

INTERNATIONAL TRADE - ECON 245

FABIAN ECKERT

SPATIAL ECONOMICS

MYSELF

- ▶ Bavarian born and raised in Munich, Germany
- ▶ UCSD via UCL in London, Yale in New Haven, IES Section in Princeton
- ▶ *Research Interests: Spatial Economics, Long-run Macro, Economic Geography, Tradable Services, Inequality, etc.*
- ▶ Fun fact: currently lives in New York City

AND YOU?

What did you do before PhD?

What topics are you interested in?

How was first year for you?

THIS CLASS: LOGISTICS

- ▶ My goals:
 - ▶ Make you excited about spatial economics
 - ▶ Get you started writing papers
 - ▶ Teach you some essentials you need to know
- ▶ I am teaching this for the first time: new to all of us
- ▶ Would love to create an “Esprit de Corps” around Spatial Economics and develop the research agenda with you in the next years

THIS CLASS: LOGISTICS

- ▶ Class: M/W 1-2.15 on zoom
- ▶ Grades:
 - ▶ 2 Problem Sets
 - ▶ Presentation in the end: your own paper?
 - ▶ Maybe a paper discussion/referee report
 - ▶ Attendance
- ▶ Email: fpe@ucsd.edu
- ▶ Materials+Updates: www.fpeckert.me/teaching

MY APPROACH

- ▶ A paper is like a start-up
 - ▶ Need a punchline, hook, clear, compelling value proposition: I like graphs
 - ▶ Use all the tools you have to make it technically perfect; and aesthetically *beautiful*
 - ▶ Try to please the reader; their attention/interest is what the sales are to Tesla
 - ▶ Then need to advertise it, be pushy, make it matter
 - ▶ Okay to fail a bunch of times; always learn and develop yourself
 - ▶ Need a good team; collaboration, communication, and fun are central
- ▶ Go into “markets” that are not too crowded (e.g., macro search is crowded)
 - ▶ Or even create new “markets” for your ideas
- ▶ Collaborate widely, cite generously, all boats are lifted together

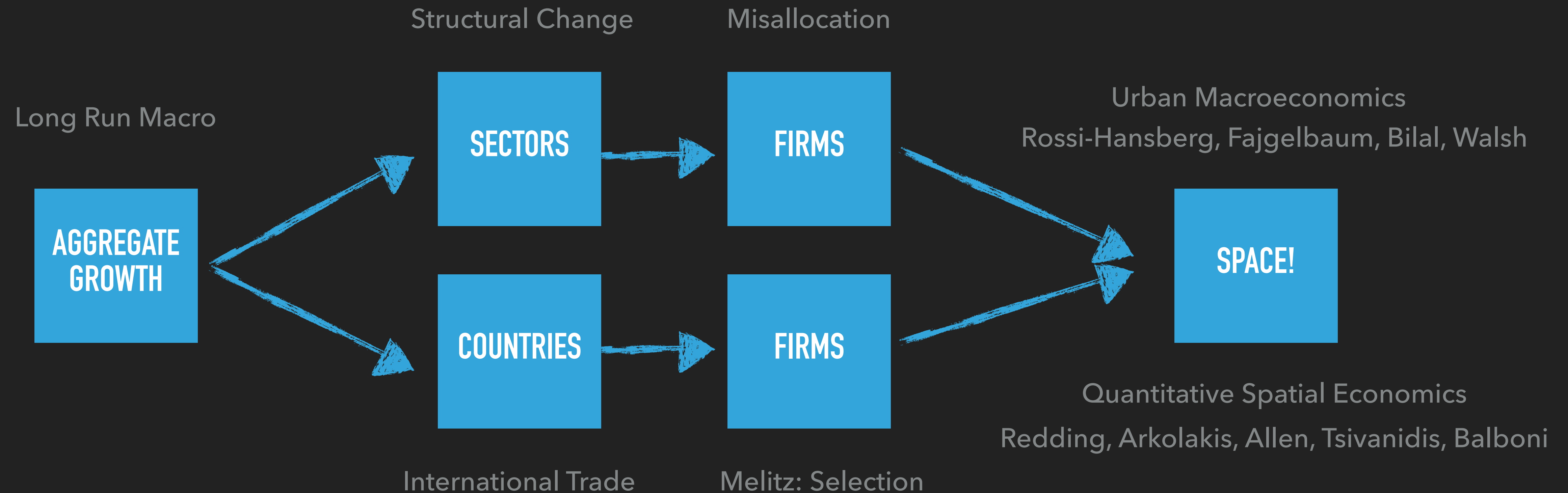
THE SPATIAL ECONOMICS AGENDA

MEDIEVAL

PAST

PRESENT

FUTURE



THE FOREFATHERS

...by “economic geography” I mean the “location of production in space”; that is that branch of economics that worries where things happen in relation to one another.

