SAPIENZA
UNIVERSITÀ DI ROMA

European Economic Integration
EPOS – Master in Advanced Economics
Giovanni Di Bartolomeo

Europe's economic geography

Class overview

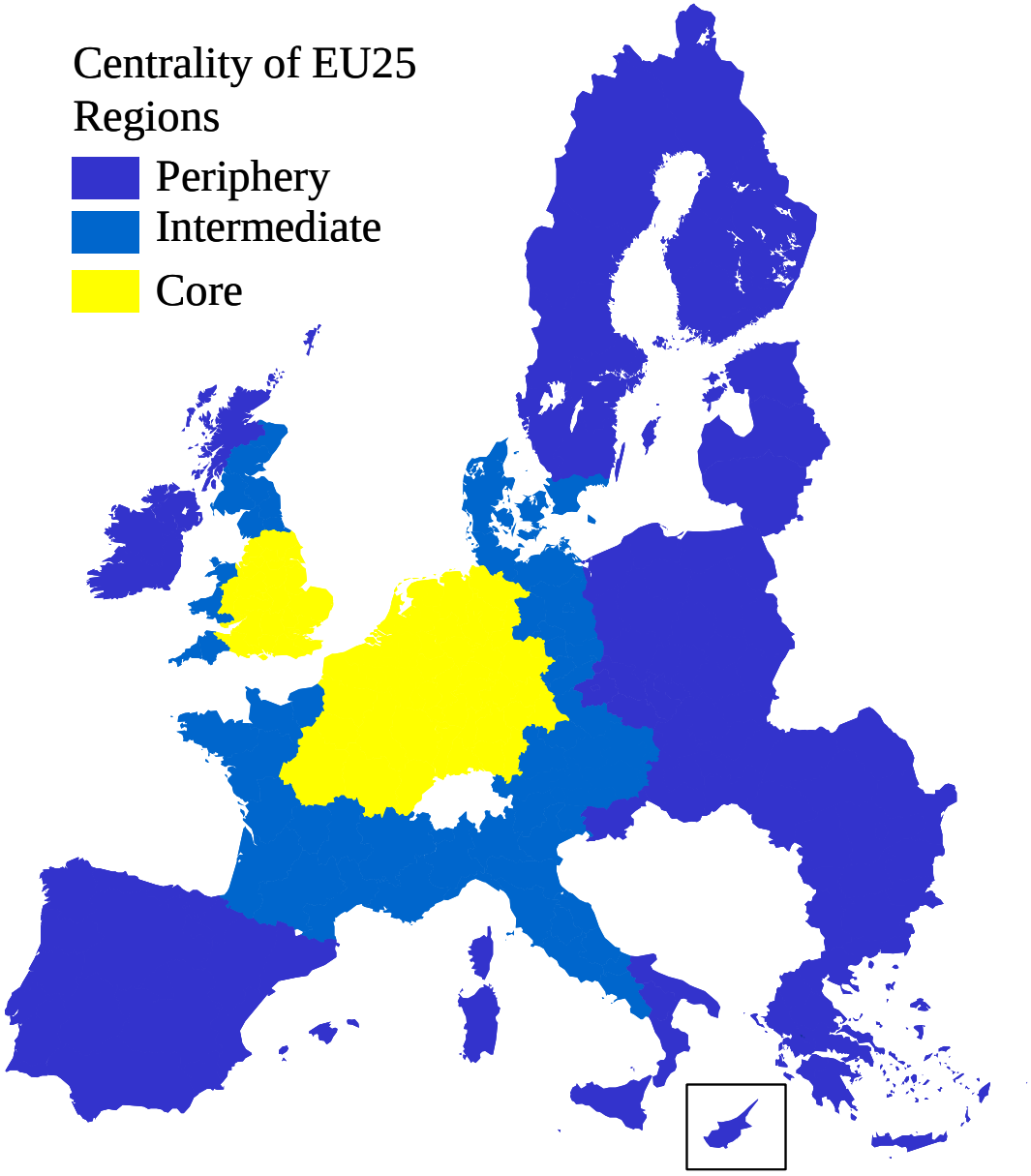
1. EU geography
2. Comp. advantage
3. NEG theory

- Slides are largely based on Baldwin-Wyplosz's ones (textbook)

