

# Transport infrastructure policies and accessibility in the periphery of Europe

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The logo for the London School of Economics (LSE), consisting of the letters 'LSE' in white, bold, sans-serif font, centered within a red square.

# Popularity of infrastructure policies

## ▶ Infrastructure policies have traditionally been popular

1. 'Hard' infrastructure policies (e.g. transport)
2. 'Soft' infrastructure policies (e.g. ICT)

## ▶ Reasons behind that popularity

### 1. Economic reasons

- Necessary – albeit not sufficient – factor for economic development
- High economic returns from investment in infrastructure (e.g. Aschauer 1989)

### 2. Political reasons

- Transport infrastructure is highly visible
- Generally popular
- And provides many opportunities for ribbon cutting...

### 3. Management reasons

- Infrastructure projects are generally easy to manage
- Easy to spend large sums relatively quickly

# Infrastructure in the periphery

## ▶ **Transport infrastructure allows for:**

1. Improving accessibility to market
  - Better market integration of peripheral and lagging regions
  - Facilitating catch-up
2. Maximizing local economic potential
3. Allowing a better exploitation of resources

# Infrastructure policies in the EU

## ▶ **Transport infrastructure has become a very popular policy for the EU:**

1. Article 154 of the Treaty: “Establishment and development of trans-European networks in the area of transport, telecommunications and energy infrastructure” as a tool for:
  - Market integration
  - Economic and social cohesion
2. Infrastructure represents roughly 50% of all investment in regional development in the periphery (Rodríguez-Pose and Fratesi, 2004)
3. Half of the Cohesion Fund dedicated to infrastructure

# Negative side of infrastructure for the periphery

- ▶ **But infrastructure development can also be a double-edge sword for development in peripheral regions**
- ▶ **Changes in accessibility may widen regional disparities:**
  1. 'Roads run both ways': Accessibility leads to market integration and not all firms have the same capacity to compete
  2. The relative absence of competitive firms or inadequate human capital endowments puts economic activity in these regions at risk
  3. Greater connectivity may lead to the concentration of economic activity
  4. Lack of adequate intra-regional networks may also foster agglomeration (Martin, 1999)

# Aim of the presentation

- ▶ **Discuss whether investment in infrastructure (focusing on transport infrastructure in the periphery) pays off**
- ▶ **Analyse how investment in transport infrastructure interacts with other local factors**
  1. Concentration of innovative activities
  2. Skills of individuals
  3. Agglomeration economies
  4. Mobility
- ▶ **But also with developments in neighbouring areas**
- ▶ **Final aim: providing some policy lessons**

# Structure of the presentation

- ▶ **Factors that influence the impact of infrastructure on economic development**
- ▶ **Model**
- ▶ **Dataset**
- ▶ **Empirical results**
- ▶ **Conclusions**

# Factors behind economic development

▶ **Economic development (proxied by growth) is affected by a multitude of factors:**

1. Internal to a region:

- Innovative capacity
- Human capital accumulation
- Sectoral specialisation
- Geographical location
- Migration
- Institutions
- Infrastructure

2. But also external:

- Transport infrastructure improves connectivity
- So there is a need for a spatial perspective
- Conditions in other areas may have ripple effects
- But they are also affected by distance decay effects

# The model

	<b>Endogenous factors</b>	<b>External Factors (Spillovers)</b>
<b>Infrastructure endowment and investment</b>	Kms of motorways (level and annual change)	Infrastructure in neighbouring areas
<b>R&amp;D</b>	Investment in R&D in the region	Investment in R&D in neighbouring regions
<b>Relative wealth</b>	GDP per capita	GDP per capita In neighbouring regions
<b>Agglomeration economies</b>	Total regional GDP	Total GDP in neighbouring regions
<b>Social filter</b>	Structural characteristics that would make a region more 'innovation prone', including: <ul style="list-style-type: none"> <li>• Education</li> <li>• Sectoral composition</li> <li>• Use of resources (unemployment)</li> <li>• Demographics</li> </ul>	Similar conditions in neighbouring regions
<b>Human capital mobility</b>	Migration rate	Migration in neighbouring areas
<b>National effects</b>	National growth rate	

# Dataset

- ▶ **EUROSTAT New Cronos-Regio data.**
- ▶ **Regional division**
  1. NUTS2
- ▶ **Period:**
  1. 1990-2005 for EU15
  2. 1995-2005 for EU25
- ▶ **Method:**
  1. Fixed-effects panel data regressions
  2. With a static and a dynamic dimension

# Empirical results

## ▶ **Infrastructure endowment vs. investment**

1. A good infrastructure endowment is a precondition for economic development
2. But additional investment in infrastructure seems to be completely disconnected from growth

## ▶ **Internal vs. external infrastructure**

1. Regions benefit from being surrounded by regions with good infrastructural endowments
2. But additional investment in neighbouring regions is, on the whole, negatively associated with regional growth

# Empirical results (II)

## ▶ Dynamic effects

1. The positive effects of infrastructure endowment on growth are short lived
2. The insignificant or negative effects of new investment are longer lasting
3. In the medium-term conditions in neighbouring areas matter less

## ▶ Infrastructure vs. other factors

1. Infrastructure endowment and investment appear also to be less relevant for growth in the medium-term than other factors
2. Investment in R&D in neighbouring regions matters more
3. But the overall endowment of education is the best predictor for high economic performance
4. Both the effects of education and innovative capacities tend to be longer lasting in time.

# Conclusions

- ▶ **The relationship between transport infrastructure (and, for that sake, ITC) and economic development is complex**
  1. Infrastructure is necessary for development
  2. But the geographical concentration of factors, such as human capital and R&D investment in the case of Europe may imply that new investments in infrastructure may lead to further agglomeration
    - In the case of the EU, convergence gives way to divergence in our models
  3. New investments in transport infrastructure have by and large contributed to enhance centripetal effects

# Policy implications

- ▶ **Infrastructure intervention needs to be considered within a framework of integrated and balanced strategies**
- ▶ **Infrastructure investment has to be coordinated with policies aimed at developing human capital, the innovative potential of regions, and with other policies (business support, institutions)**
- ▶ **The timing of infrastructure investment is crucial**
  1. Invest too early and you will leave uncompetitive economies exposed and unable to compete
  2. Invest too late and you may remain lagging for a long time

# Policy implications

- ▶ **Transport infrastructure strategies need to be coordinated with that of neighbouring regions**
  1. In order to minimise the potential risks of being left out
  2. And to maximise synergies.
- ▶ **Only by combining space and time effects the benefits of greater accessibility will be maximised, will the risks of exposure of lagging regions minimised.**