...one of the best ways to understand how the international economy works is to start looking what happens *inside* nations. If we want to understand difference in national growth rates, a good place to start is by examining differences in regional growth; if we want to understand international specialization a good place to start is local specialization.

THE FOREFATHERS

Step back and ask, what is the most striking feature of the geography of economic activity? The short answer is surely *concentration*. Think of the United States: most of the population of huge, fertile country lives along part of the two coasts and the Great Lakes; within these belts, population is further concentrated in a relative handful of densely populated urban areas. [...] These urban areas in turn are highly specialized, so that production in many industries is remarkably concentrated in space.

This geography concentrations clear evidence of the pervasive influence of some kind of increasing returns.

I believe that the time has come to use the IRS tools to resurrect economic geography as a major field within economics.

QUANTITATIVE SPATIAL ECONOMICS TODAY

- ▶ Until *very* recently most work in spatial economics was stylized
 - ▶ Mapping between model and data not easily possible
- ▶ Recently: development of a quantitative spatial economics framework:
 - ▶ Clear mapping between data and model; realistic geography
 - ▶ Efficient computation and positive properties well-established
 - ▶ Easily amenable to a myriad of important open questions
- ▶ Review article "Quantitative Spatial Economics" by Redding and Rossi-Hansberg

AN OVERVIEW OF SOME NASCENT TOPICS IN SPATIAL ECONOMICS

- ▶ Some of the best job market candidates in recent years were spatial economists:
 - ▶ Allende, Almagro, Balboni, Bilal, Kreindler, Tsivanidis, Van Patten, Walsh etc.
- ▶ All these papers have intuitive mass appeal; space is central to human experience
- ▶ We will now look at some example topics!

