Delocation and European Integration: Is Structural Spending Justified?

Henry Overman
LSE
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Outline

1. Scenarios for development of the EU’s economic geography
2. The role of policy
   • Evidence
   • Conjecture
     • Transport infrastructure
     • State aids
3. Lessons for policy
Part 1

The Economic Geography of the EU
EU15 location patterns

- Economic activity less geographically concentrated than US
- Individual industries less geographically concentrated than US
- Countries slowly becoming more specialized
- A mixed picture for regional specialization
- Convergence between countries, divergence within countries
- Spatial dimensions of inequality increasingly important
Economic geography: Critical determinants

• Agglomeration gains
  – Strength
  – Extent (between or within)

• Mobility
  – Degree
  – Factors

• Transport costs
## Integration and location

<table>
<thead>
<tr>
<th>Agglom gains</th>
<th>Mobility</th>
<th>Small</th>
<th>Large inter-industry</th>
<th>Large across industries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td></td>
<td>Dispersion</td>
<td>H-O localisation</td>
<td></td>
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<tr>
<td>Labour low</td>
<td></td>
<td>Spec and FPE</td>
<td>Industry black hole</td>
<td>Polarisation</td>
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<tr>
<td>Capital high</td>
<td></td>
<td>High</td>
<td>1 black hole</td>
<td></td>
</tr>
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- **Agglom gains**: Co-location and co-mobility of factors conducive to productivity and agglomeration.
- **Mobility**: Mainly refers to human capital mobility.
- **Dispersion**: In the dispersion model, Agglom gains are small, and there is high mobility.
- **H-O localisation**: In the home advantage (H-O) model, Agglom gains are high, and there is low mobility.
- **Spec and FPE**: Activity specialisation and factor price equalisation.
- **Industry black hole**: Polarisation effect where a small number of industries dominate.
- **1 black hole**: Even more concentrated effect than industry black hole.
The role of transport costs

- **High transport cost**
  - Firms sell mainly in local market
  - Competition effect limits agglomeration

- **Intermediate transport cost**
  - Weakens the effect of local competition because increases share of sales in other regions

- **Low transport cost**
  - Price of local factors higher in core regions
  - Factor price differences may dominate for low transport cost
Part 2

The role of policy: evidence & conjecture
The returns to development funds

- Some evidence of differing returns for different types of EU expenditures
  - Infrastructure returns small
  - Business support returns small
  - Investment in education and human capital has medium term positive significant effects
EU investment in transport infrastructure

- Seen as playing a key role in reducing disparities
- Trans-European Networks
  - 14 priority projects and large number smaller projects
  - 300,000 million (1993 prices)
  - High community support
  - High investment rates in some Cohesion countries (e.g. 2.7% GDP in Spain)
Transport as capital stock

• Regional production function approach
  – Output a function of regional endowments: skilled labour, private capital, public capital
  – Initially, high estimates of returns to infrastructure expenditure (one for one!)
  – More recent estimates much more moderate returns

• Ignoring network dimension to many new projects (especially rail projects)
The “two-way” roads problem

• Roads run both ways
  – Gives access of peripheral firms to core market
  – Allows core firms access to peripheral markets

• Theory suggests that if
  – Limited migration
  – Low regional wage flexibility

… this can be bad for the periphery

• Not just theory – c.f. Southern Italy 1950s
Transport networks and regional development

• Intra-regional transport projects benefit peripheral regions
• Inter-regional transport projects can harm peripheral regions
• Hub and spoke networks can harm peripheral regions
TENs and accessibility (rail)
TENs and accessibility (rail)
From accessibility to activity

• Work for the Cohesion Fund highlights the idea that:
  – Some projects can benefit a wide number of regions (e.g. Madrid ring road)
  – Some projects can benefit a limited number of regions (e.g. Rias Bajas Motorway)
  – Some projects can benefit one region to the detriment of other regions (e.g. Tagus crossing)
CBAs and the role of transport infrastructure in development

- Cost benefit analysis looks at activities closely related to project
- Assumptions
  - Distortions and market failures not significant so that private and public valuations close
  - Induced changes in activity fade fairly quickly as we move away from close activities
- NEG suggests these conditions not met
The role of business support

• Role of EU regional aid in changing industrial structure of regions
  – Attracts low IRS activities
  – No effect on skill intensive activities
  – Attracts R&D intensive activities

• At national level changing endowments of medium skill do not attract medium skill intensive activities
The regional problem?