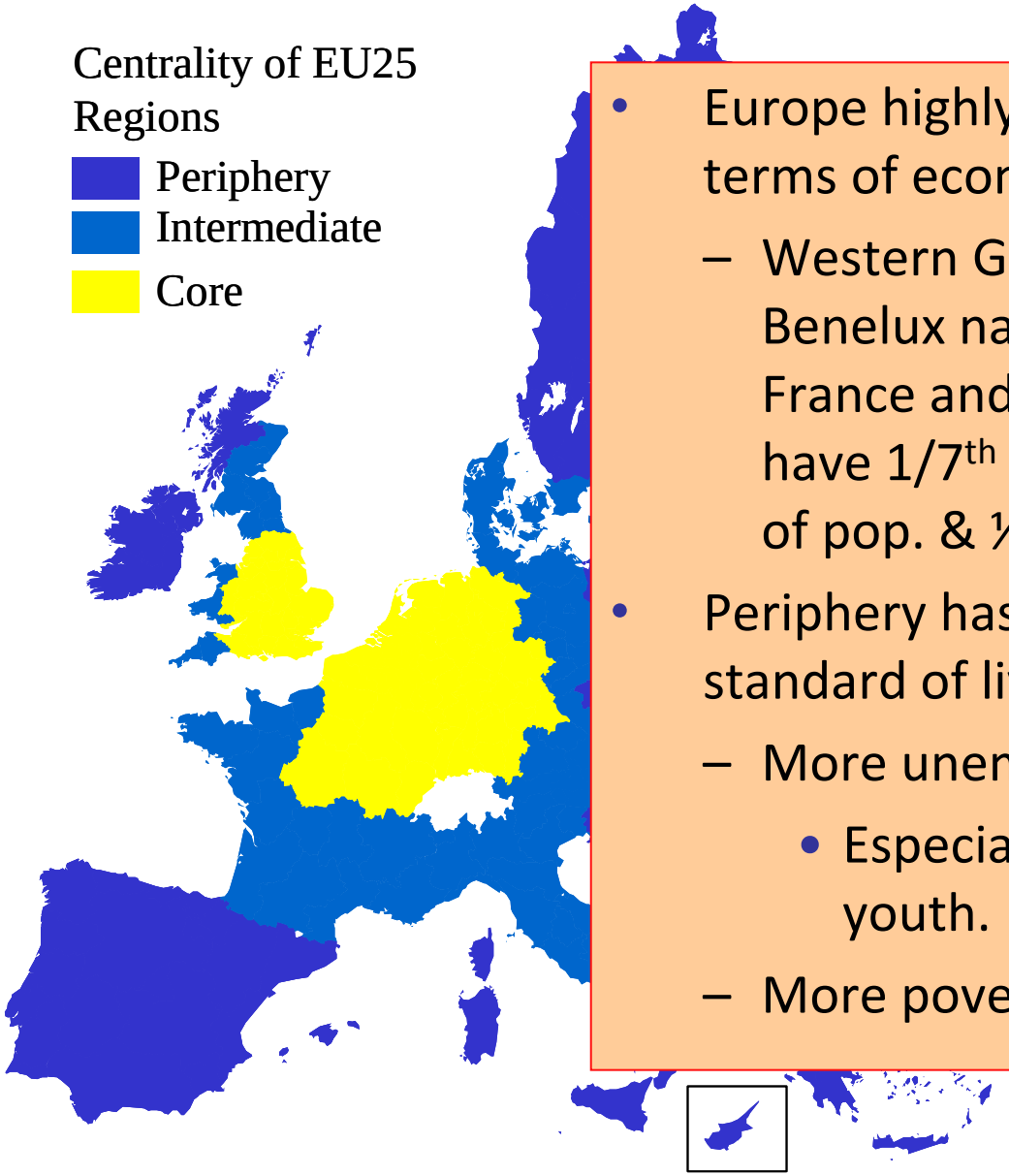
European regions

- Concern for Europe's disadvantaged regions has always been part of EU priorities.
  - In Treaty of Rome preamble.
- Pre-1986, most spending on regions was national
  - Rural electrification, phones, roads, etc.
- Entry of Spain & Portugal created voting-bloc in Council (with Ireland and Greece) that induced a major shift in EU spending priorities, away from CAP towards poor-regions.
- "Structural spending" now about 1/3 EU budget.

Europe's Economic Geography: Facts

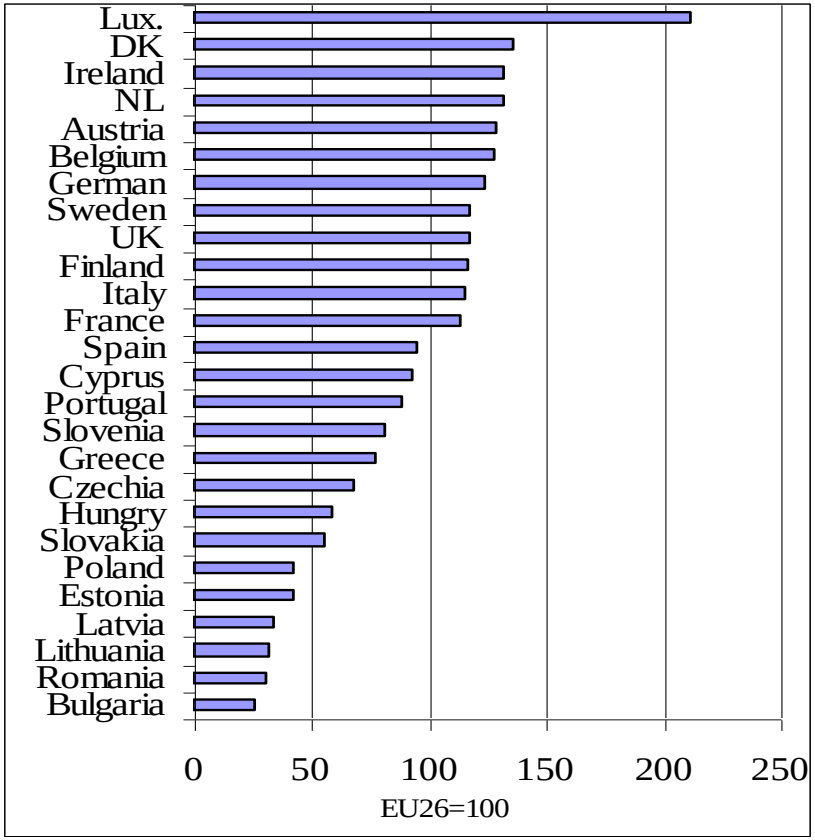


Europe's Economic Geography: Facts



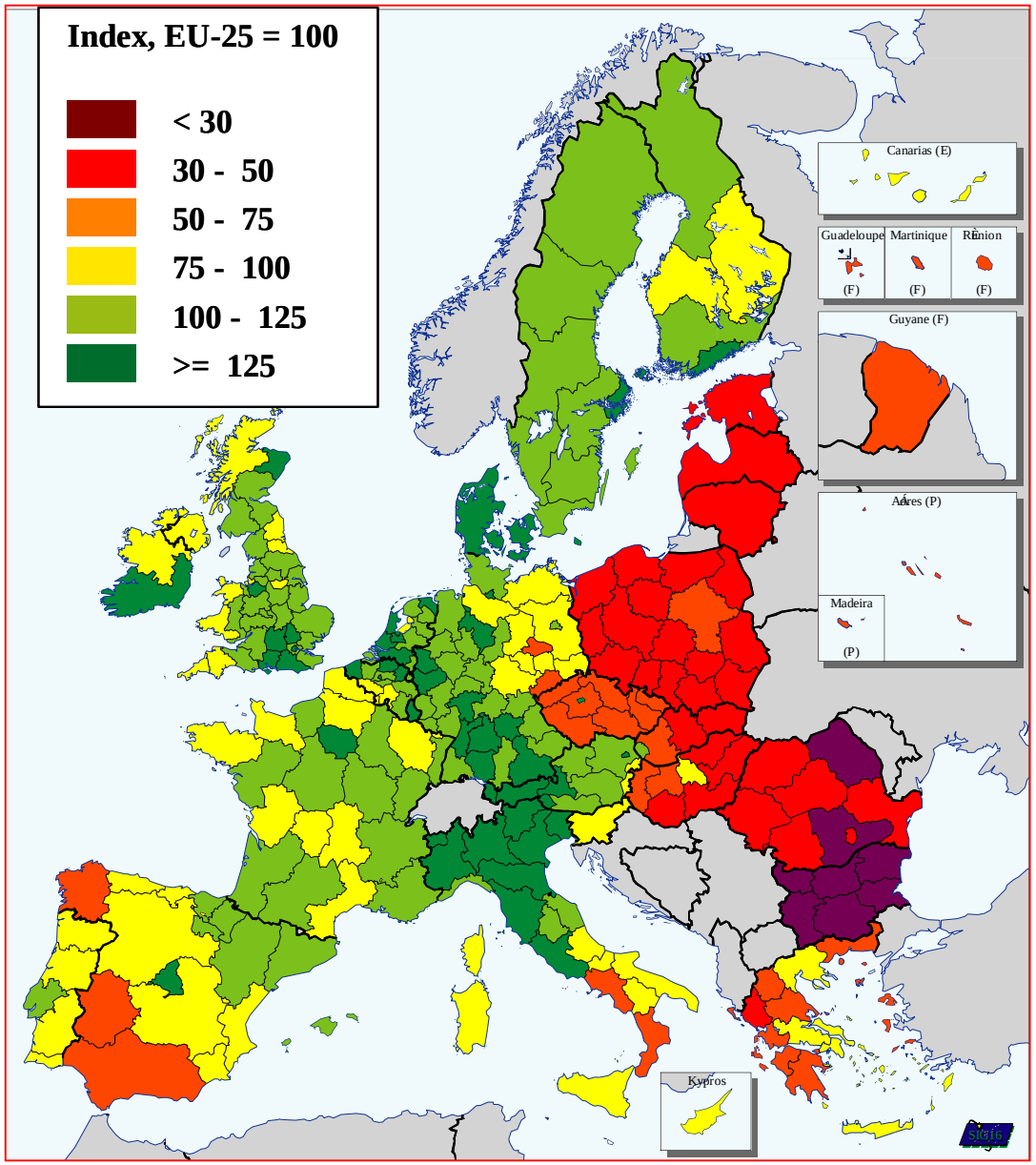
- Europe highly centralised in terms of economic activity.
  - Western Germany, Benelux nations, N.E. France and S.E. England have 1/7th land, but 1/3rd of pop. & ½ GDP.
- Periphery has lower standard of living.
  - More unemployment.
    - Especially among youth.
  - More poverty.