(TRADABLE) SERVICES

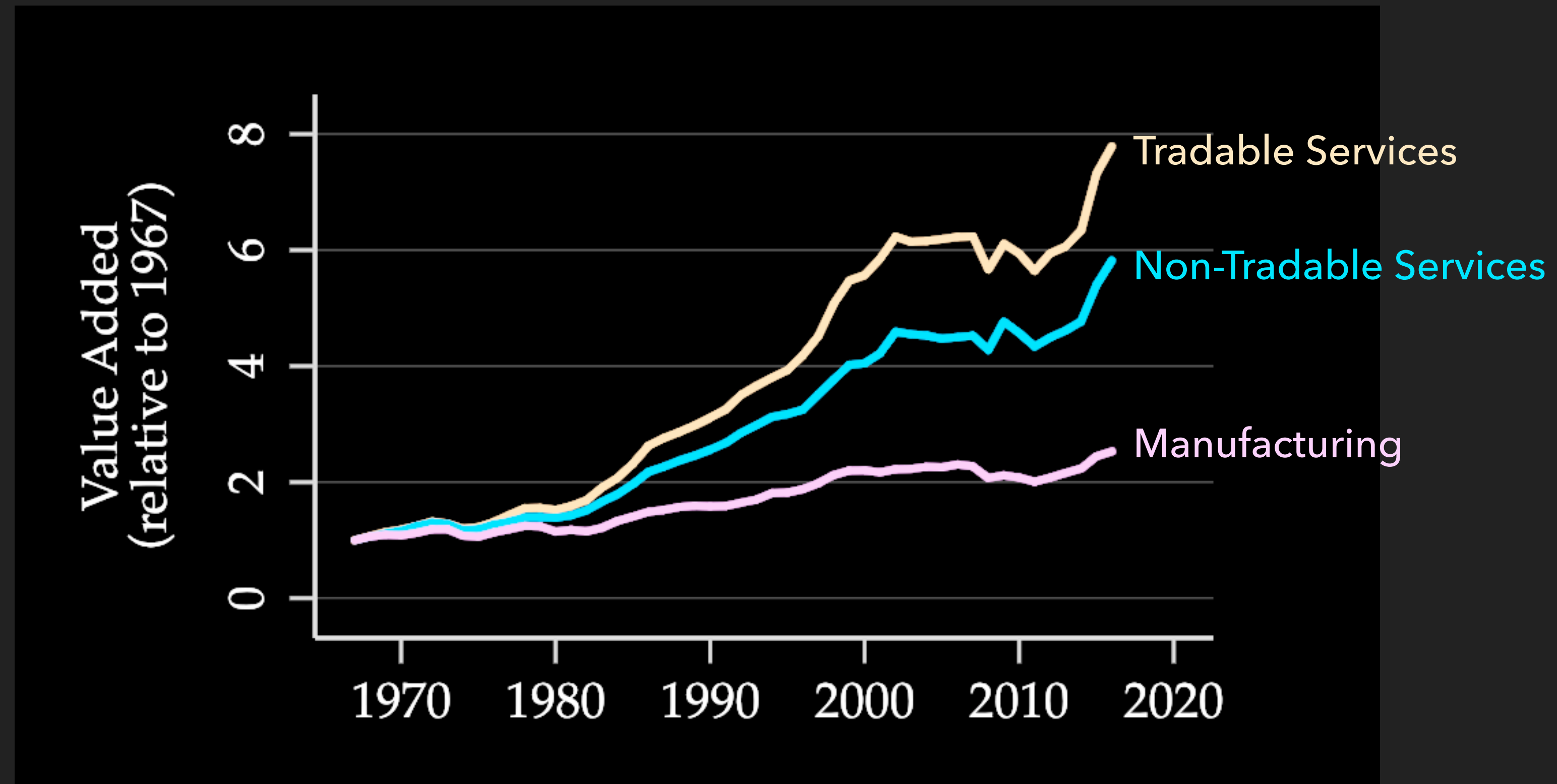
In the late 20th Century the great bulk of our labor force makes services rather than goods. Many of these services are non tradable and simply follow the geographic distribution of the goods-producing population.

Some services, however, especially in the financial sector, can be traded.