- Regional polarization
- Possibility that increasing medium skill endowments not attracting industry
- Government policy being used to attract high-tech activities counter to comparative advantage
- Specialisation is good
  - 30 Objective 1 regions: 10 winners, 20 losers
  - 8 out of 10 winners became more specialised
Part 3

Lessons for Regional Policy
Transport policies

• Need to think about the network effect of individual transport policies
• Transport policies plus regional flexibility can encourage firms in to the periphery
• High costs in peripheral regions can mean transport policies have negative effect
State aid

- Can be used to attract high tech activities
- Usually runs counter to comparative advantage
- Theoretical possibility to create “technopoles” – self reinforcing agglomerations of high tech activity
- Econometric analysis suggest that *on average* this policy just doesn’t improve regional GDP
- Successful projects are outliers
Specialisation and training

- Workers will need help during adjustment period.
- Trade off when designing training programmes
  - Sector specific skills will help deepen comparative advantage and protect against temporary shocks
  - General skills will help with permanent shocks
The role of skills

- Appropriately skilled labour allows regions to develop comparative advantage in sectors that use that sector.
- The only development policy that *on average* seems to show positive returns.
Skills and mobility

• Skilled people are more likely to move
• Is regional policy about developing the GDP of a region or the well being of the people that live in that region?
• Even if newly “skilled” workers move it can still be good for the region if it reduces unemployment (GDP per capita will rise)
Firm mobility

- Bribing firms to move appears to have some effect on industrial structure, but a weak effect on GDP
- Large movements of firms needed to overcome cumulative advantage of existing centres
  - Allows core to tax higher if it wants to (harmonizing taxes hurts periphery)
- Biggest incentive will usually be low wage costs in the periphery
Wage differentials and adjustments

• Large amount of opposition to allowing nominal wage differentials to emerge
  – Nominal wage differentials contribute to regional development by attracting firms
  – Firms need lower wage costs to offset disadvantage of periphery
  – Unemployment worse than low wages?
  – Real wages tend to be higher in the periphery!
Encouraging mobility

- Worst regional outcomes occur when firms are mobile and workers aren’t
- Encouraging mobility *out of* peripheral areas may be the best way to
  - Maximize aggregate income
  - Minimize adverse affects of peripherality
Key messages

• Regional flexibility and deeper integration are the key economic mechanisms that will help deal with problem regions

• Governmental role should be to
  – Ensure flexibility
  – Support business and training programmes appropriate to regional characteristics
  – Encourage worker mobility
Appendix 1
EU location patterns (evidence)

Based on:
Economic activity

- 50% of EU industrial employment is concentrated in 27 NUTS 1 regions
  - 17% of EU surface area
  - 45% of EU population

- 50% of US industrial employment is concentrated in 14 states
  - 13% of US surface area
  - 21% of US population
## Spatial separation

<table>
<thead>
<tr>
<th></th>
<th>1970/73</th>
<th>1994/97</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial mach</td>
<td>0.918</td>
<td>1.03</td>
</tr>
<tr>
<td>Electronic equip</td>
<td>0.829</td>
<td>0.848</td>
</tr>
<tr>
<td>Motor vehicles</td>
<td>1.46</td>
<td>1.3</td>
</tr>
<tr>
<td>Textiles</td>
<td>1.91</td>
<td>2.03</td>
</tr>
<tr>
<td>Leather products</td>
<td>1.46</td>
<td>1.24</td>
</tr>
<tr>
<td>Average</td>
<td>1.12</td>
<td>1.14</td>
</tr>
</tbody>
</table>
Countries more specialised I