Geographic income inequality

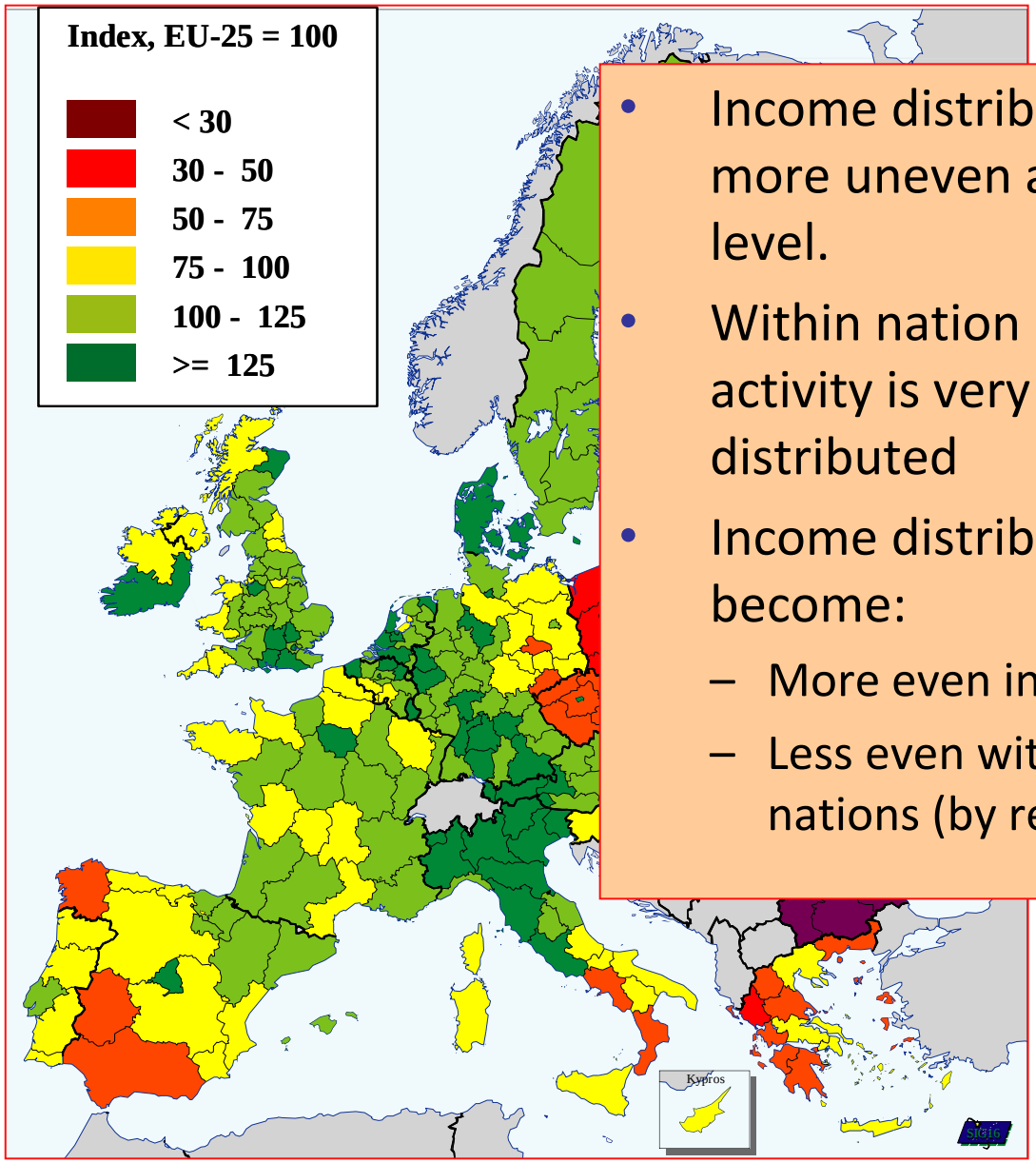


- Very uneven income distribution, geographically.
- 1999 income/pop by nation.
- Luxembourg is 110% richer than average.
- Bulgaria only 26% of average.

