place-Based People Policies

Source of pain isn't just labor income?

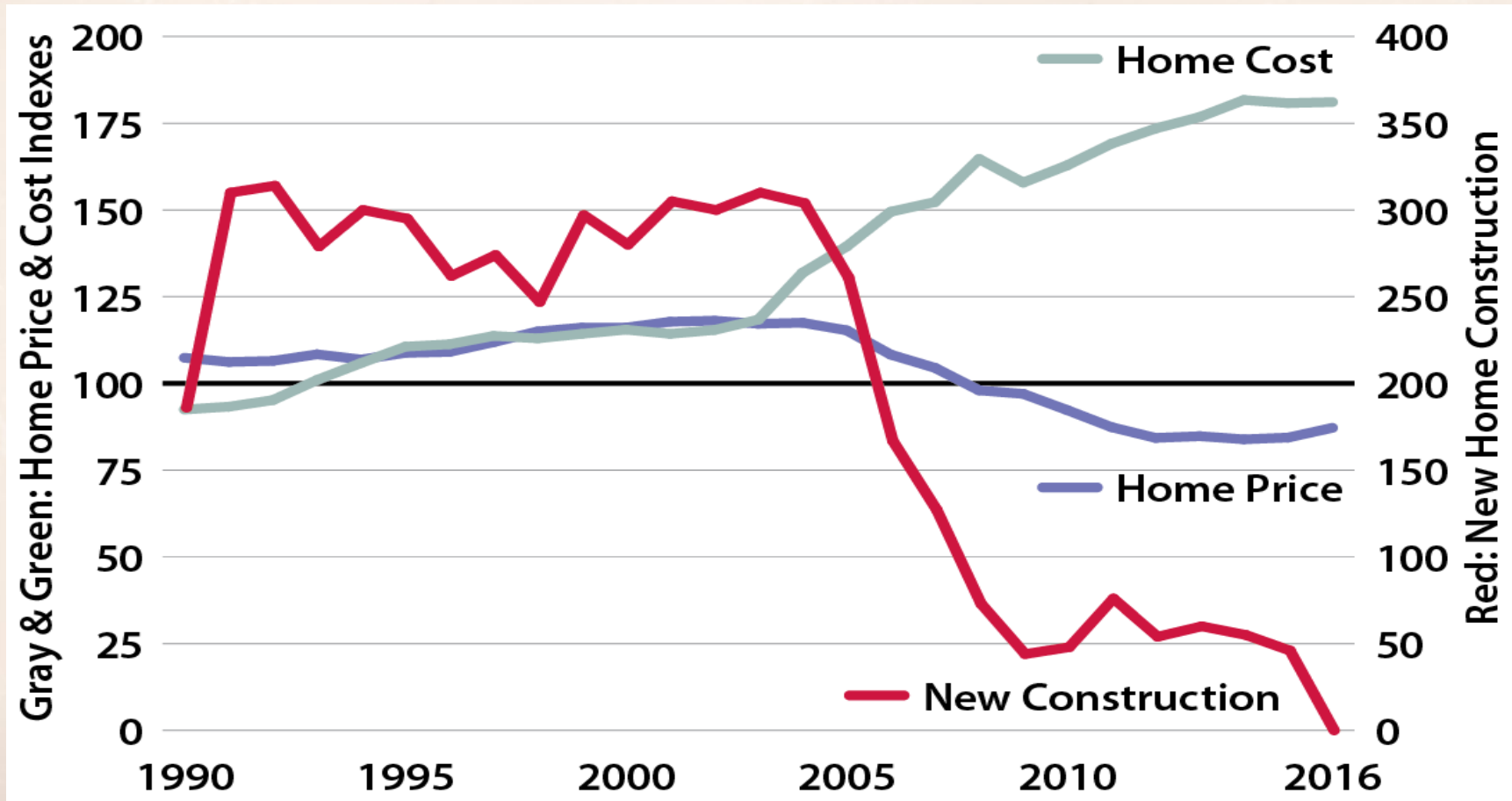
log-log change in home prices and manufacturing employment 2000-2010 (non-metro counties)



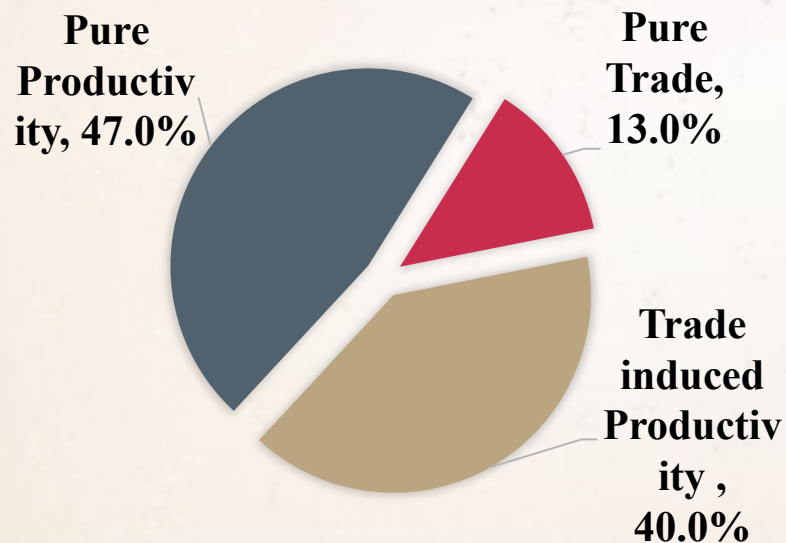
- **Just this estimate implies a nearly \$500 billion loss of wealth concentrated in manufacturing intensive communities**

