

# “New trade”, “new geography”, and the troubles of manufacturing

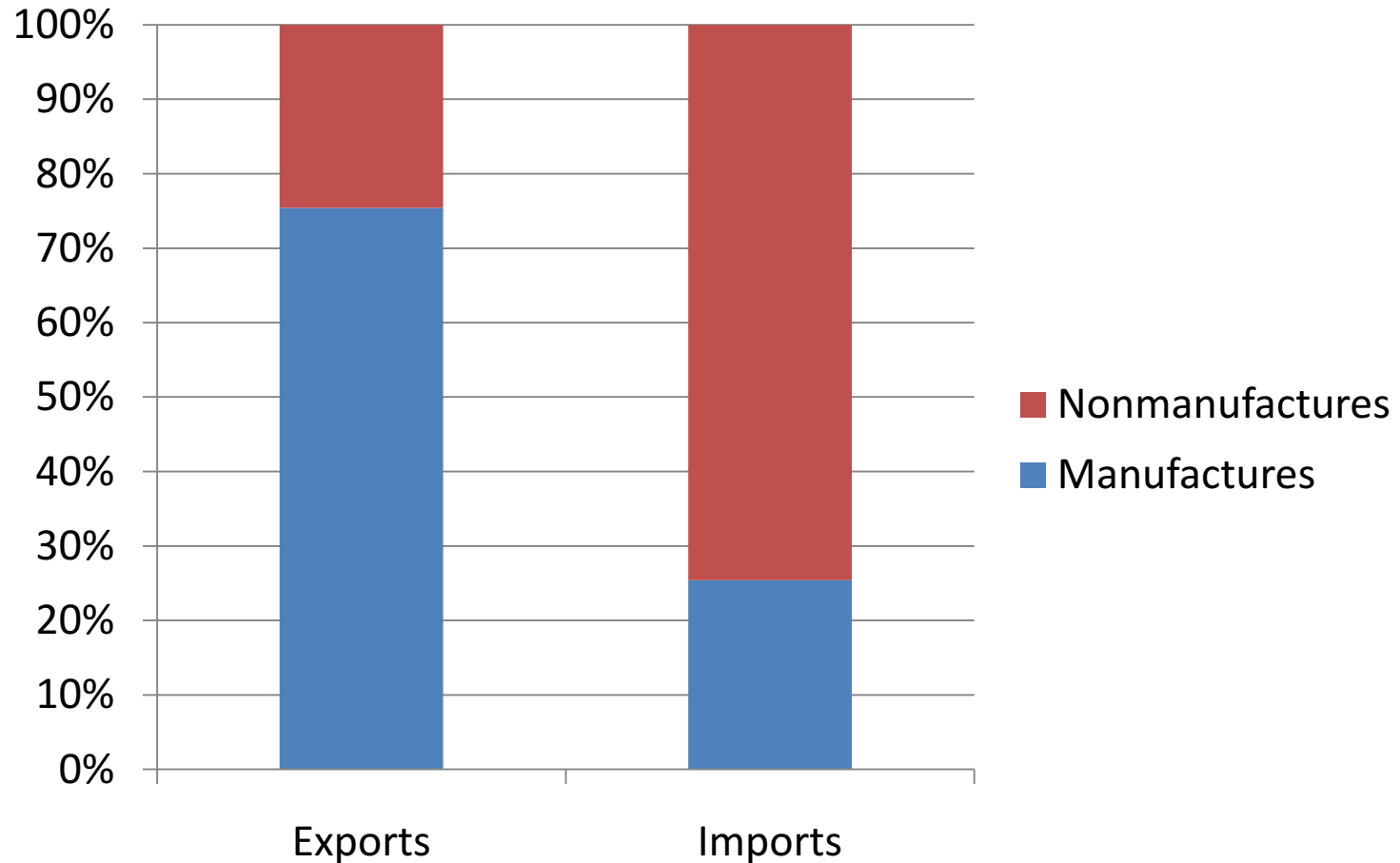
Paul Krugman 8/12/08

## Outline:

1. The original motivations of new trade theory
2. From new trade to new geography
3. Everything old is new again – and that's the problem