0.30 0.34 0.38 0.42 0.46 0.50 0.54 0.58

1973 entrants
1980s entrants
1995 entrants
Founding Members
Countries more specialised II

- Of EU 15 all countries more specialised in 1990s than 1970s (except Netherlands)
- Often an unravelling of specialisation patterns just before integration and then increased specialisation after
- Jump in specialisation on entry even if part of EFTA previously
A mixed picture for regional specialisation

- Between 1980 and 1995
  - 53% regions more specialised
  - 47% less specialised

- Health warning
  - Difficult to get regional data (exclude Austria, Finland, Greece, Sweden)
  - Not very disaggregated industrial classification
The evolution of EU regional inequalities: no more convergence
Some regional divergence
(coefficient of variation man shares)
Divergence within countries

Inequalities within countries

Inequalities between countries
Spatial dimensions

- Spatial dimension to polarisation of both GDP and unemployment
- Regions move with neighbours (even when control for type of industry, availability of skills, national institutions)
- Blurring of national boundaries
Appendix 2
EU location patterns (theory)

Based on:
Comparative advantage and specialisation

- Traditional models of comparative advantage help us understand some increasing specialisation with integration
- CA provides weak explanation of spatial concentration of activity
- Need increasing returns to scale to explain uneven distribution across areas with similar endowments
The Krugman-Venables core periphery model

- Two regions (core & periphery)
- Two factors of production (mobile across sectors but immobile across regions)
- Core has larger endowments (60%) but the same relative endowments (no CA)
- One CRS sector, freely traded (agriculture)
- One IRS sector, differentiated goods, costs to trade (manufacturing)
The home market effect

- Would expect core region to have more manufacturing
- The surprise is that the core gets a more than proportionate share
- Core exports manufactures – “the home market effect”
- Core firms have better access to larger markets. Larger sales of firms in core ➔ larger profits (IRS) ➔ firms enter in response to profits
The role of transport costs

- High transport cost
  - Firms sell mainly in local market
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Trade costs and location

![Graph showing trade costs and location]
Mobility & endogenous geography

- If some factors mobile between regions, eases pressure due to concentration
- Start from symmetric equilibrium and imagine effect on profits of firm moving
  - Product and labour market competition
  - No migration ➔ end of story
  - Fall price index, rise wages attracts workers
  - Increase local expenditure and eases pressure in labour market
European mobility

• Mobility of workers low within and between countries
  – High average unemployment rates reduce incentives
  – Institutional barriers
    • Social housing (within countries)
    • Pensions/social security (between countries)
  – Government regulations that reduce regional wage differentials
The role of regional wage differentials

• Impact depends on whether or not agglomeration happens anyhow

• If agglomerate:
  – Labour demand will be lower in the periphery
    ➔ high unemployment, low regional income
  – Lack of wage effect can actually reinforce agglomeration
  – Subsidies to firms to offset locational disadvantage will need to be ongoing
Input-output linkages

- Linkages between firms are sufficient to drive agglomeration even when labour is immobile (good access to suppliers and customers)
- Two forces moderate agglomeration
  - Wage differences
  - Lack of cumulative effect from migrating workers
- At low transport costs wage differences can drive relocation to periphery (an inverted U)
Using the models

- US more agglomerated than EU because workers are more mobile
- Convergence between countries if wages reflect differences between countries
- Divergence within countries if institutional structures prevent wage differentials
- Spatial dimension to development
- What about specialisation patterns?
Agglomeration and specialisation

- Specialisation driven by comparative advantage
- Agglomeration effects can reinforce or counter specialisation
  - Externalities/linkages intra-industry will reinforce specialisation
  - Externalities/linkages inter-industry will promote diversification
Appendix 3
Accessibility: Road
TENs and accessibility (roads)