Muncie's Experience

(Hicks, 2017)



Skepticism on Trade Policy

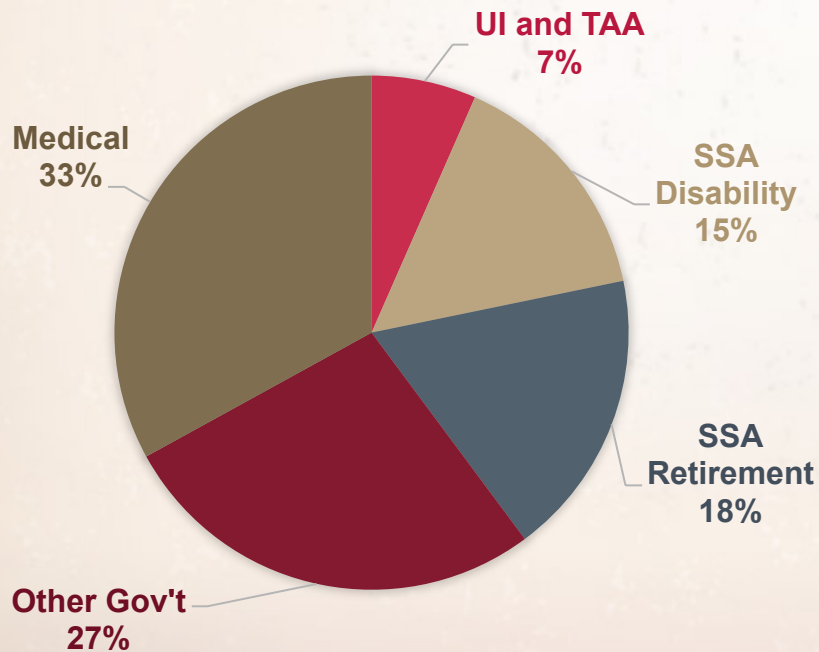


- This implies an elasticity of productivity with respect to trade pressure of roughly 3.5 (assuming circa 2000 technology)
- We can re-shore manufacturing production, just not manufacturing jobs

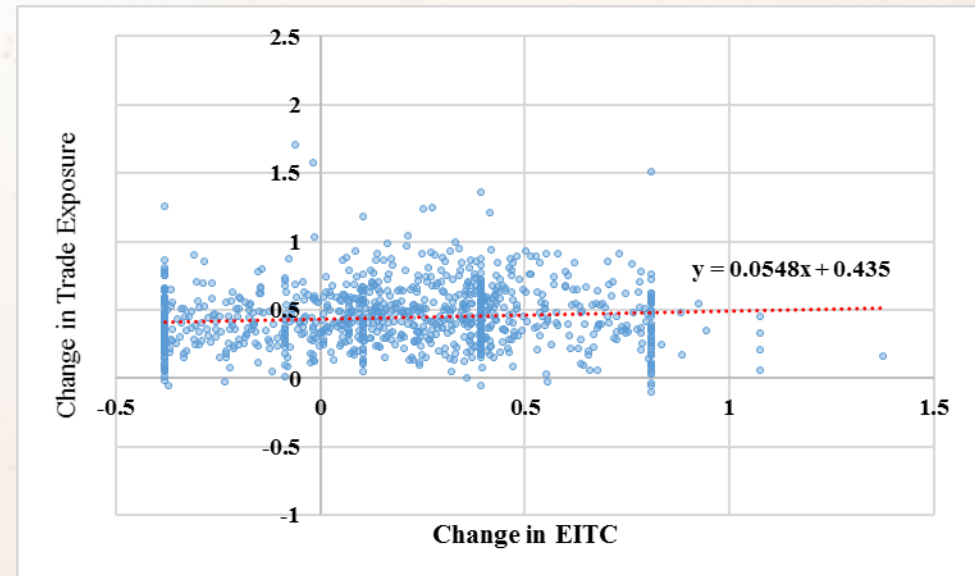
- See Pierce and Schott; Autor, Dorn, and Hanson; Hicks and Devaraj

Traditional People Based Policies

- \$1,000 increase in trade exposure per worker leads to a \$57.73 increase in public spending (Autor, Dorn and Hanson)