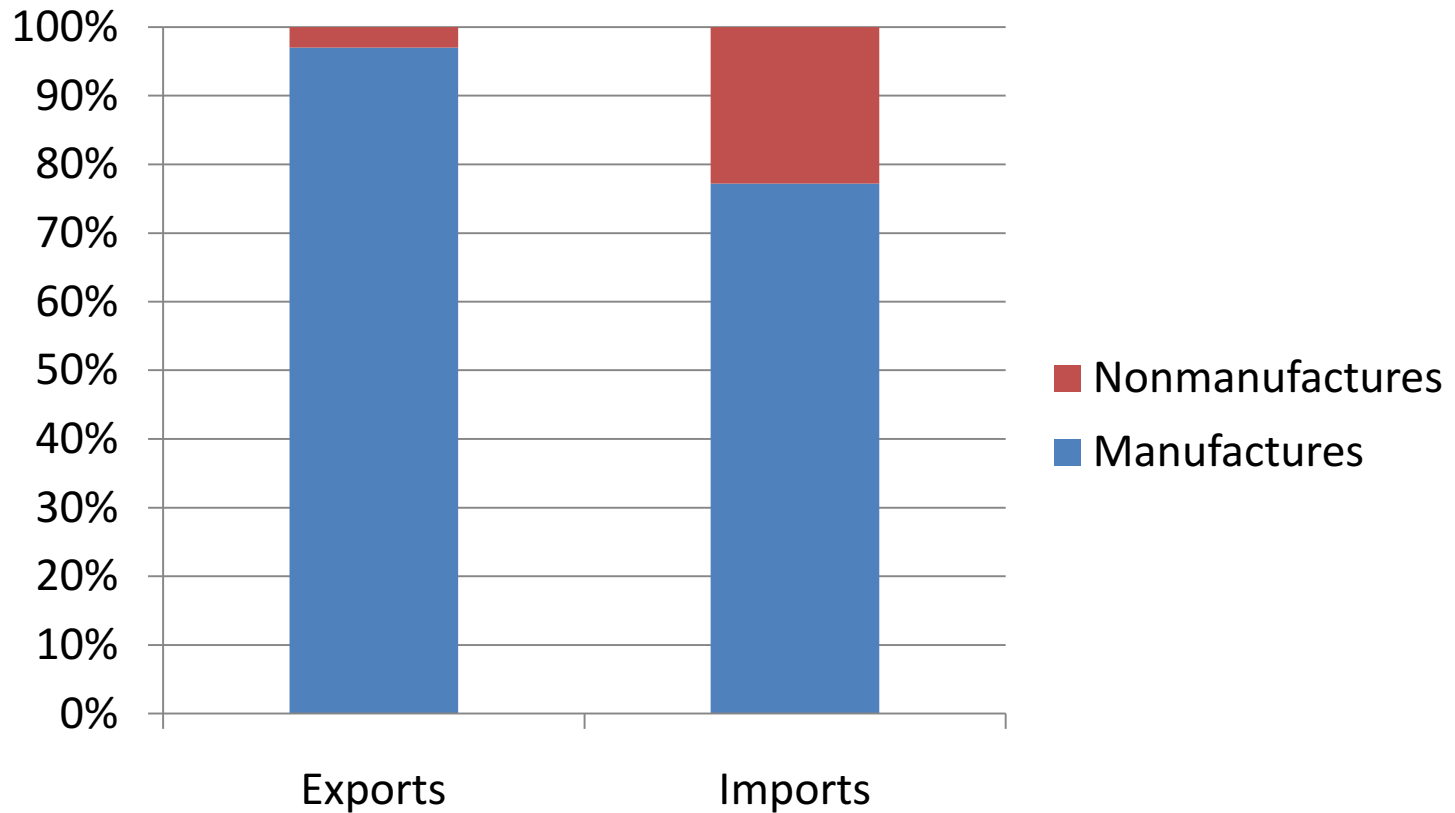
Once upon a time, comparative advantage looked pretty good as a description of trade ...

**Composition of British trade circa 1910**



... but over time it got hard to see much difference between what countries exported and what they imported

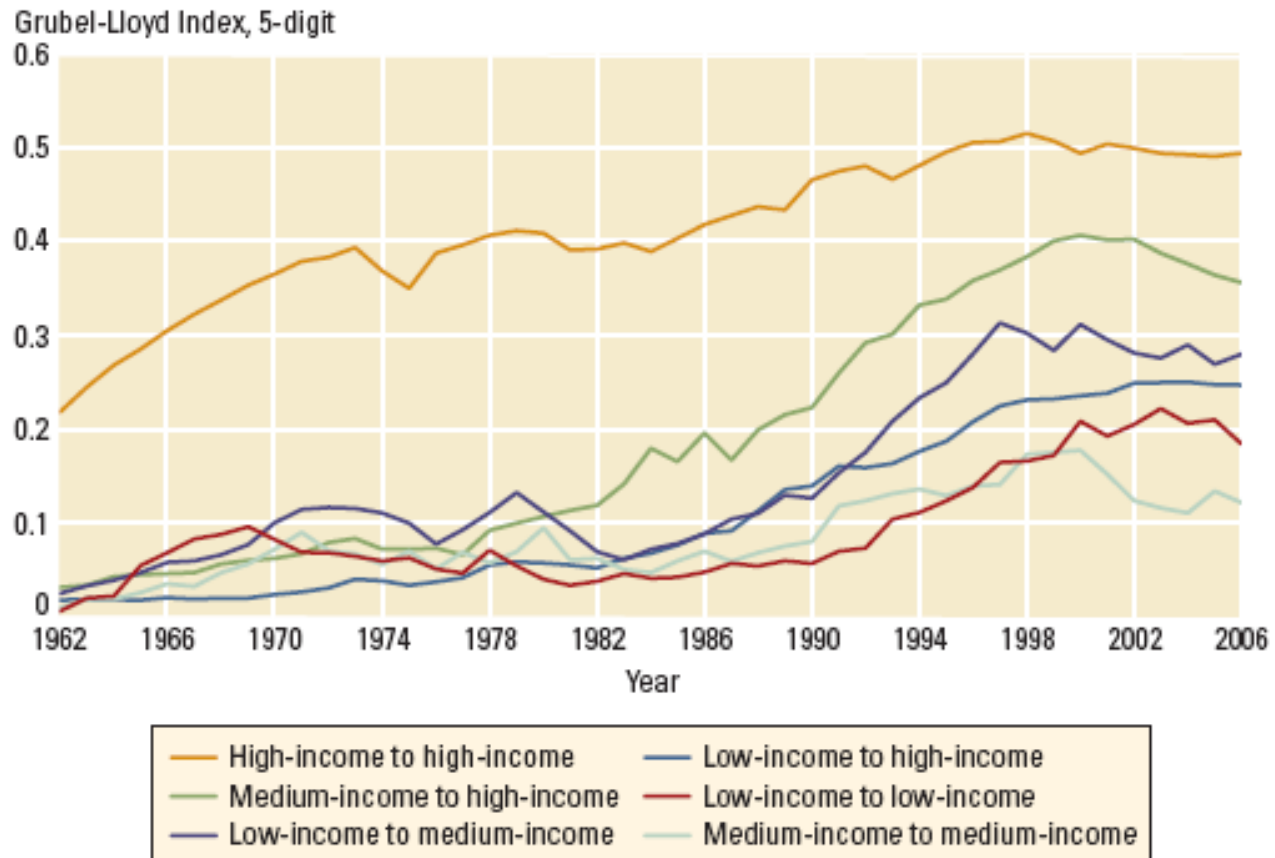
**Composition of British trade in the 1990s**



Furthermore, trade increasingly seemed to be between similar countries.



