



# Regional Strategies and National Policy: Working Together for Growth

Building Strategies for Regions of Innovation  
UNECE, Geneva, 12-13 April 2012

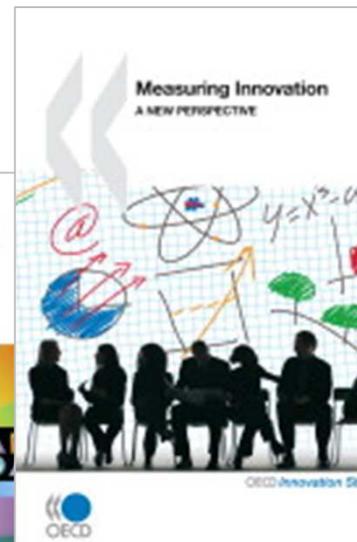
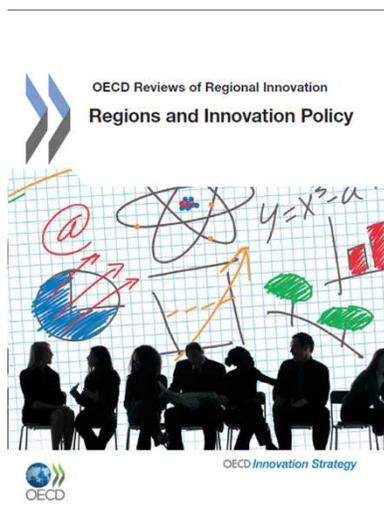
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# Why regions *and* innovation?

# OECD: Regional Development and Innovation

- Series **OECD Reviews of Regional Innovation** began 2007
  - **Thematic reports** on special topics such as clusters, globalisation, innovation policy
  - **Country/region** reviews at the request of governments
  - **Inputs** to territorial reviews, other OECD work (Innovation Strategy)
- **Different levels of government** seek policy advice:
  - **National governments** that must support a diversity of region types (regional development, S&T, enterprise and industry, higher ed)
  - **Regional authorities** that seek the right policy mix for their region
  - **Upcoming reviews:** Wallonia (Belgium), Southern and Central Denmark



# Why regions matter for innovation policy *even more today*

- **A double paradigm shift**
  - Rising relevance of regional dimension in national innovation strategies (systems approaches, critical mass in science, etc.)
  - New regional development policy (mobilising knowledge & assets for growth)
- **An evolving innovation scenario**
  - Increased globalisation (rise and fall of different regions)
  - Societal and environmental challenges (new growth model of 3 “E”s: efficiency, equity, environmental sustainability; sub-national role)
  - Increasing relevance of networks for innovation (in and across regions)
- **Empirical evidence**
  - World is not flat, it has hot spots (half of R&D in 13% of regions, half of patenting in 20% of regions)
  - Variety in regional innovation systems (within and across countries)
  - Innovation modes (spatial dimension relevant in different ways)

# What do we mean by innovation?

“...the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations.

By definition, all innovation must contain a degree of novelty...an innovation can be new to the firm, new to the market or new to the world.

...Innovation, thus defined, is clearly a much broader notion than R&D and is therefore influenced by a wide range of factors, some of which can be influenced by policy.

Innovation can occur in any sector of the economy, including government services such as health or education....Consideration is being given to extending the methodology [for innovation measurement] to public sector innovation and innovation for social goals.”



Source: OECD (2010) *Ministerial report on the OECD Innovation Strategy: Innovation to strengthen growth and address global and social challenges: Key Findings*, OECD, Paris based on OECD and Eurostat (2005), *Oslo Manual – Guidelines for Collecting and Interpreting Innovation Data*, OECD Publishing, Paris.

# Complementarities of policies

## Example of urban green growth package

Pro-Growth Policies → Greening Opportunities ↓	Infrastructure and Investment Policies	Innovation Policies	Human Capital Policies
Energy Policies	<i>Regulations and investments to support cogeneration of energy, district heating/cooling, and city purchase of renewable energy</i>	<i>Funding and technical assistance for regionally-located renewable energy R&amp;D</i>	<i>Retraining of traditional economy workers for renewable energy production</i>
Impact on Jobs	Renewable energy production is more job-intensive than fossil-fuel energy production.	Low and high-skill job opportunities at renewable energy start-ups.	Facilitates transition between traditional economy jobs and renewable sector job opportunities.
Impact on Demand for Green Goods	District heating/cooling can increase access to renewable energy by enabling or requiring participation of buildings in district.	Lowering barriers to commercial development of renewables can lower final cost, thus enabling greater demand.	--
Impact on Urban Attractiveness	Can attract firms given renewable sources of energy less vulnerable to price fluctuations than fossil-fuels.	Funding and technical assistance can attract renewable energy SMEs and R&D activities, and add value to local academic institutions	Skilled labour pool can better attract renewable energy producing firms.