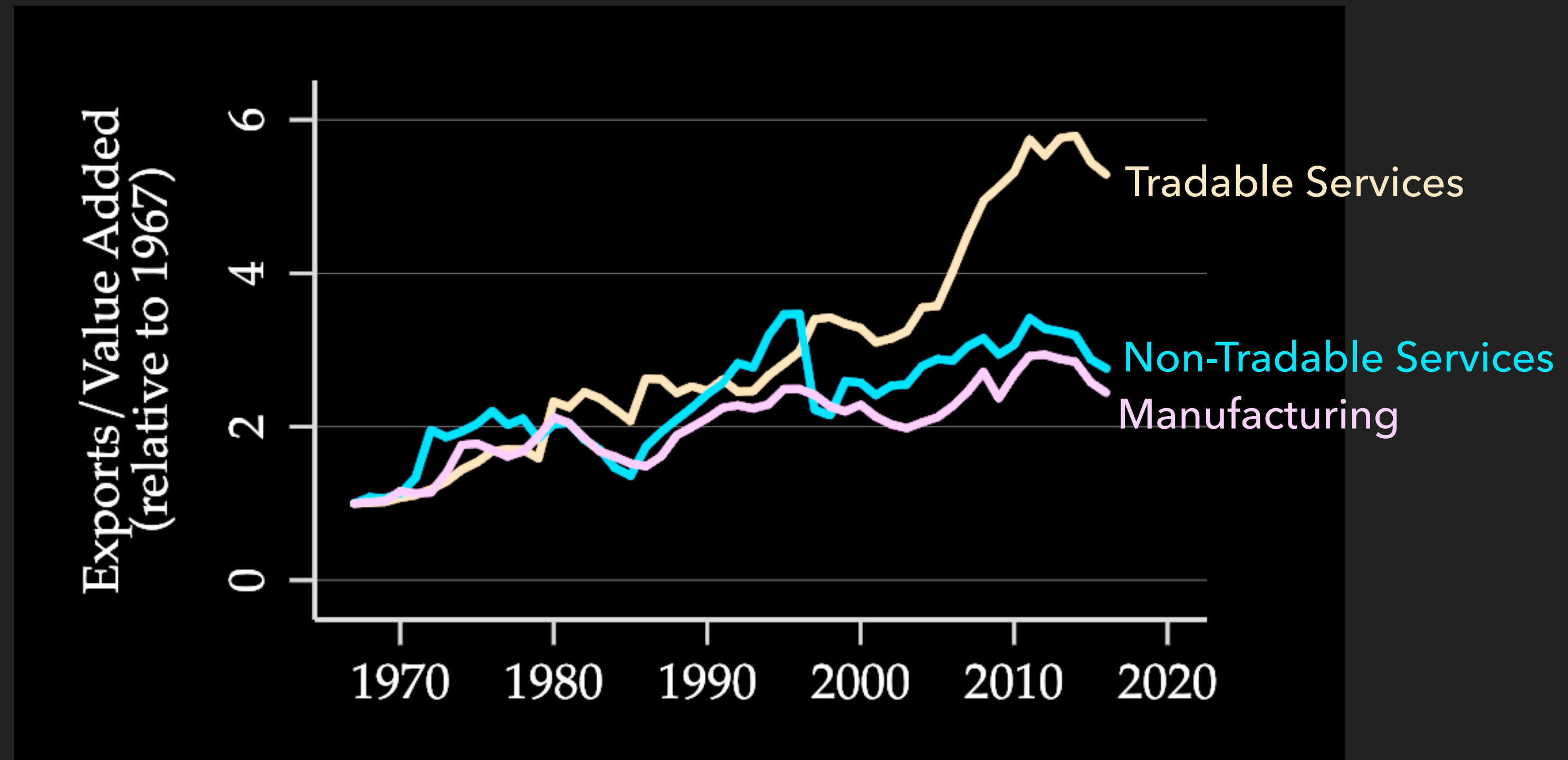
The most spectacular examples of localization in today's world are, in fact, based on services rather than manufacturing. And arguably technology is moving in a direction that will promote more localization of services. Transportation of goods has not gotten much cheaper in the past eighty years : the epochal innovations were railroads and steamboats, with everything since representing only modest improvements.

But the ability to transmit *information* has grown spectacularly, with telecommunication, computers, fibre optics, etc. - Paul Krugman in *Geography and Trade*, 1991 (!!!)