Geographic income inequality



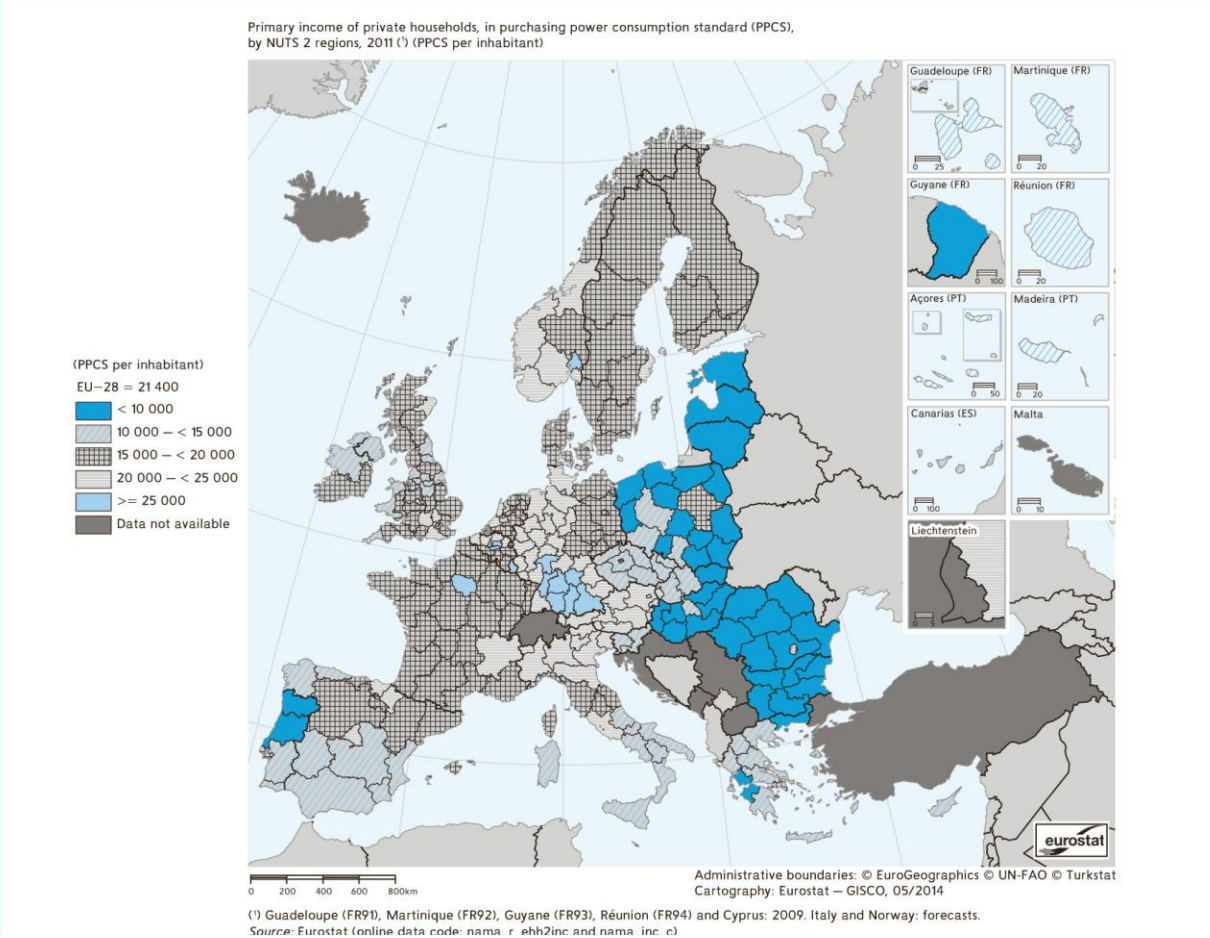
Geographic income inequality



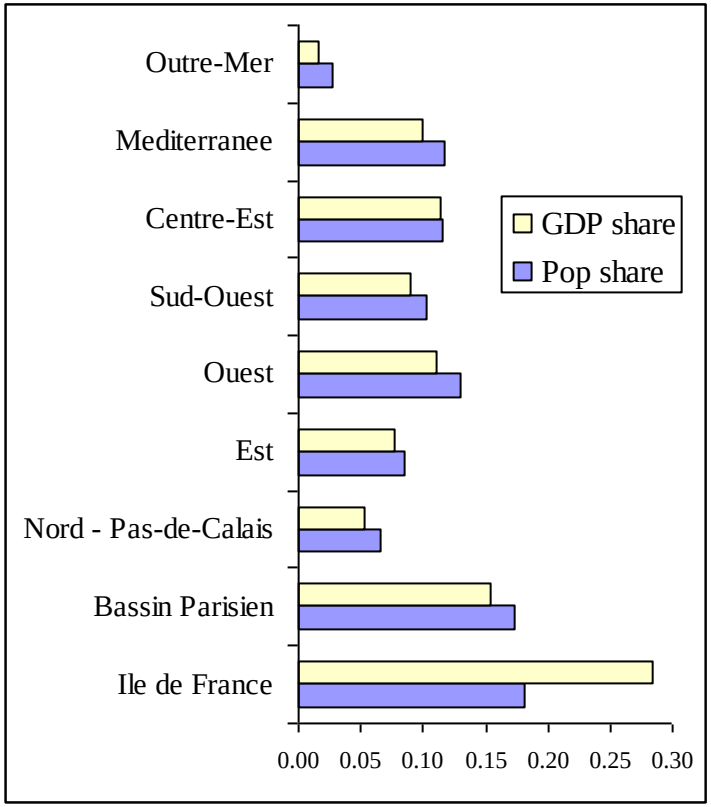
- Income distribution even more uneven at regional level.
- Within nation economic activity is very unevenly distributed
- Income distribution has become:
  - More even in EU15
  - Less even within EU15 nations (by region)

Geographic income inequality (updated)

- Rich regions are clustered and form the 'core' of the EU economy, as shown by regional GDP per capita (PPS) in 2010:



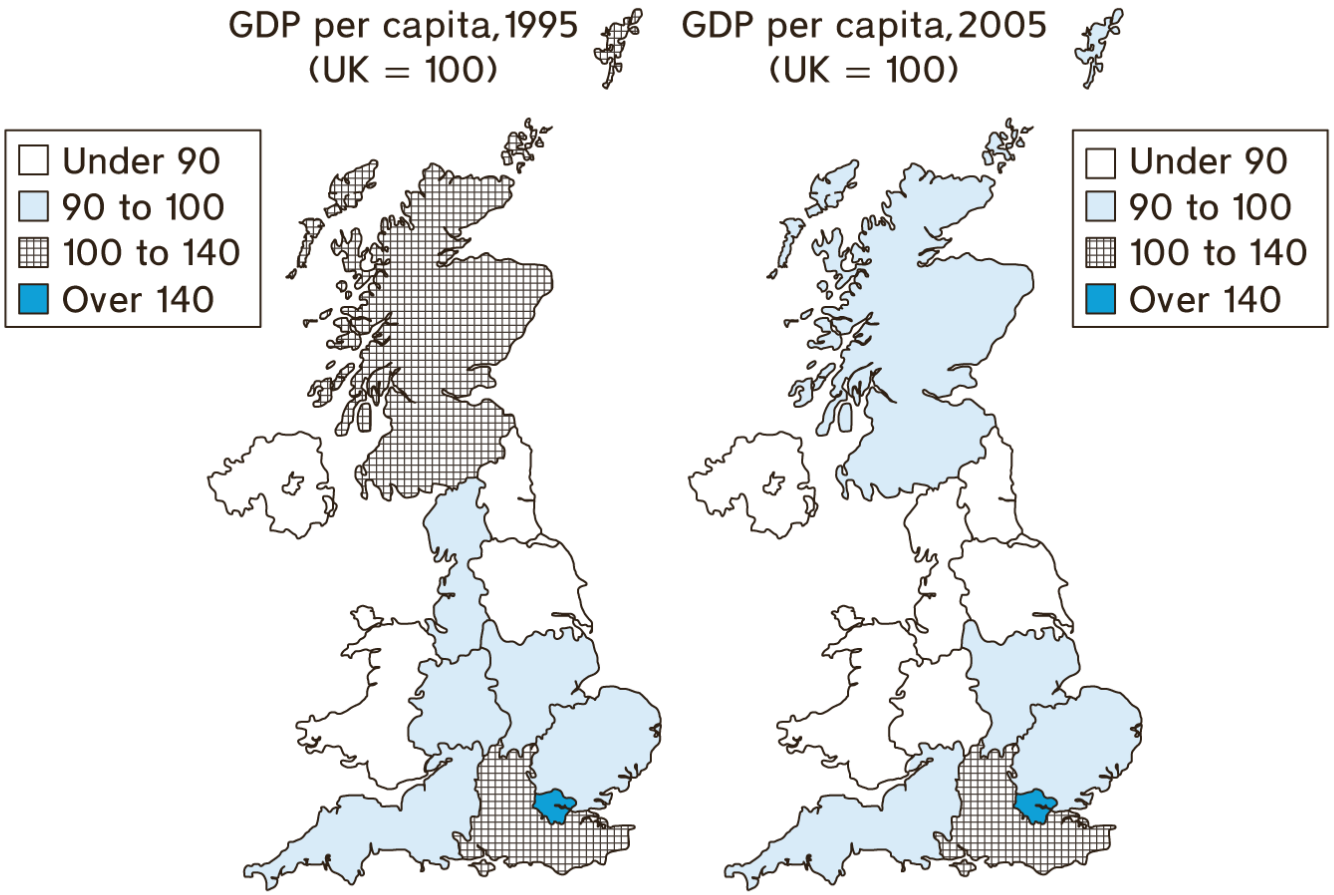
Geographic income inequality



- French case of study
  - Ile de France (Paris) has almost 1/3 of all economic activity.
  - Per capita incomes (not shown) are 158% of EU15 average.
  - Mediterranee has 10% of GDP, 12% of population.
    - GDP/pop only 86% of EU15 average.
- Outre-Mer are former French colonies.

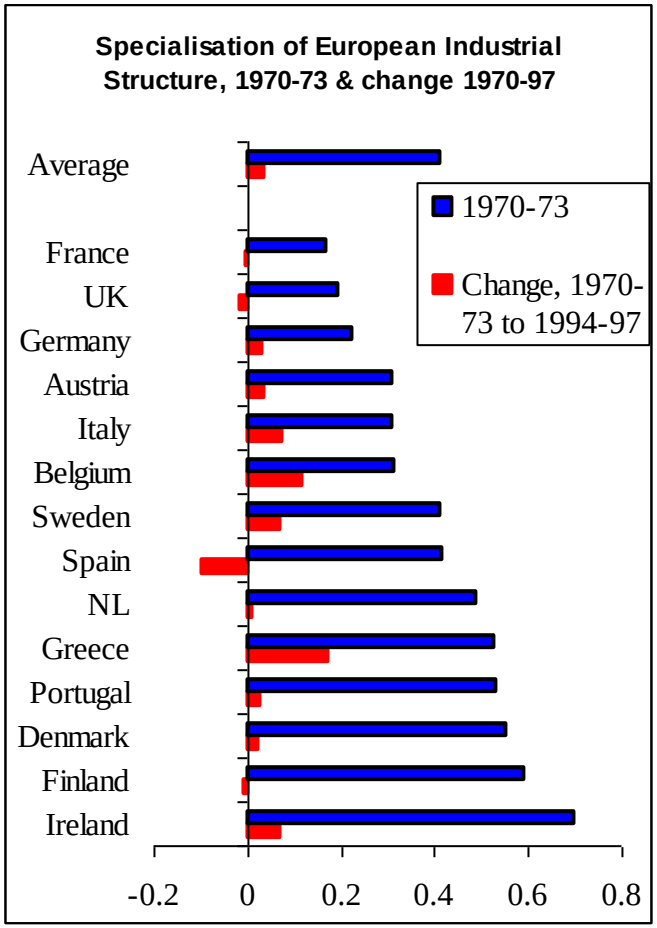
The UK case

- Income inequality within each EU nation has been rising:



Source: Authors' calculations based on Eurostat data

Geographic specialization



- Krugman index of specialisation shows most EU nations becoming more specialised.
  - EU economies seem to be specialising more in their comparative advantages.

Geographic specialization

- Krugman specialization index: fraction of manufacturing that has to change sector to make a nation's sector-shares line up with the sector-shares of average EU nations: Most EU nations are becoming more specialized.

	1980–83 (%)	1988–91 (%)	1994–97 (%)
Ireland	62	66	78
Greece	58	66	70
Finland	51	53	59
Denmark	55	59	59
Portugal	48	59	57
Netherlands	57	55	52
Sweden	39	40	50
Belgium	35	38	45
Italy	35	36	44
Germany	31	35	37
Austria	28	28	35
Spain	29	33	34
UK	19	22	21
France	19	21	20
EU15 average (weighted)	30	33	35

The EU vs. US

- Industry less geographically concentrated in the EU than in US
  - EU: 4 members have 50% man employment, 21% surface and 45% population
  - US: 15 states have 50% man employment, 11% surface and 21% population
- Income disparities across EU15 member states are much wider than across US states
  - EU15: 25% pop in objective one regions (GRP per capita < 75% EU average)
  - US: 2% pop in states with (GSP per capita < 75% US average)
- **How to understand these facts?**
- Allocation and location effects

Theory

- Two major approaches linking economic integration to change in the geographic location of economic activity.

1. Comparative advantage (CA) suggests nations specialise in sectors in which they have a comparative advantage.
2. New Economic Geography (NEG) suggests that integration tends to concentrate economic activity spatially.

- General idea:
  - Use CA approach to explain cross-nation facts.
  - Use NEG to explain within nation facts.