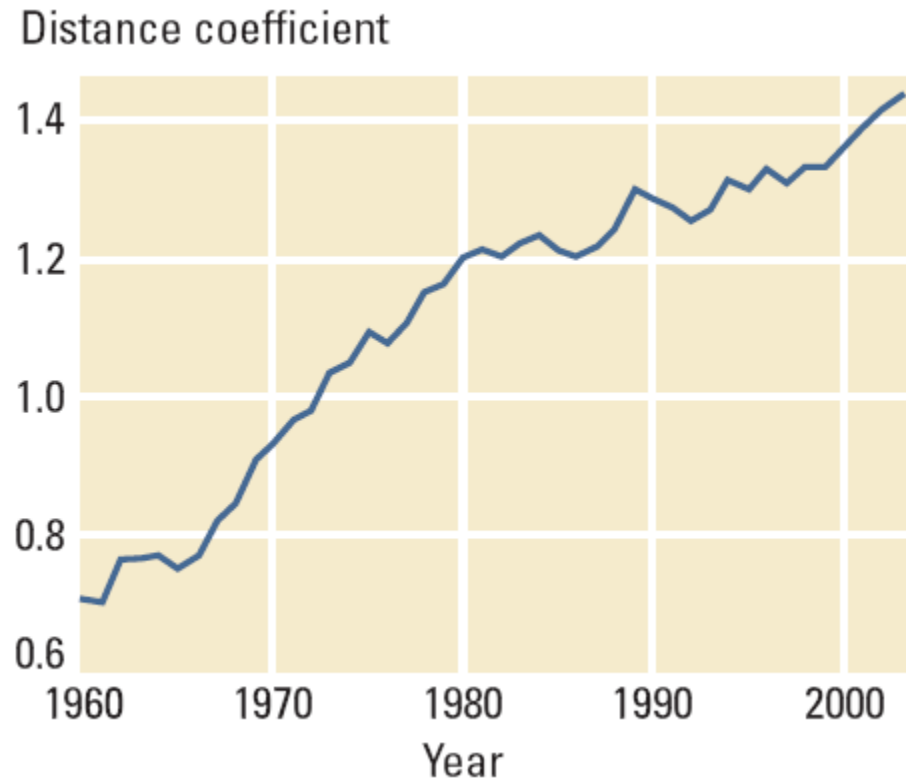
# More broadly, rise of intraindustry trade



Source: Brülhart 2008 for this Report.

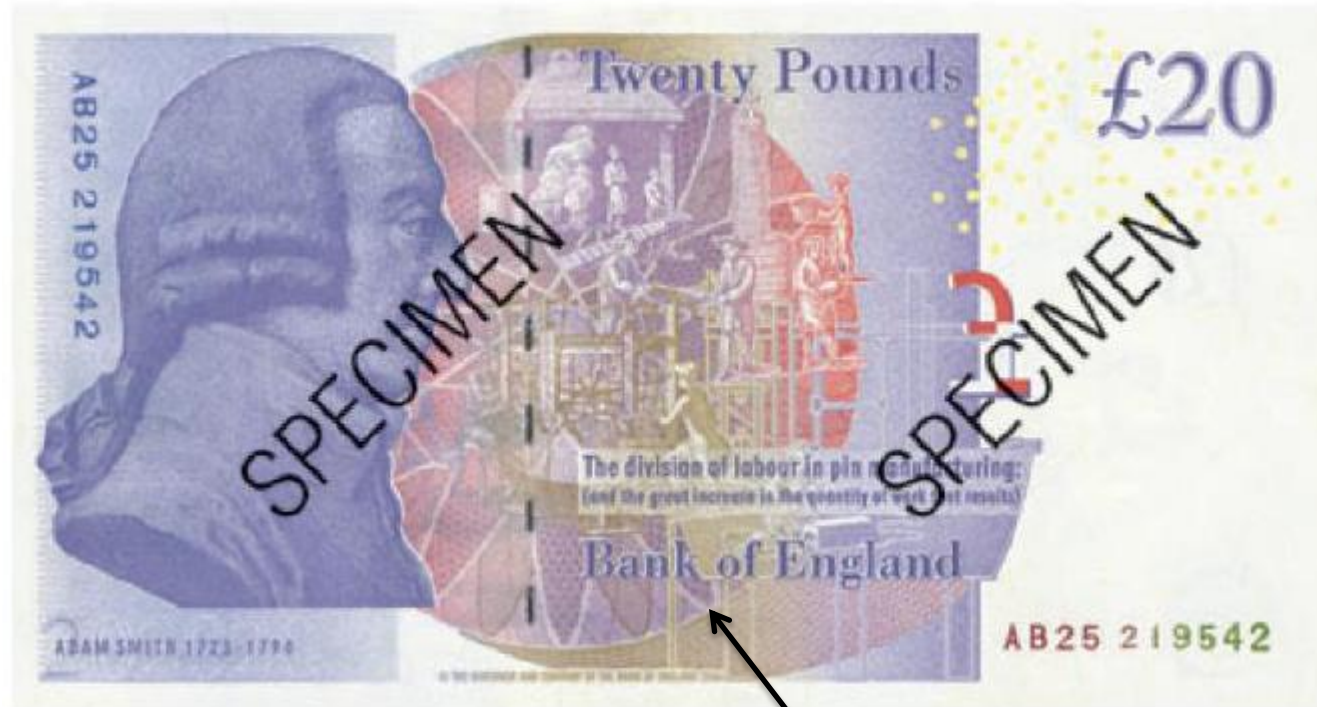
Note: The Grubel-Lloyd index is the fraction of total trade that is accounted for by intraindustry trade.