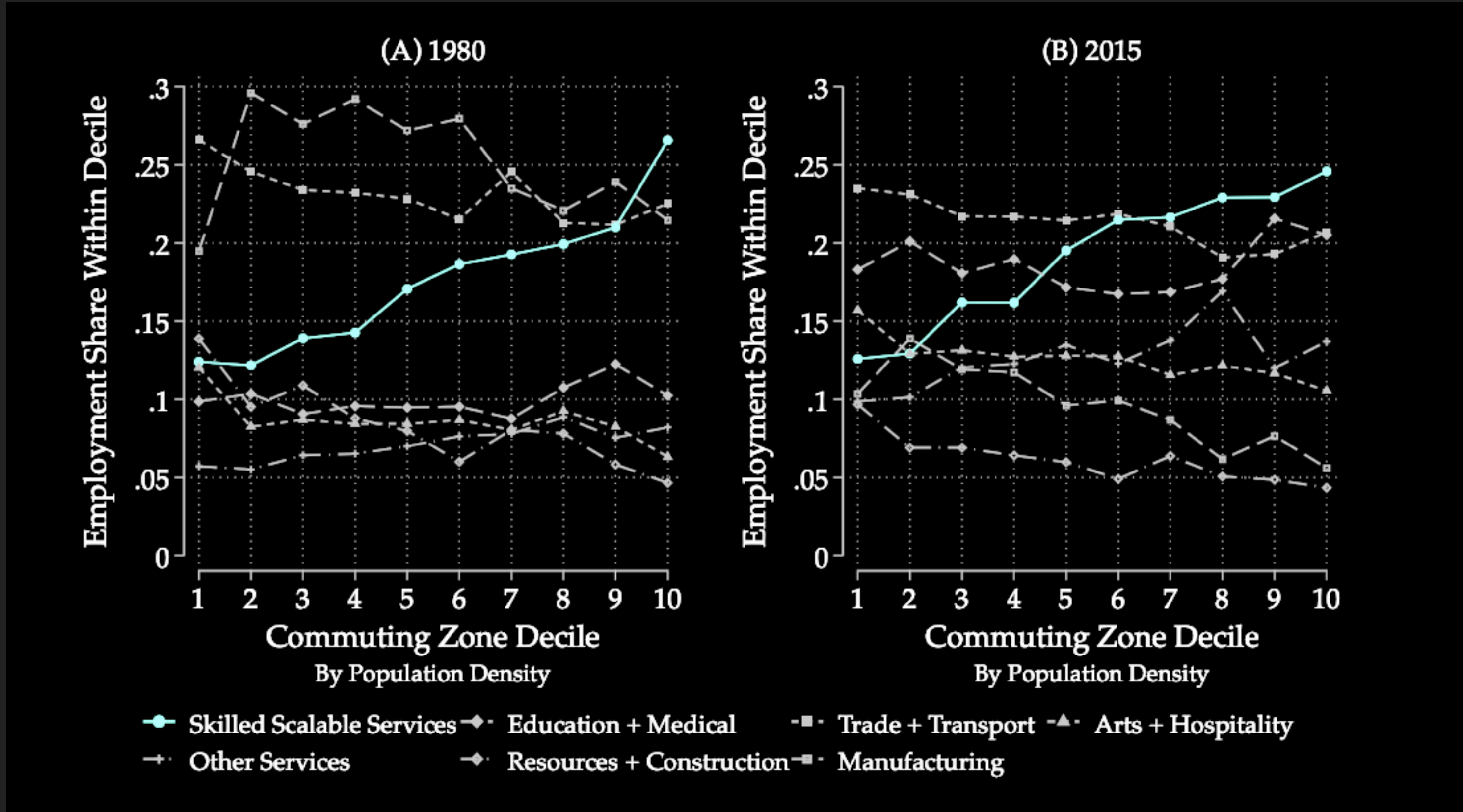
(TRADABLE) SERVICES



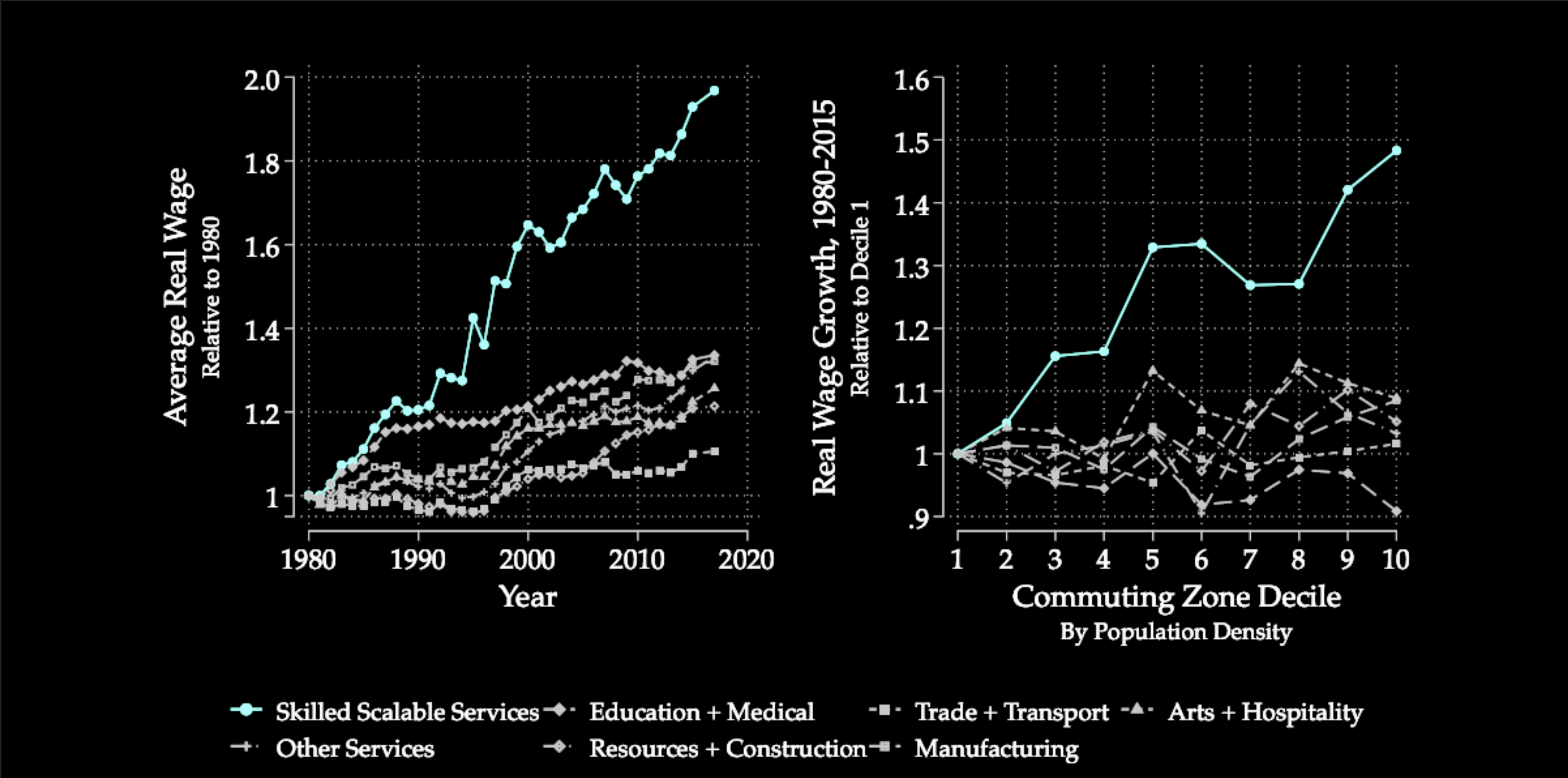
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(TRADABLE) SERVICES