Comparative advantage

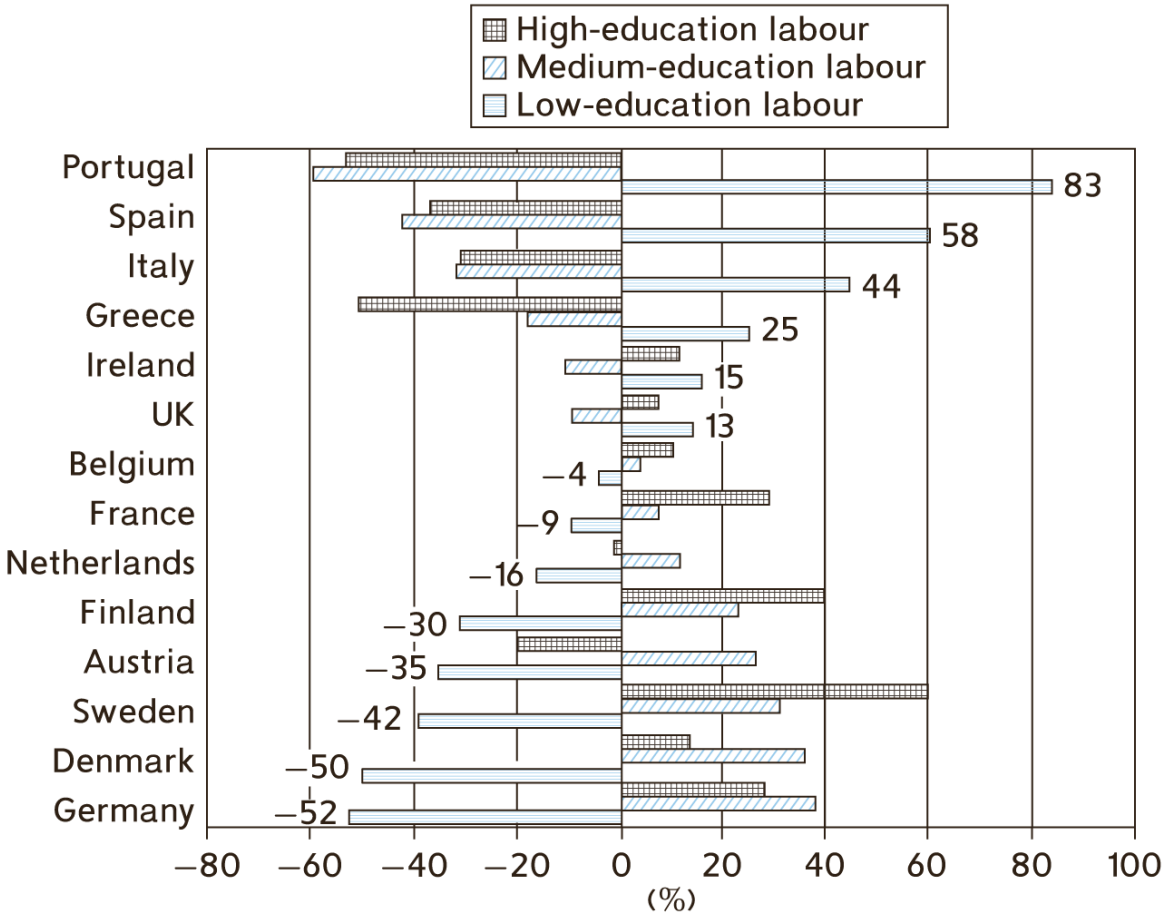
- Back to 800 Century (Ricardo, Torrens, Smith)
  - International labor division: Each country can gain by specializing in the good where it has comparative (relative not absolute) advantage, and trading that good for the other.
  - Trade is a substitute for factor mobility. But once allow factor mobility, one can get clustering of particular sectors or overall activities
- Specialization patterns can be explained by countries having …
  - Different: technologies; endowments; geographies
- … and thinking through the allocation effects
- These characteristics were implicit reason why costs and price differ across countries for allocation effects

Comparative advantage

- Comparative advantage suggests that nations specialize in sectors in which they have a comparative advantage.
- Example:
  - Germany abundant in high skilled labor;
  - Portugal abundant in low skilled labor;
  - with trade: Germany specializes in pharmaceuticals and trades them for cloth from Portugal and the industrial structures of both Portugal and Germany would become more specialized.

Comparative advantage and specialization

- Relative labor endowments in Europe:



Source: Data from Midelfart-Knarvik et al. (2002)

New Economic Geography (NEG)

- When productive factors can cross borders (international or inter-regional) integration may have very different effects.
- Scale economies & trade costs generate forces that encourage geographic clustering of economic activity.
  - "Overall clustering" = some areas with lots of economic activity, others empty "core-periphery".
  - "Industry clustering" = each sector clusters in one region, but most regions get a cluster.

Agglomeration and dispersion forces

- Why do we observe agglomerations? Intuitively, it should be clear that the spatial configuration of economic activities is the outcome of a process involving two opposing types of forces, that is, agglomeration (or centripetal) forces and dispersion (or centrifugal) forces.
- The observed spatial configuration of economic activities is then the result of a complicated balance of forces that push and pull consumers and firms. This view agrees with very early work in economic geography.

Agglomeration and dispersion forces

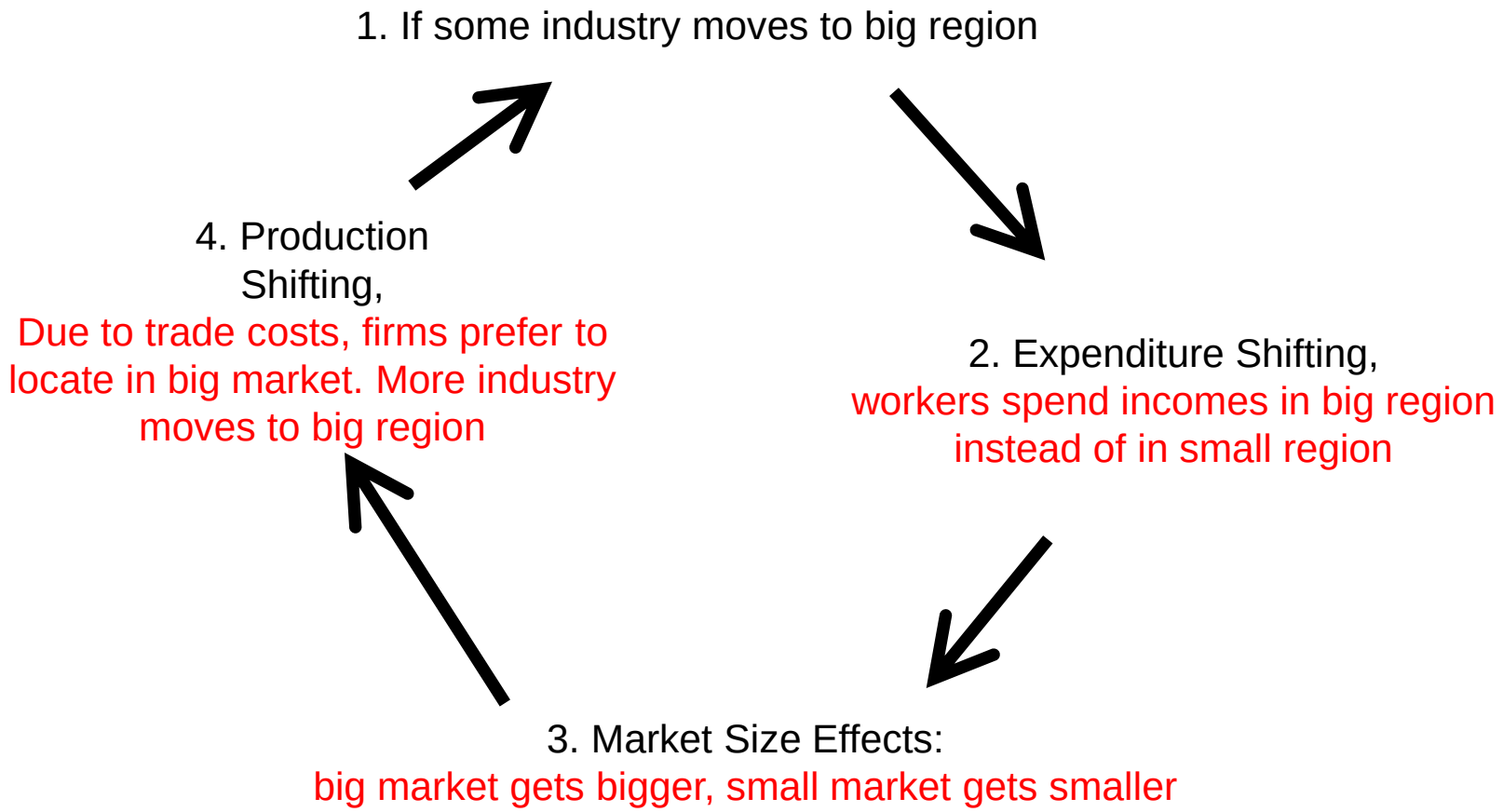
- Basic idea is that lowering trade costs affect both.
  - Agglomeration forces. Tend to lead industry to cluster geographically.
  - Dispersion forces. Tent to encourage industry to disperse geographically.