Source: OECD Regional Outlook 2011

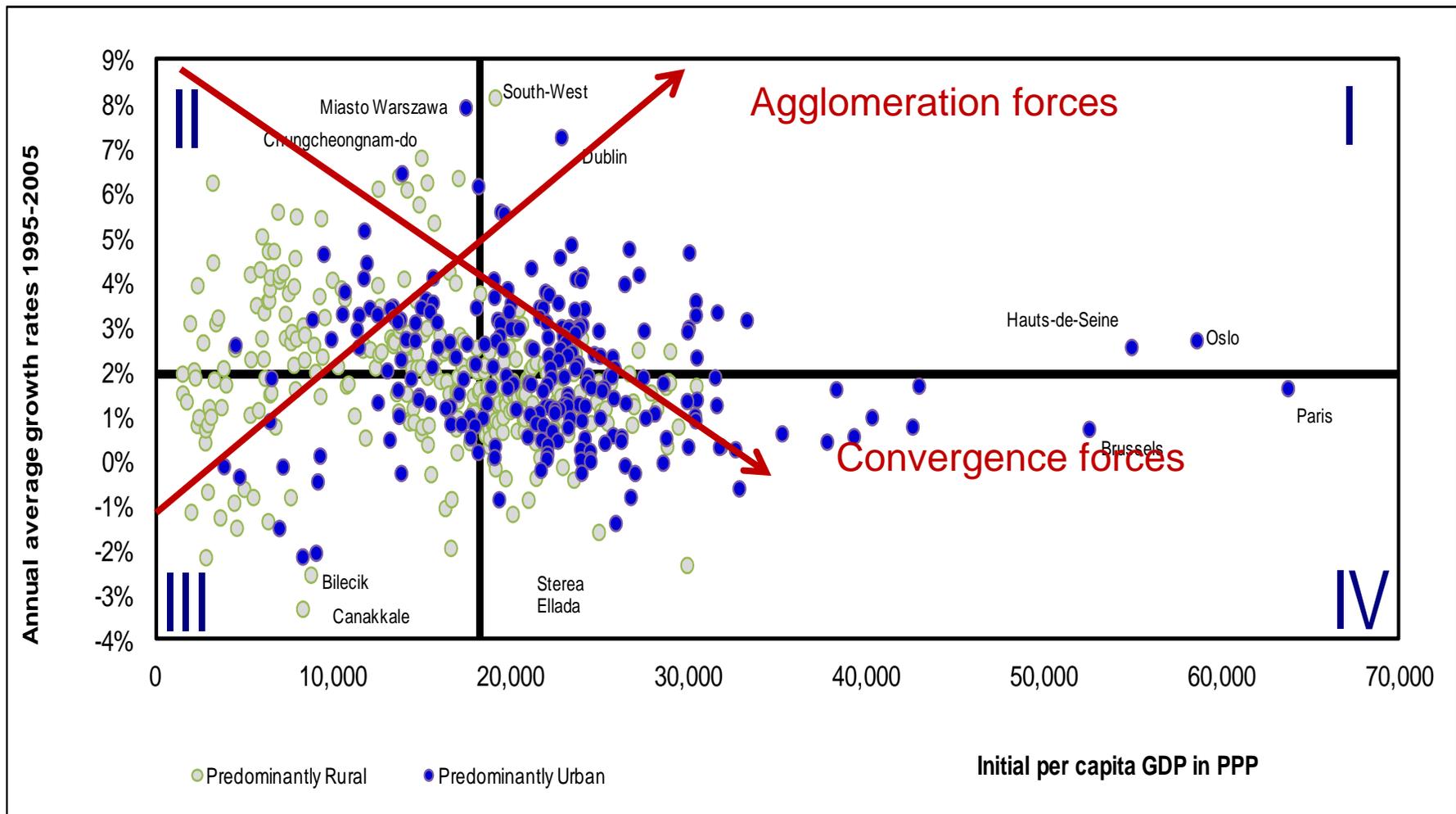
→ Outcome Indicators need to take into account the structure across the different policy areas; identify unbalances and weakest links