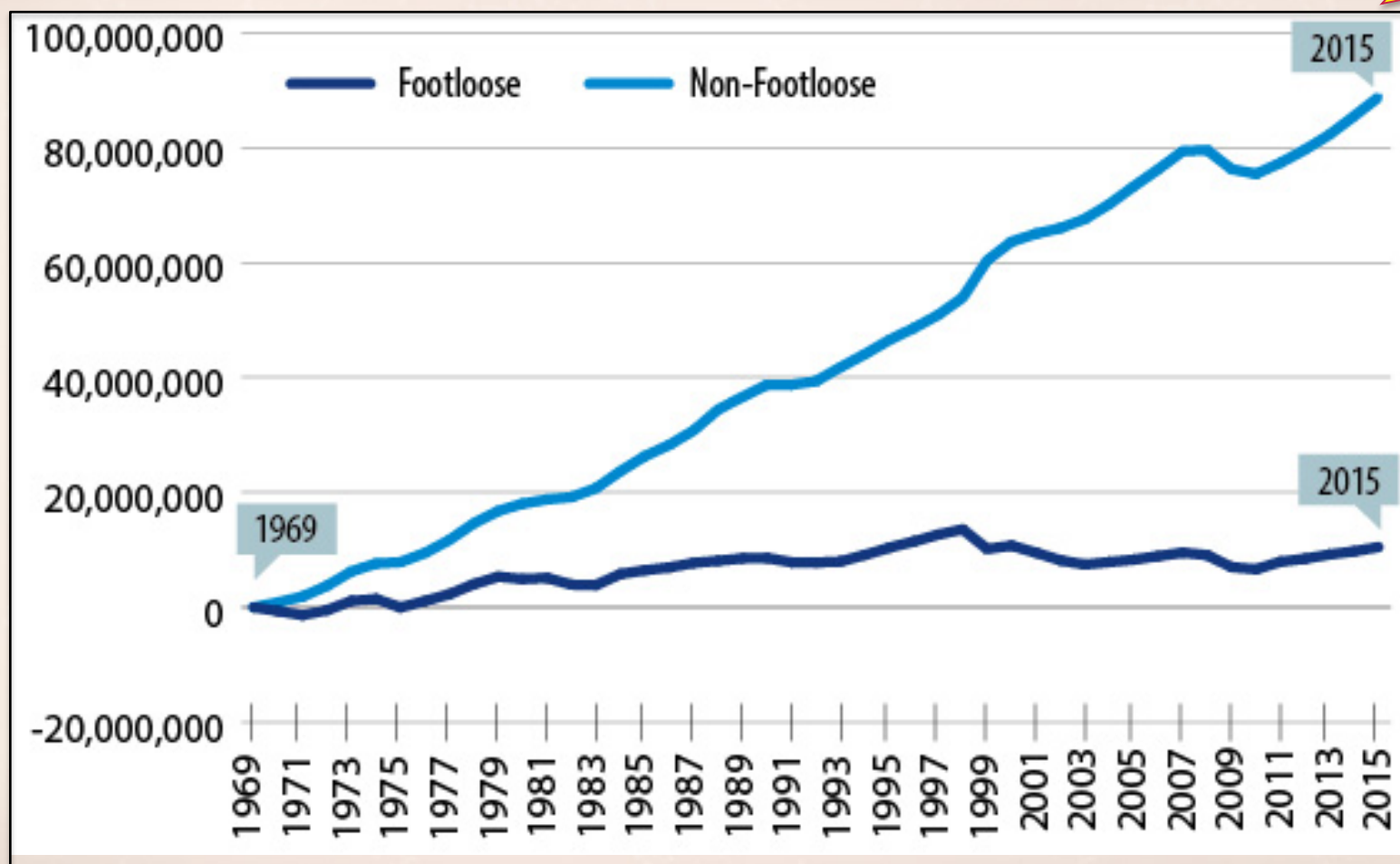
- Change in EITC due to trade exposure in US Counties (Hicks and Devaraj)



Place-Based Policies

- Traditional local economic development policies have been poorly conceived (chasing smokestacks), with fairly dismal empirical support.
- Regional based Federal and state policies (e.g. enterprise or empowerment zones) have a highly heterogeneous effect, difficult to assess effectively, and costly to deploy broadly.
- Not at all clear existing agglomeration economies wouldn't swamp even ambitious (TVA scale) place based policies. Poor places are moving against trend.

Cumulative Growth in Footloose and NonFootloose Jobs in the US (1969-2015)



Place-Based People Policies

- Small scale place-based people policies (Moving to Opportunity) show promise, but may not be scalable.
- Heterogeneity of federal and state programs may be linked to local capacity.
- Indiana's Regional Cities and Stellar Communities are capacity building programs with infrastructure (link capacity to program eligibility)
- Not clear this will reduce regional growth differences, and may exacerbate it (even if welfare enhancing)

Summary

- Trade, automation and agglomeration are generating significant regional differences in economic outcomes.
- These differences are visible, persistent and generate both social and political consequences.
- People and place based policies aren't clearly reducing regional inequality or the persistence of shocks.
- Persistence of effects is generational in people, may be multi-generational for places.

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