Agglomeration forces

- Many agglomeration forces:
  - Technological spillovers (e.g. silicon valley),
  - Labour market pooling (e.g. City of London),
  - Demand linkages (a.k.a backward linkages),
  - Supply linkages (a.k.a foreward linkages).
- New Economic Geography (NEG) forces on demand & supply links since they are clearly affected by economic integration (lower trade costs).

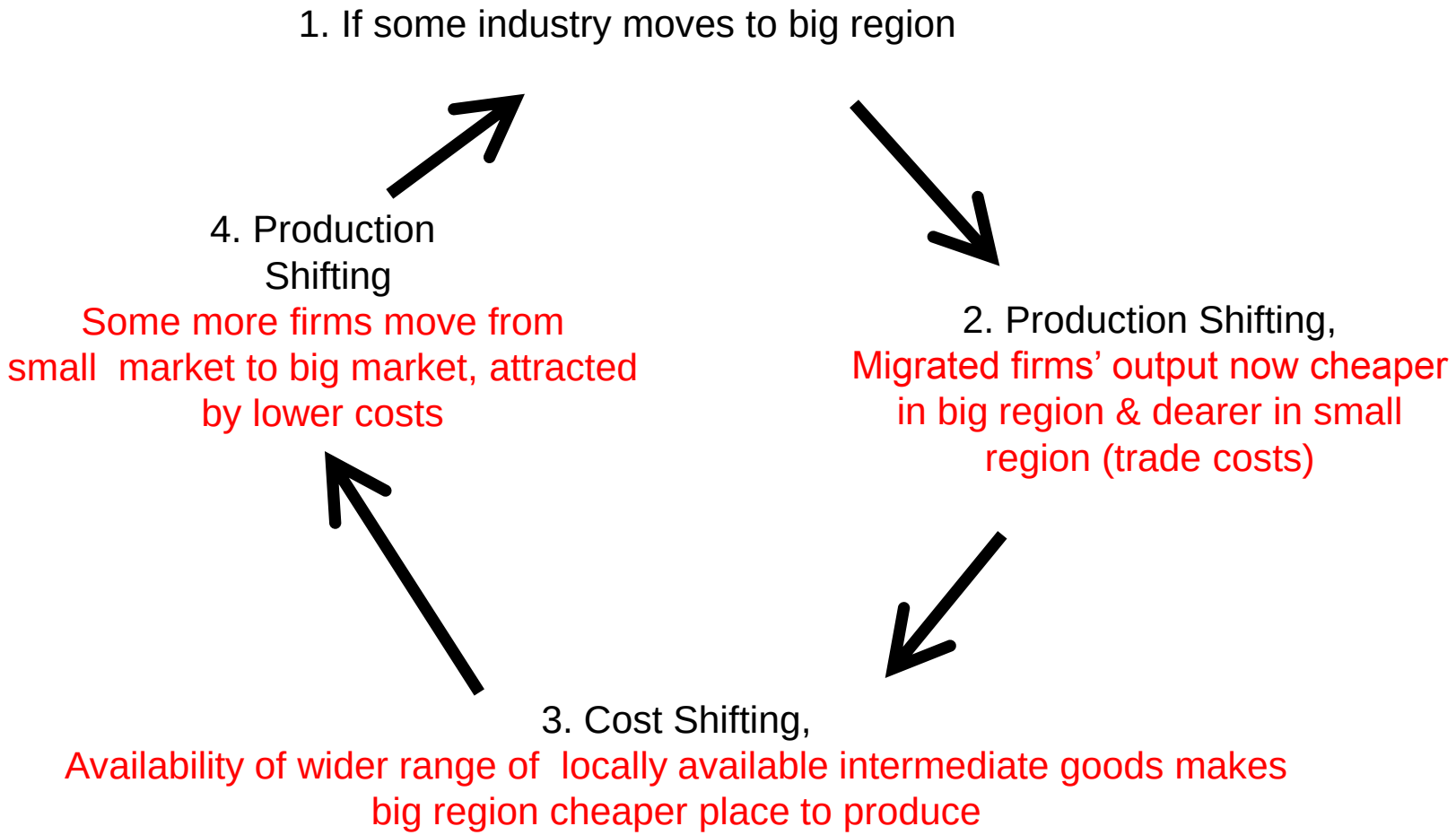
Circular Causality & Demand Linkages

(Krugman)



Circular Causality & Supply Linkages

(Venables)



Dispersion forces

- Many forces lead to a tendency of firms to avoid agglomerations of economic activity:
  - Rents and land prices,
  - High cost of other non-traded services,
  - Competition with other firms.
- The NEG focuses on the last one “local competition” since it is clearly related to trade costs.
  - As trade costs fall, distance provides less protection from distant competitors.

The role of transaction costs

- Changing transport costs can change the balance of agglomeration and dispersion forces
  - E.g. product market competition from the other market increases as trade costs fall
  - With very high trade costs, firms in small markets are protected from competition; firms in large markets face more competition
  - As trade costs fall, firms everywhere face more competition $\Rightarrow$ dispersion force less strong
- Need formal analysis to show that this can produce agglomeration.