# Some facts about regional growth

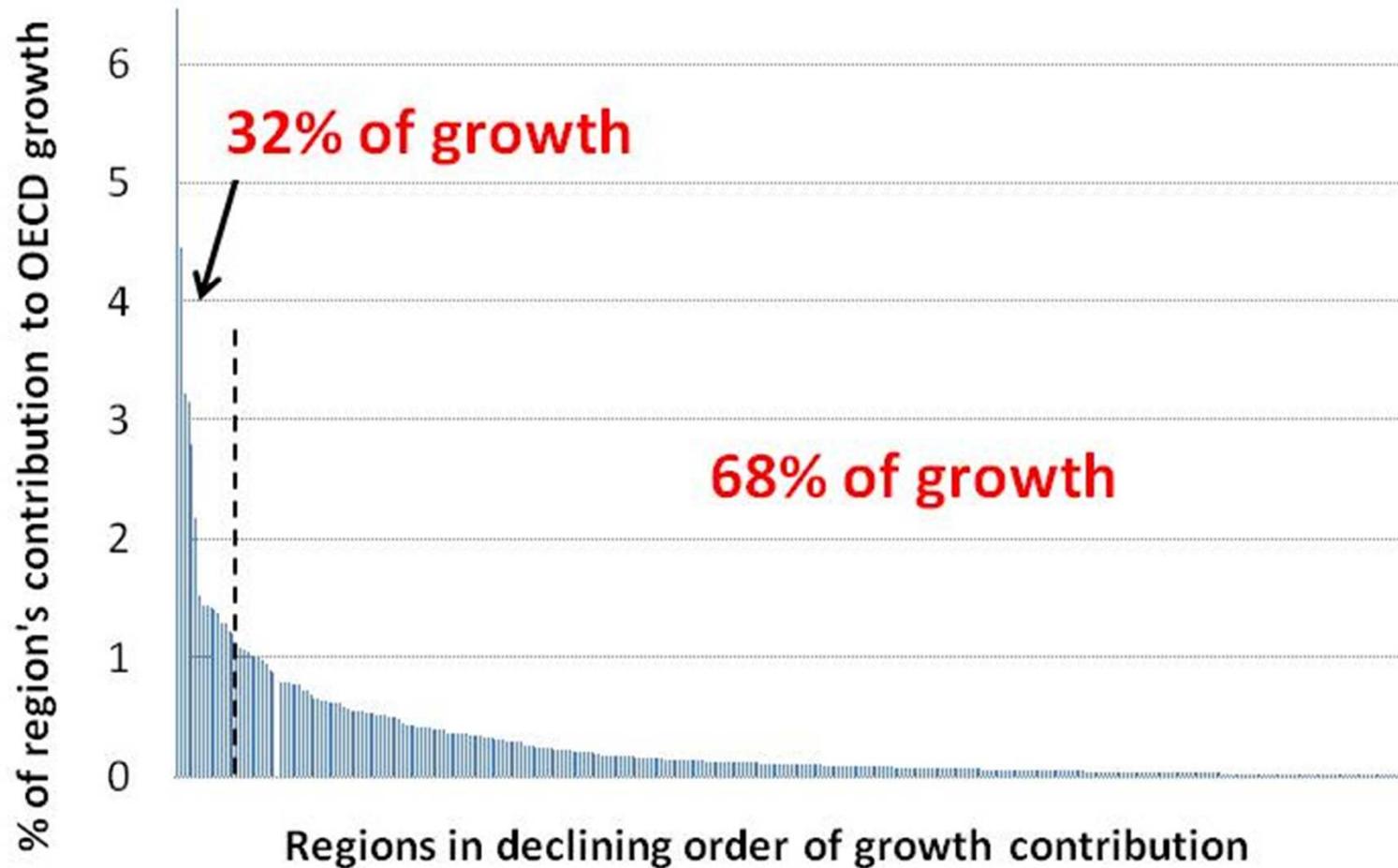
# Not only agglomeration drives regional growth (GDP per capita)