(TRADABLE) SERVICES



(TRADABLE) SERVICES

- ▶ Most of macro and trade has been invented with goods in mind.
 - ▶ Yet, the U.S. is a service economy – 90% of employment is in services.
- ▶ These services are radically different from goods:
 - ▶ Marginal cost often very small relative to fixed costs
 - ▶ More concentrated in space than any other industry
 - ▶ Defining the most successful locations in the world economy today
- ▶ Yet, there is hardly any empirical or theoretical work on them

(TRADABLE) SERVICES

- ▶ The last half decade has brought in new work and tools to think about these services
- ▶ They are defined by: scalability, skill-intensity, “footlooseness”, knowledge spillovers
- ▶ No workhorse model exists, measurement is difficult, but:
 - ▶ New techniques to model key features: Garicano+Rossi Hansberg?
 - ▶ New Data: VAT data, cell phone data, credit card data

(TRADABLE) SERVICES LITERATURE

- ▶ *Beginnings*: Markusen 1989, Melvin 1998, Francois 1990
- ▶ *Headquarters*: Acosta and Lyngemark; Strauss-Kahn Vives
- ▶ *Offshoring*: Antras, Garicano, Rossi-Hansberg, Amitit and Wei, Crino
- ▶ *Tradable Services/Tasks*: Jensen and Kletzer; Gervais Kletzer; Grossman and Rossi-Hansberg; Ariu
- ▶ *Services, Space, Inequality*: Eckert 2019; Eckert Ganapati Walsh 2020; Hsieh and Rossi-Hansberg; Liao 2012; Autor Dorn 2013

(MULTIPLANT) FIRMS IN SPACE

- ▶ Interest in location decisions of multiplant firms
 - ▶ The most important firms in the US economy have many establishments
- ▶ Location decisions often interdependent
- ▶ Fast growing exciting literature on spatial linkages between plants:
 - ▶ *Within countries*: Hsieh and Rossi-Hansberg; Oberfield, Rossi-Hansberg, Trachter, Sarte; Acosta and Lyngemark; Gumpert Steimer Antoni
 - ▶ *Across countries*: Arkolakis, Eckert(, Shi); Tintelnot; Antas Fort Tintelnot