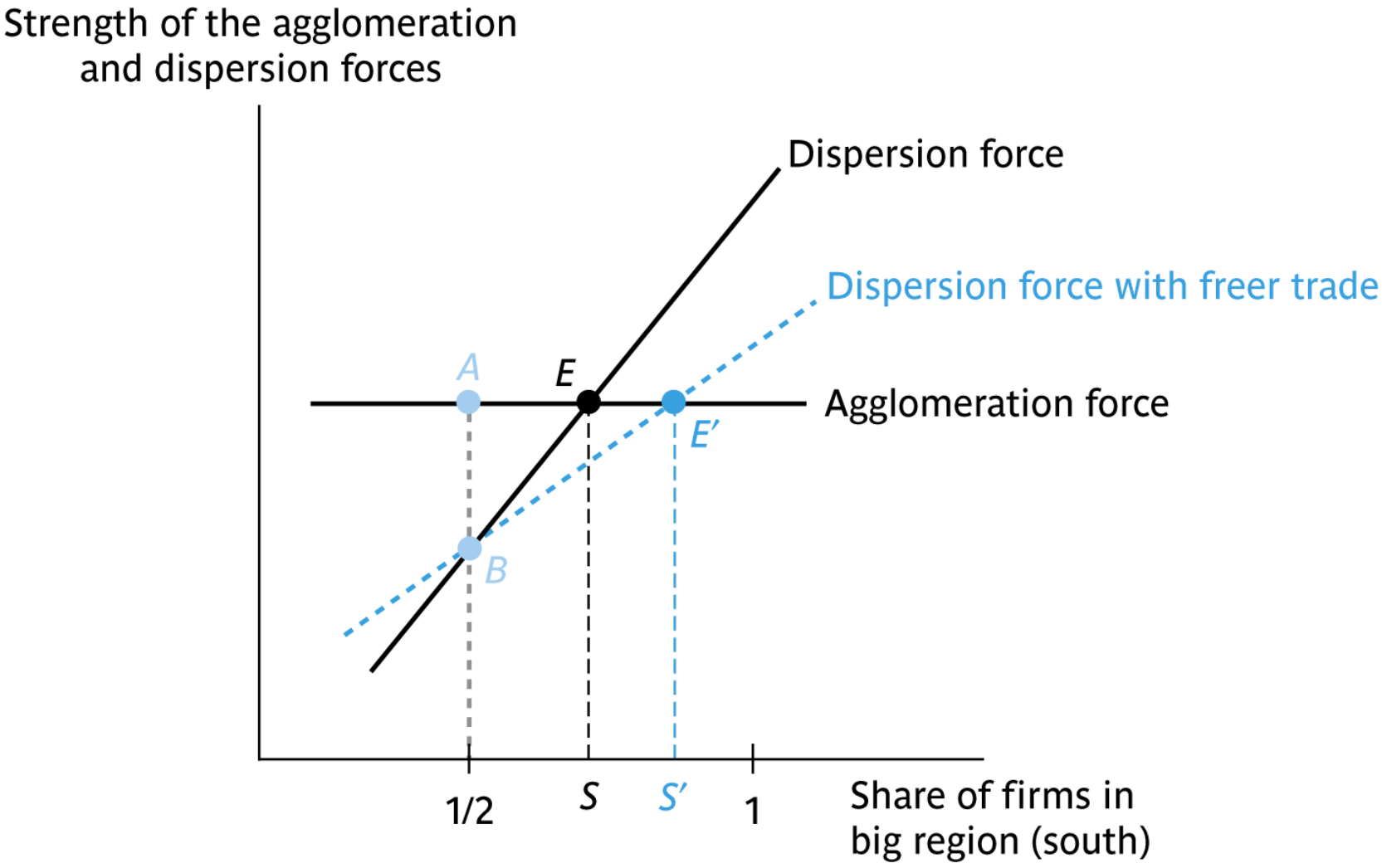
The locational effects of EU integration

- EU integration affects the balance of dispersion/ agglomeration forces in complex ways.
- A very simple analytical framework:
  - assume away all dispersion forces except 'local competition';
  - assume away the demand-linked circular causality;
  - assume away cost-linked circular causality (by assuming firms buy no intermediate inputs);
- pro-agglomeration & one pro-dispersion:
  - firms would, all else equal, prefer to locate in the big market in order to save on trade costs;
  - firms would, all else equal, prefer to be in the market where there are few local competitors.

The locational effects of EU integration

- With these simplifications:
  - agglomeration force is flat in the share of firms in big region;
  - dispersion force line is rising in the share of firms in big region since the benefit of staying in the small region rises as more firms move to the southern market.
- The location equilibrium is given by the intersection of these lines.
- Economic integration reduces trading costs and weakens dispersion forces → more concentration of economic activities.

The locational effects of EU integration



Summary: High or low trade cost

- High trade costs
  - One large core market and one peripheral
  - If located in the core
    - Good access to consumers
    - Higher competition from other firms
  - On balance dispersion forces dominate and firms locate in proportion to population
- Low trade costs
  - Firms everywhere face more competition
  - If located in the core
    - Good access to consumers
    - Higher competition from other firms BUT competition is higher everywhere
  - On balance agglomeration forces dominate and firms locate disproportionately in core
  - For very low trade costs, get *all* economic activity in the core

Additional forces

- Cost linkages
  - Transport costs (increase trade cost)
  - Increases strength of agglomeration force (good access to suppliers in large market)
  - Factor market competition
- Increases strength of dispersion force
  - Congestion of resources in fixed supply (roads/land)
  - Higher wages for certain sector specific workers

The role of labor mobility

- If workers were mobile, they would want to move to the place with more capital (higher wages and lower prices) ⇒ get agglomeration of workers and capital
- EU workers very immobile relative to US
  - –1% of EU citizens work in a member state different from where they were born
  - Wage elasticity of interregional migration 25 times higher in the US than in UK (difference with respect to other EU countries even larger)
- In the EU, output is more spread out than US
- But, more workers earn lower income

Trade costs and labor mobility

- What if factor market competition matters?
  - Congestion
  - Workers immobile across both regions and sectors (like in EU?)
- As trade costs fall even further
  - Can serve markets from anywhere
  - Competition is the same everywhere
  - Wages / land rents are higher in the core
- On balance dispersion forces (wages) dominate and get dispersion of sectors, particularly if they use a lot of land and/or labour
- But, requires labour market flexibility and that integration goes far enough

The importance of wage flexibility

- It is *a key* force encouraging firms to locate in the periphery if trade costs low enough.
- If wage didn't adjust, then only dispersion force is congestion
- Could actually see *more* agglomeration
- Would tend to get higher unemployment in periphery rather than lower wages
- Unemployment persists if workers don't move and wages don't adjust

Integration and specialization

- With many industrial sectors linked by input/output structure
  - Each sector has closer cost/demand linkages with some particular sectors than others
  - Each sector creates general dis-benefits for other sectors through increased competition for local resources
- Integration could cause additional industry specialisation
  - Long run gains
  - Short run adjustment costs for factors employed in locally declining sectors

Welfare effects of re-location

- From the aggregate point of view – i.e. the whole EU – this re-location of economic activity increases efficiency
- From an individual country/region point of view this re-location may lower real wages and make the country worse off