→ Many rural and intermediate regions are growing faster than urban regions



# Regional contributions to growth are unbalanced

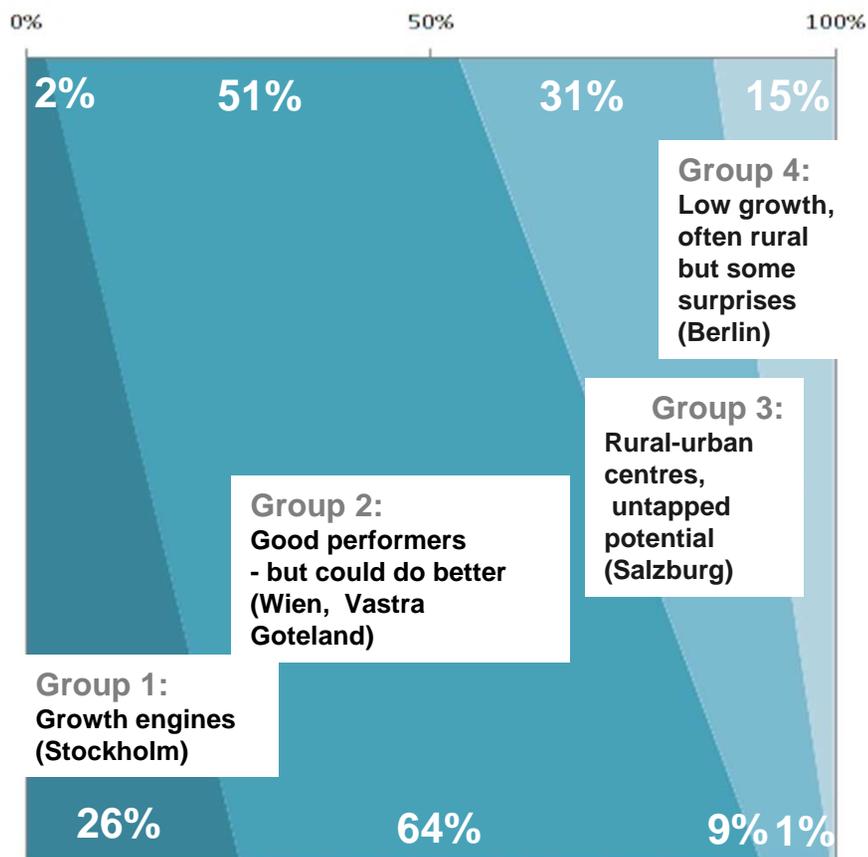
## Contributions to OECD-wide growth, TL2 regions