## And growing localization of trade



What was going on?

Why not ask Adam Smith?

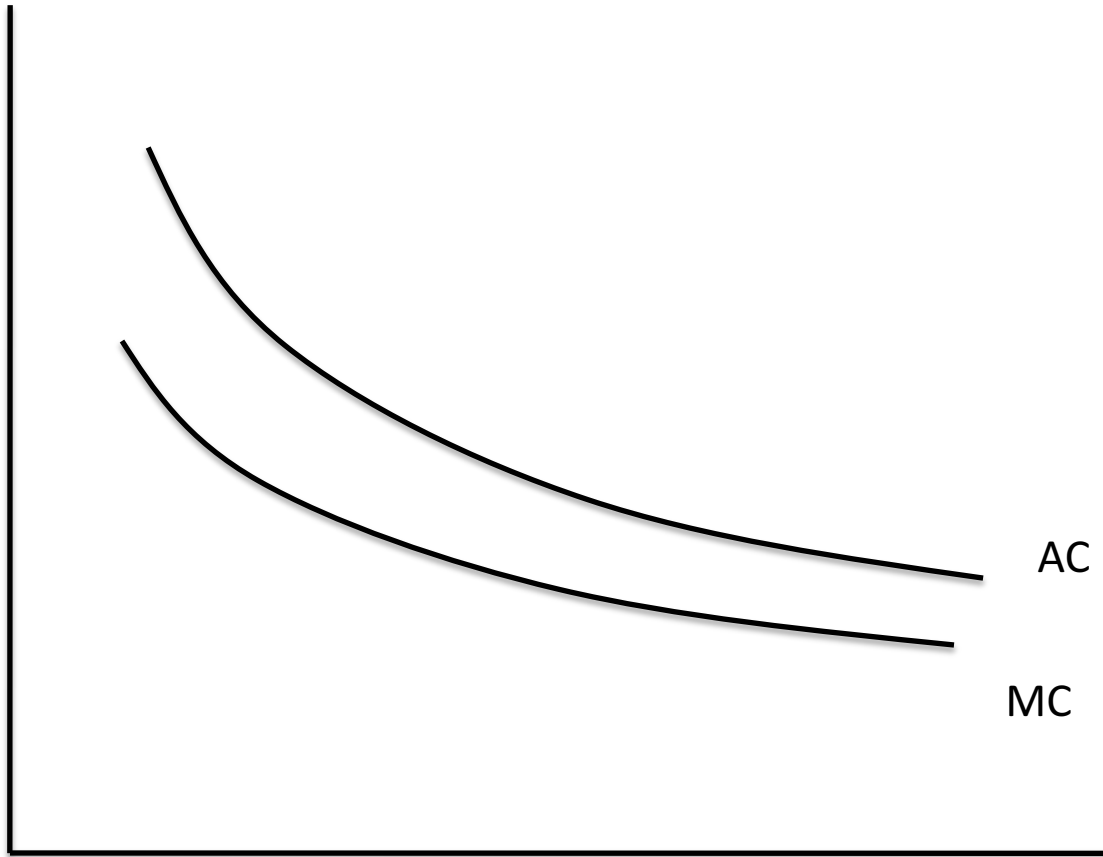


The pin factory



# The problem of market structure

Price, cost

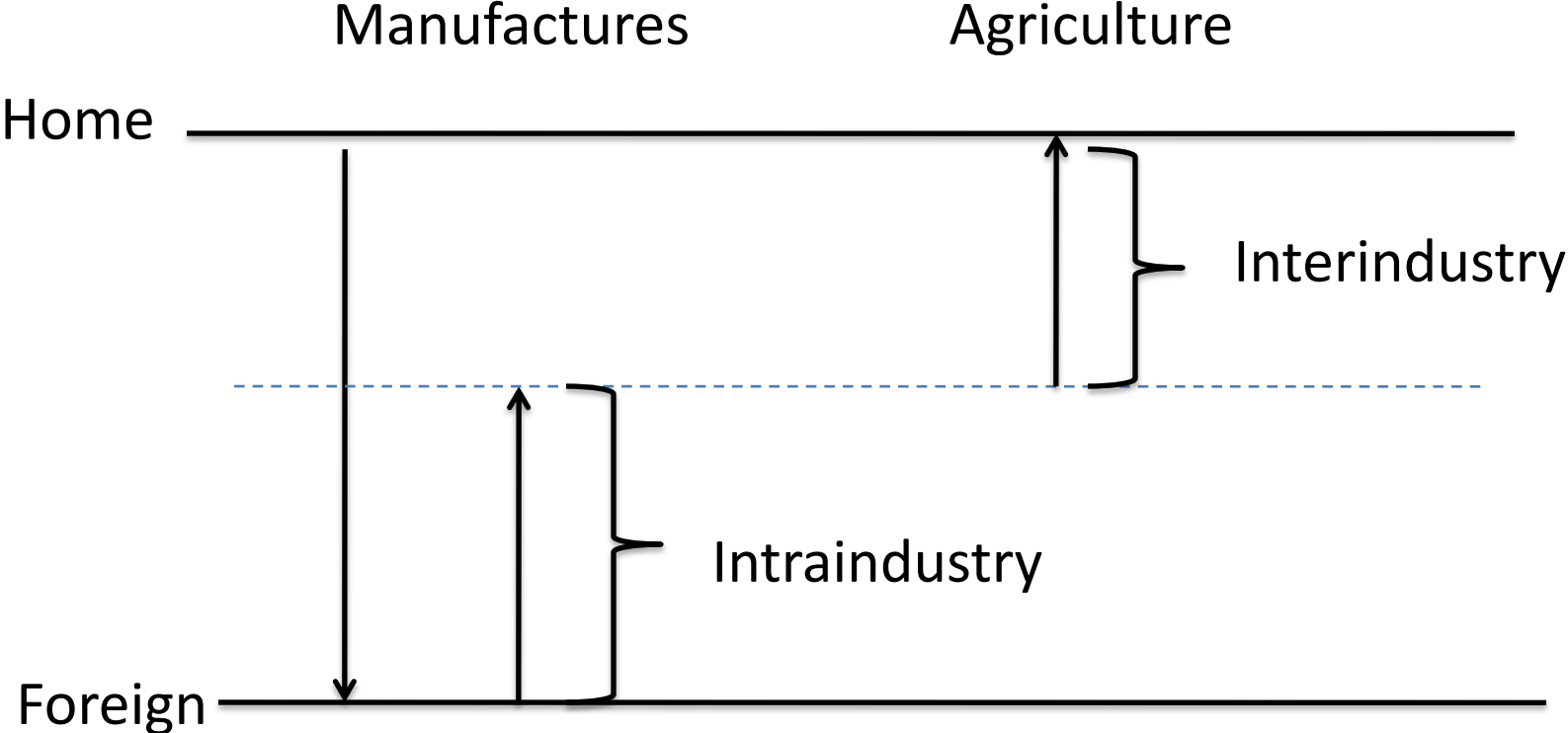


Quantity

My rules for research:

1. Listen to the Gentiles
2. Question the question
3. Dare to be silly
4. Simplify, simplify

Once the problem of market structure had been finessed, the combination of increasing returns and comparative advantage provided a compelling explanation of trade patterns:



What have we learned since 1985?

1. The return of gravity
2. System-level analysis applied to comparative advantage (e.g., Eaton-Kortum)
3. Firms in international trade (e.g., Melitz)

From trade to geography: The home market effect  
(cheating version)

Home market size  $S$ , Foreign market size  $S^*$

Fixed cost of opening plant  $F$ , transport cost  $\tau$  per unit

Assume  $S > S^*$

If  $F > \tau S^*$ , minimize total costs by having only one plant located in Home, from which you export

Obvious point (which it took a decade to notice): if location decisions by firms affect market size, possibility of a self-reinforcing process. No need to *assume* agglomeration economies, we can derive them – and see that they don't always prevail

## Core-periphery model (strategically sloppy version)

Let  $S$  be size of overall market,  $\mu$  be share of “footloose” workers in overall demand,  $\tau$  be unit transport cost. Fixed costs  $F$ . Assume “rooted” workers evenly divided between two locations

Is a concentration of all footloose workers in one location an equilibrium? Sales to “periphery” are  $S(1-\mu)/2$ . Cost of opening a new plant are  $F$ . So concentration in “core” sustainable only if

$$F > \tau S (1-\mu)/2 \text{ or } F/S > \tau (1-\mu)/2$$

$F/S$  is economies of scale,  $\tau$  transport costs,  $\mu$  the importance of industries not tied to immobile resources