SPATIAL GROWTH/DYNAMICS

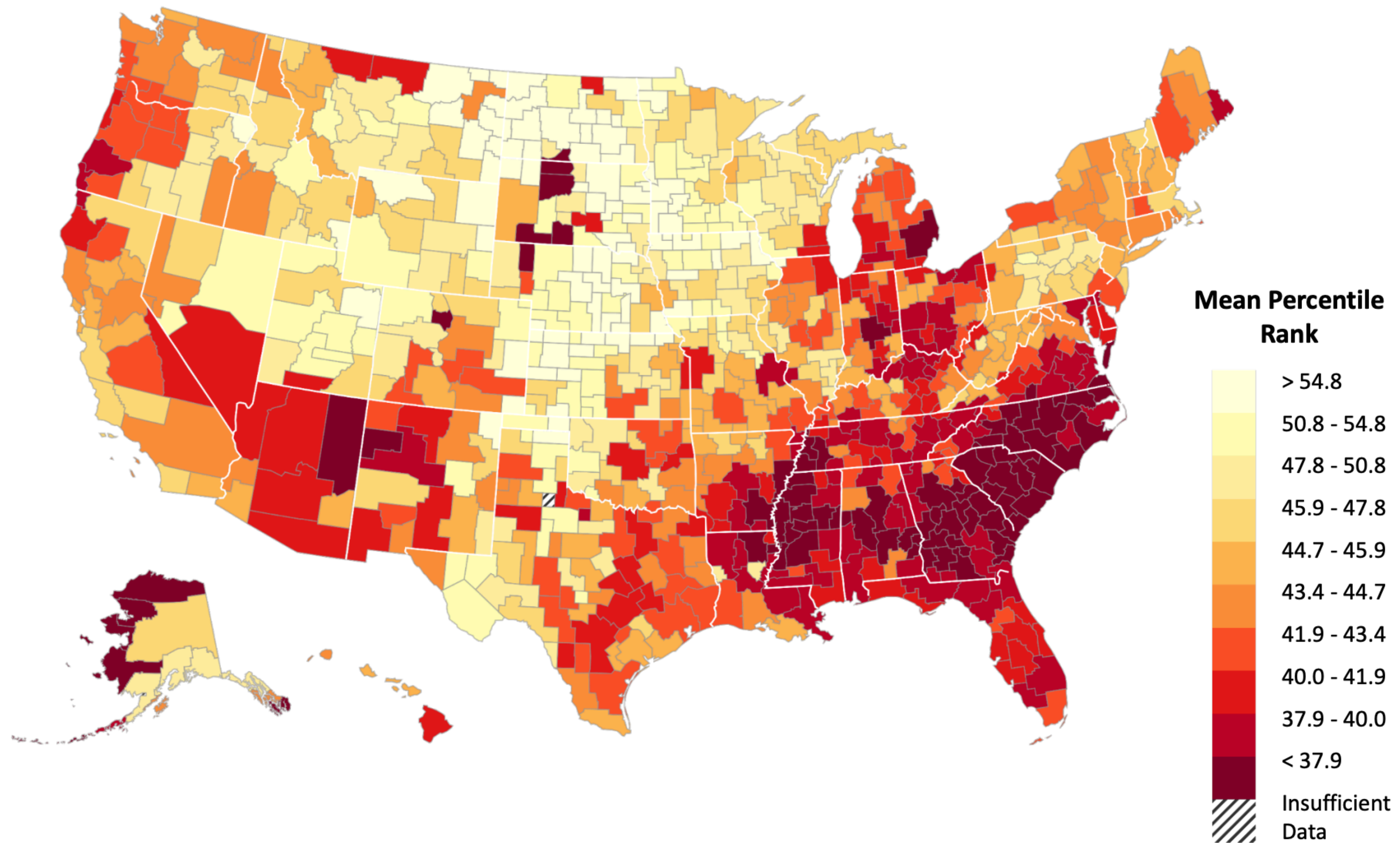
- ▶ Growth is *extremely* unequal across regions in the United States
- ▶ Yet modeling *spatial growth* is difficult when worker can move (black holes!)
- ▶ Recently, we have seen great advances in modeling+thinking about spatial growth:
 - ▶ Desmet and Rossi-Hansberg 2014
 - ▶ Nagy 2020
 - ▶ Peters (2020) (also see Walsh 2020)