# With 2/3 of growth generated outside hubs, there exists too much unrealised potential

Contributions to growth by percentage of regions and population share

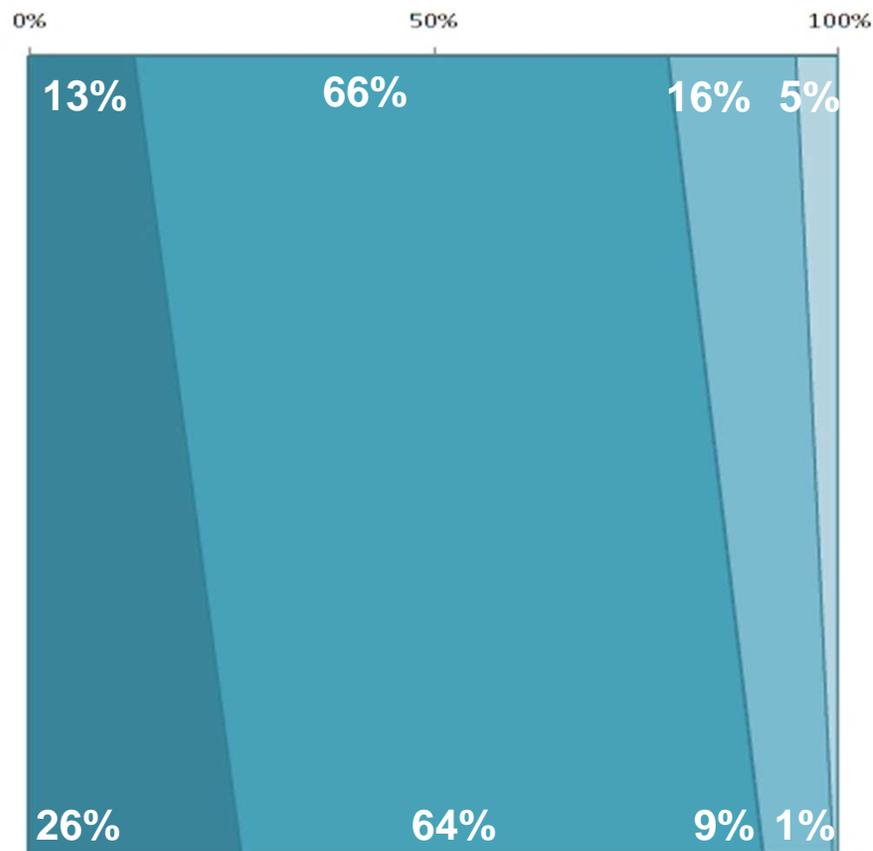
Number of OECD TL3 Regions



Contributions to Aggregate Growth



Population Share



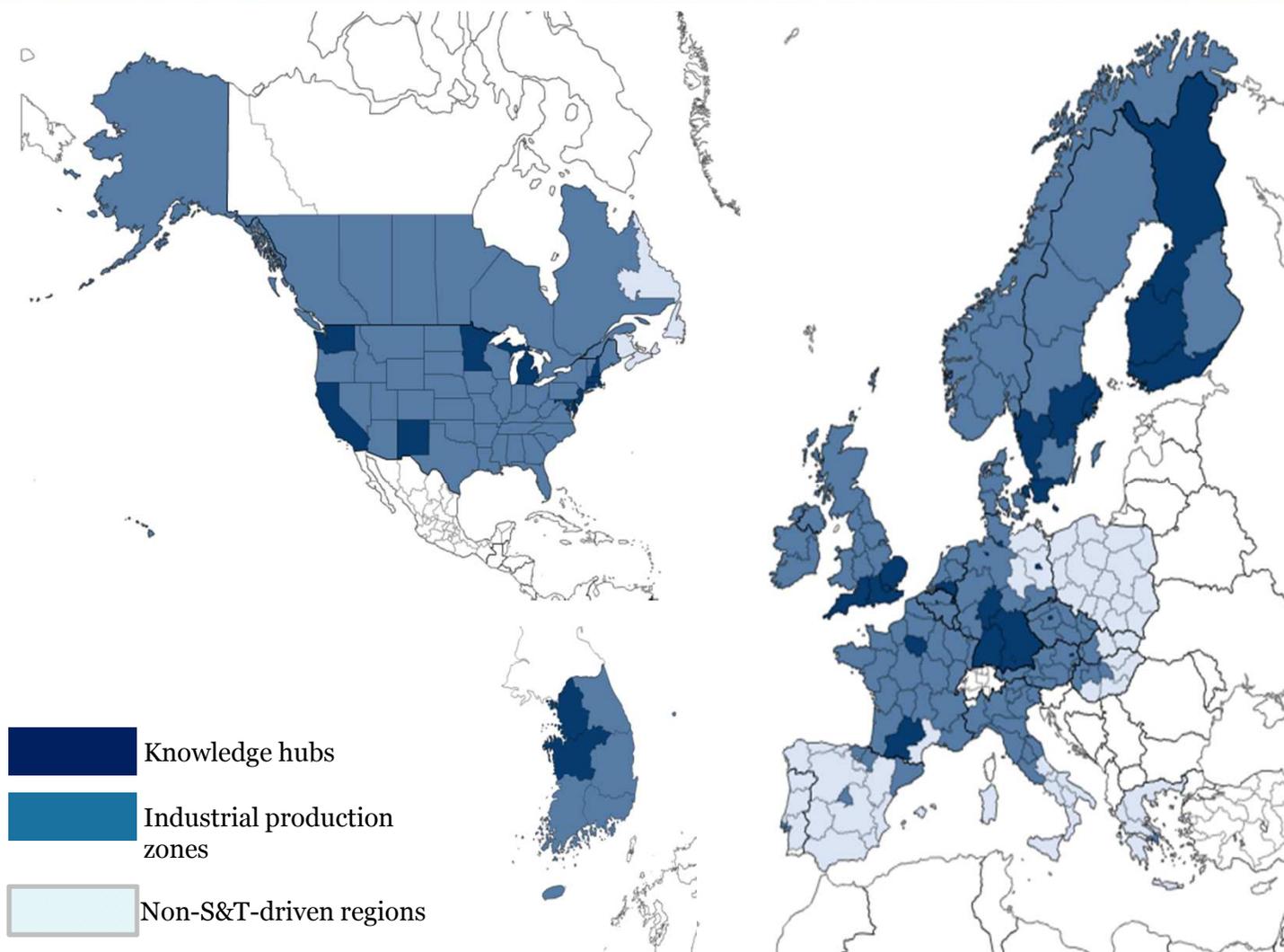
Contributions to Aggregate Growth

Source: OECD (2011) Regional Outlook.



# Some facts about regions and innovation

# Different regional profiles across OECD regions



## Knowledge Hubs

- ✓ Knowledge-intensive city/ capital districts
- ✓ Knowledge and technology hubs