# The case of the U.S. manufacturing belt

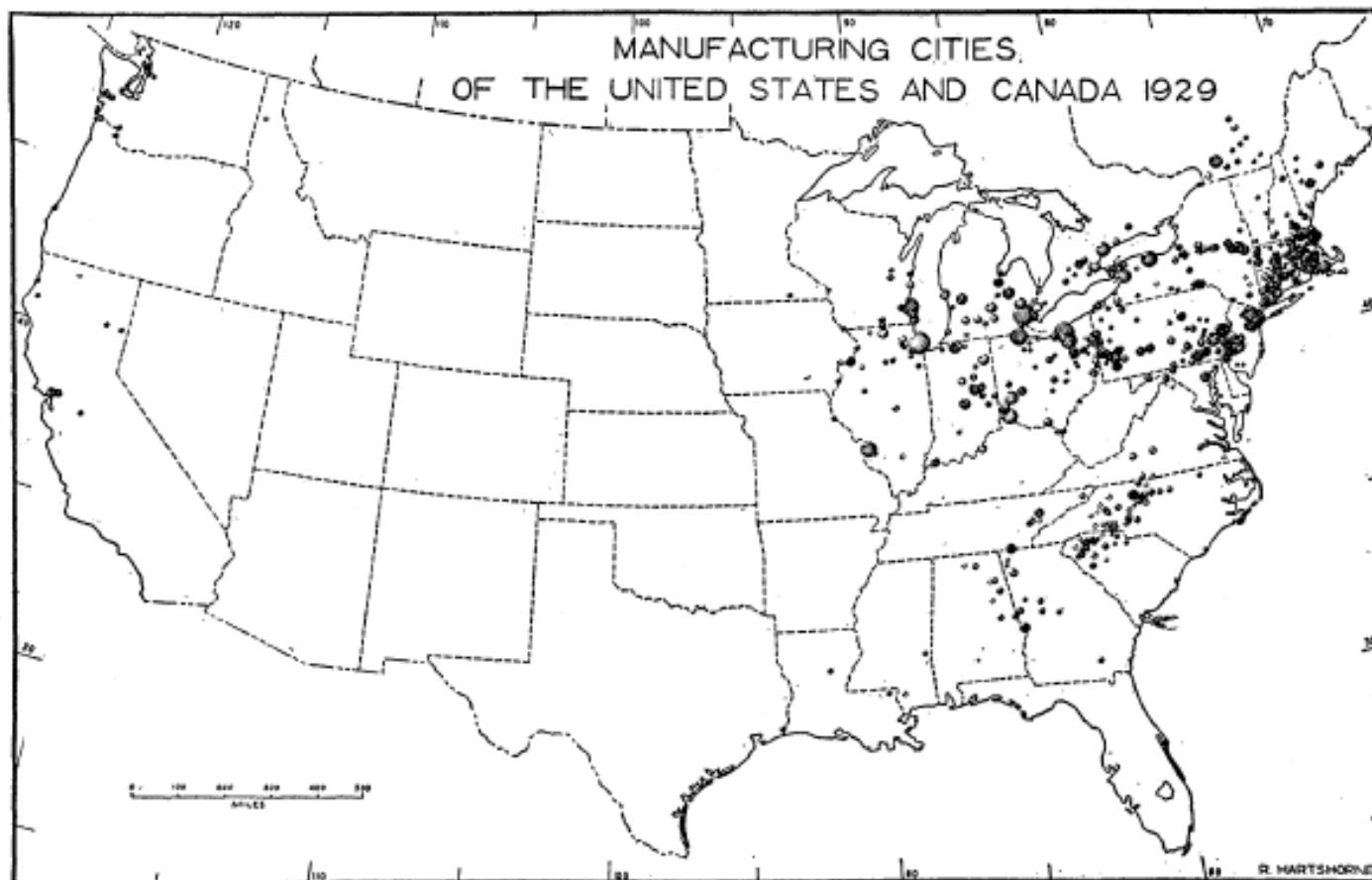




fig. 2



What formed the belt?

Meyer (1983): “The critical time occurred in the antebellum years; regions had to develop industrial systems by about 1860 to become part of the belt and to participate significantly in late nineteenth century industrialization.”

What happened circa 1850-1860?

The criterion:  $F/S > \tau (1 - \mu)/2$

Large-scale production => higher  $F/S$

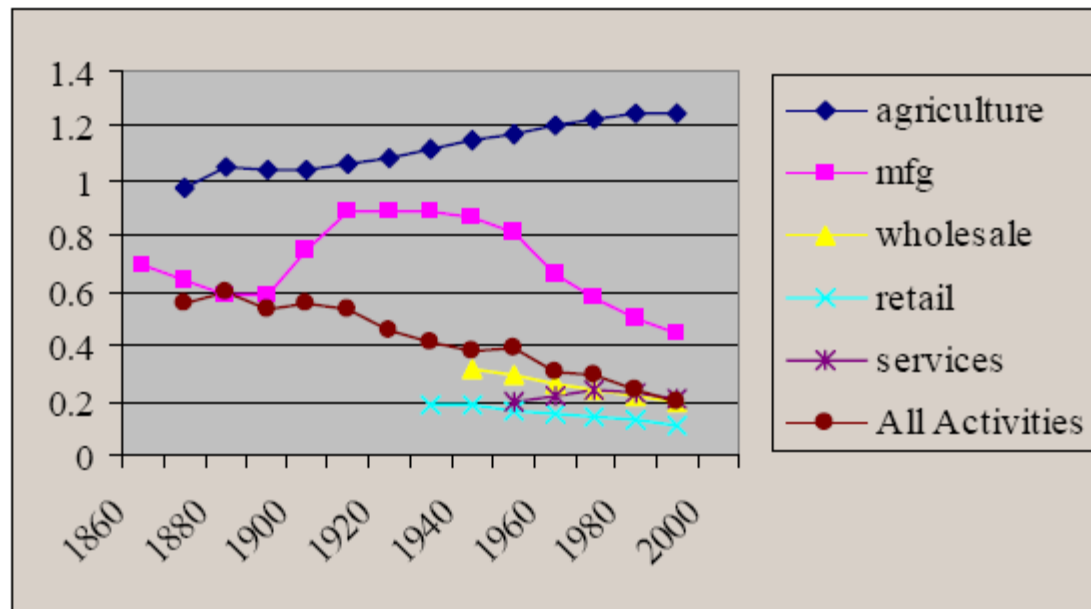
Railroads => lower  $\tau$

Industrialization => higher  $\mu$

So America went through a sort of “phase transition”