NEIGHBORHOOD EFFECTS

- ▶ Bombshell empirical work by Chetty and Hendren in 2018
- ▶ However, old stylized literature on nexus between local skill composition, income, and education outcomes
 - ▶ See Benabou (1993, 1996) and Fernandez and Rogerson (1996, 1998)
- ▶ Wave of new work on neighborhood effects using the Chetty estimates:
 - ▶ Guerrieri and Fogli; Eckert and Kleineberg; Zheng; Agostinelli, Doepke, Sorrenti, Zilibotti

The Geography of Intergenerational Mobility in the United States

Predicted Income Rank at Age 30 for Children with Parents at 25th Percentile



PATH DEPENDENCE IN SPACE

- ▶ Old, influential idea: History (sometimes) matters for the location and sizes of cities and neighborhood segregation patterns within cities.
 - ▶ Empirical Work: Davis and Weinstein (2002); Bleakely Lin (2012); Michaels and Rauch (2018); Hornbeck and Keniston (2017)
 - ▶ New Structural work using quantitative spatial economic models: Ahlfeldt, Redding, Sturm, Wolf (2015); Nagy (2020)
 - ▶ New *dynamic* quantitative spatial economics framework by Allen and Donaldson (2020)

SPATIAL CONCENTRATION AND MARKET POWER

- ▶ If you choose the location small enough a firm is always a monopolist/monopsonist
 - ▶ Space and market power are tightly connected
- ▶ Trend of increasing concentration in the US (Eeckhout et al) has spatial side:
 - ▶ Rossi-Hansberg, Trachter, Sarte; Hsieh Rossi Hansberg
- ▶ Labor market power: Berger, Herkenhoff, Mongey; Stansbury, Schubert, Taska
- ▶ Much more work needed!

SPACE AND INEQUALITY

- ▶ Inequality between workers and between regions has risen immensely since 1980
- ▶ A lot of new work addresses these two trends, sometimes jointly.
 - ▶ Regional Divergence: Berry and Glaeser, Beaudry Doms Lewis, Moretti (2012), Diamond (2016), Gianonne (2019), Eckert (2019), Eckert Ganapati Walsh (2020); Eckert Peters (2020); Rubinton (2020)
 - ▶ Polarization: Davis Mengus Michalski; Eeckhout Pinheiro Schmidheiny; Autor Dorn
 - ▶ Other topics: Bilal (Unemployment); Ganong and Shoag+Hsieh Moretti (Housing Constraints and Implications),...many more

THE EFFECTS OF TRANSPORTATION INFRASTRUCTURE

- ▶ Booming literature on understanding the welfare implications of changing the spatial linkages between regions via trains, buses/roads, ports, airports, internet.
 - ▶ *Railroads*: Vogel; Donaldson; Donaldson and Hornberg; Heblich, Redding, Sturm
 - ▶ *Ports*: Ducruet, Juhasz, Nagy, Steinwender; Brancaccio, Kalouptsi, Papageorgiou
 - ▶ *Buses/Roads*: Tsivanidis; Balboni; Santamaria; Michaels
 - ▶ *Airports*: Giroux; Bloningen and Cristea; Campante, Yanagizawa-Drott
 - ▶ *Internet*: Kolko 1999; Liao Tian; Porcher; Akerman, Mogstad, Gaarder
 - ▶ *Commuting*: Monte, Redding, Rossi-Hansberg; Severen; Flemming

YOUR OWN PROJECT

- ▶ We will spend 15 minutes every Monday discussing your ideas
- ▶ I would love for this class to produce several papers in the next 12 months
- ▶ You can use your project for the final presentation; groups are encouraged
- ▶ Email me anytime to pitch me ideas, learn about data sources etc.

SOME GREAT DATA SOURCES

- ▶ IPUMS US Census:
- ▶ NHGIS
- ▶ County Business Patterns
- ▶ LBD
- ▶ Cell Phone Data
- ▶ Migration data: CPS, IRS, NLSY

BROAD ROADMAP

- ▶ Shoulders of Giants: Ricardo, Heckscher, and Ohlin
 - ▶ Have to have seen; some lasting lessons
- ▶ Monopolistic Competition and the Gravity Equation
- ▶ The Spatial Economics Framework
- ▶ Some topics in spatial Economics,
 - ▶ Potential guest lectures: Bilal, Walsh, Peters (?)
- ▶ Potential Idea: Reading Group around spatial topics