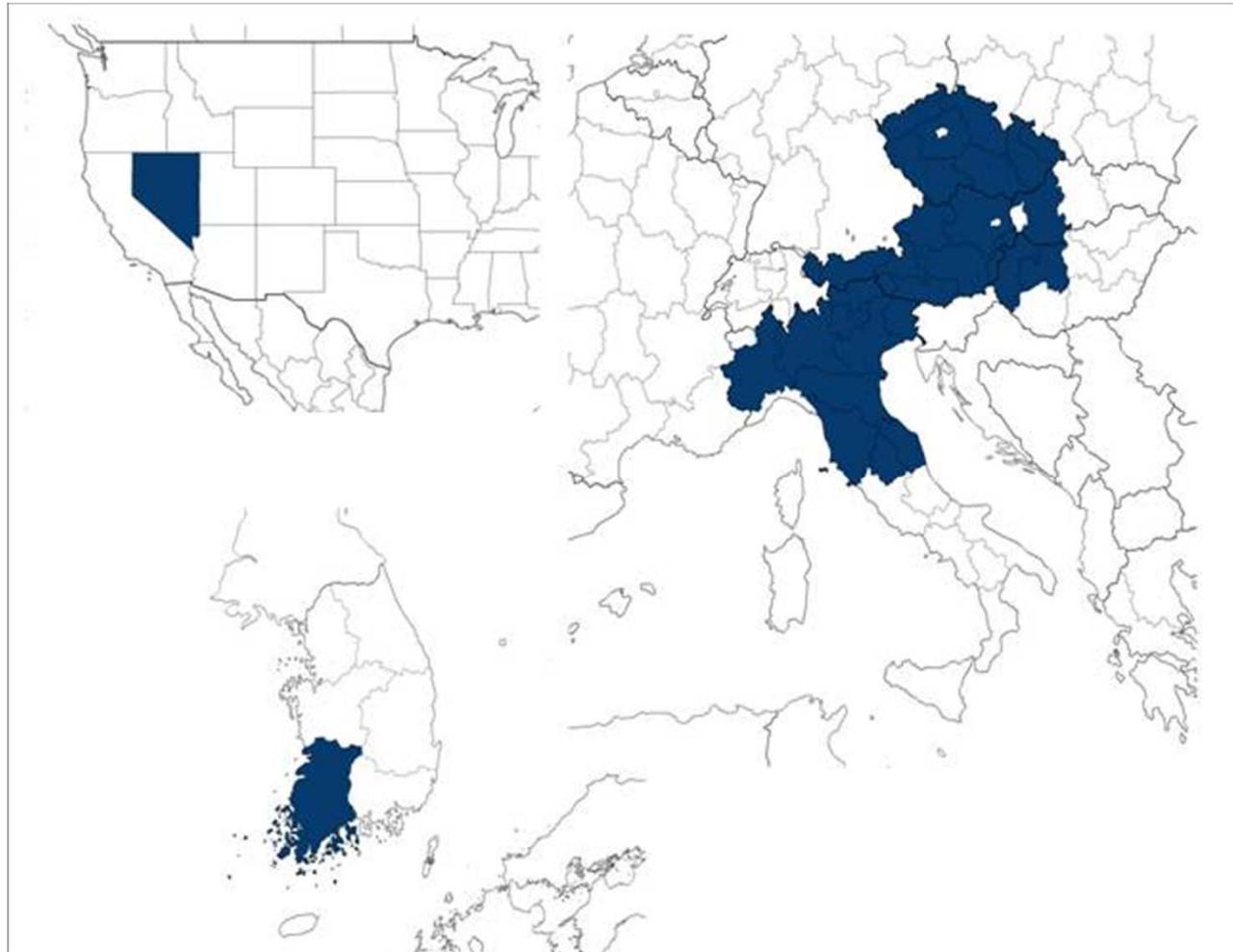
## Industrial Production Zones

- ✓ US states with average S&T performance
- ✓ Service and natural resource regions in knowledge-intensive countries