# Related models can also explain regional specialization

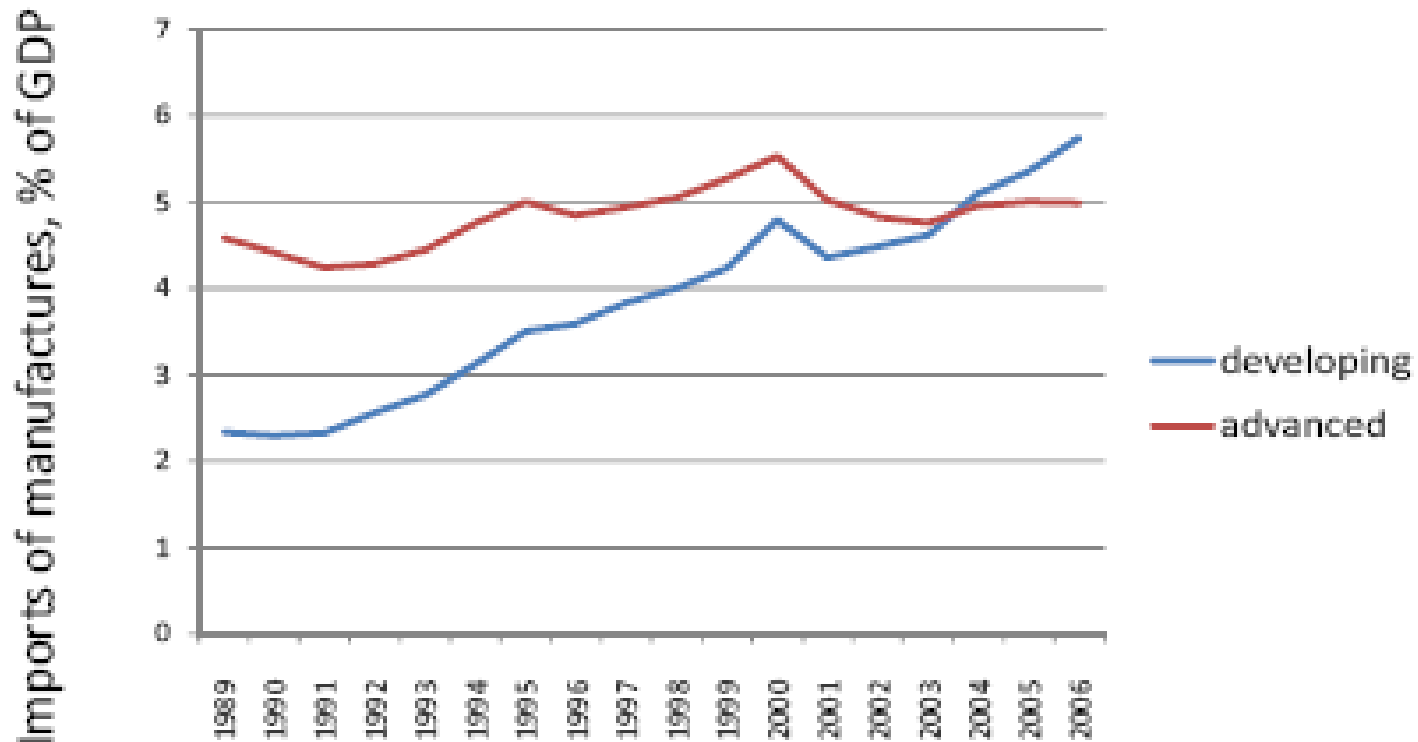
Figure 2  
U.S. Regional Specialization, 1860-1990



Source: Kim (1995, 1998). Index of regional specialization is based on Krugman (1991).

Rise of specialization to about 1925 – but what about later?  
Is the world becoming more classical again?

Maybe – and maybe in trade too, where North-South trade, presumably reflecting comparative advantage, is on the rise



So increasing returns may represent the wave of the past, not the future – but that's also important to know

Problems facing workers in advanced economies:

Increasing inequality

Decline of “good jobs”

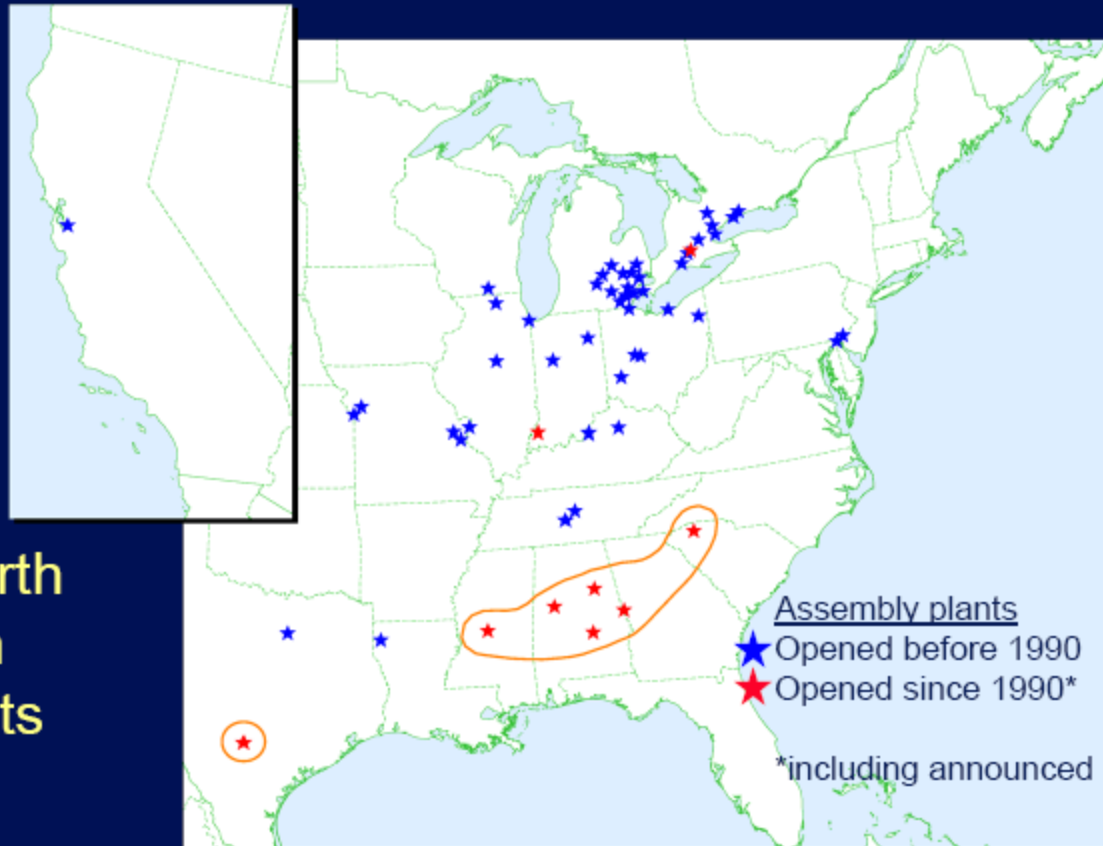
To some extent, both may be explained by the *decline* of increasing returns as a force in the world economy

Consider the case of the traditional US auto industry

From Klier and Rubinstein (2006)

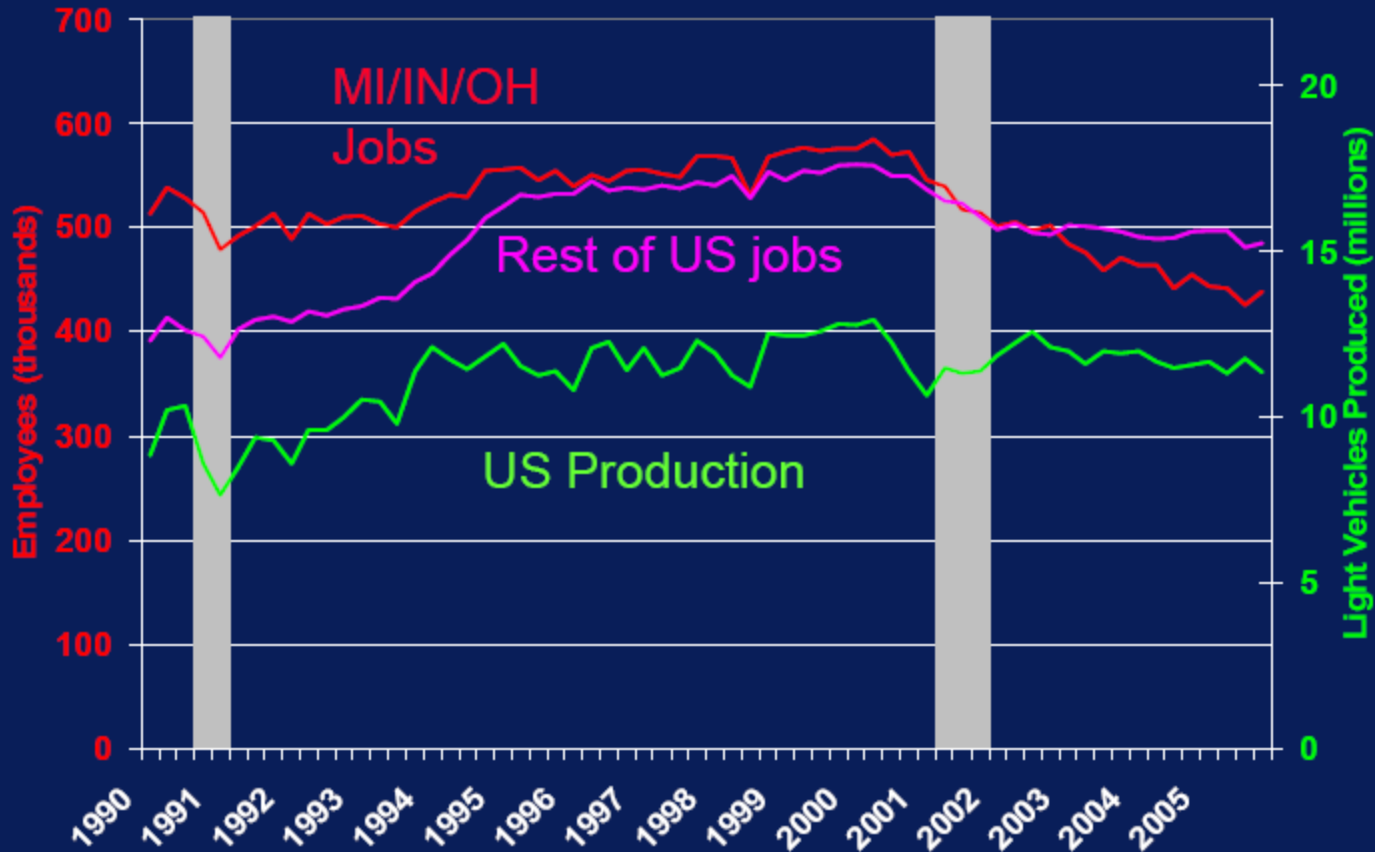
## Evolution of assembly geography: 2006+

7 of 9 North  
American  
transplants  
in Deep  
South



# Jobs decline is concentrated in the Midwest

## US & Michigan/Indiana/Ohio employment and US production



Conclusion:

Increasing returns have been a powerful force shaping the world economy

That force may actually be in decline

But that decline itself is a key to understanding much of what is happening in the world today