- ✓ Medium-tech manufacturing and service providers
- ✓ Traditional manufacturing regions

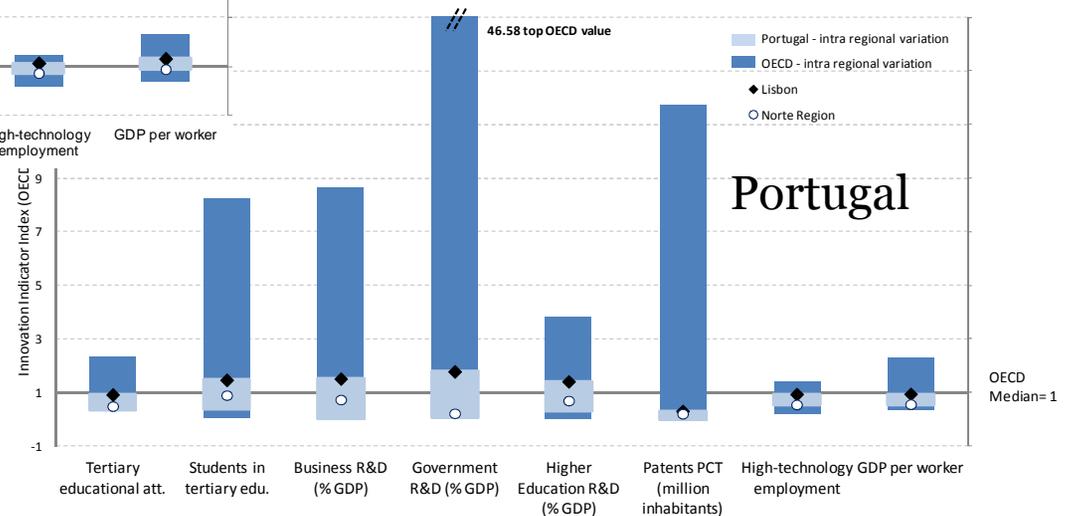
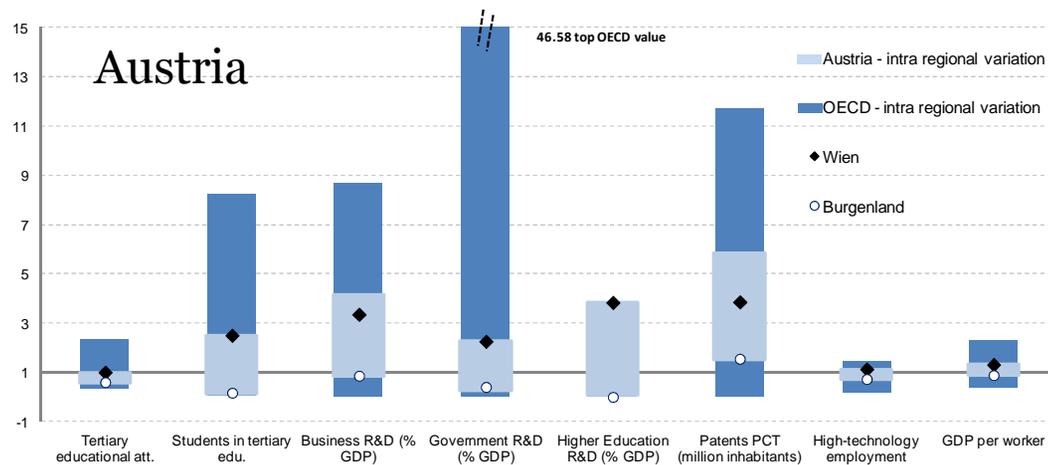
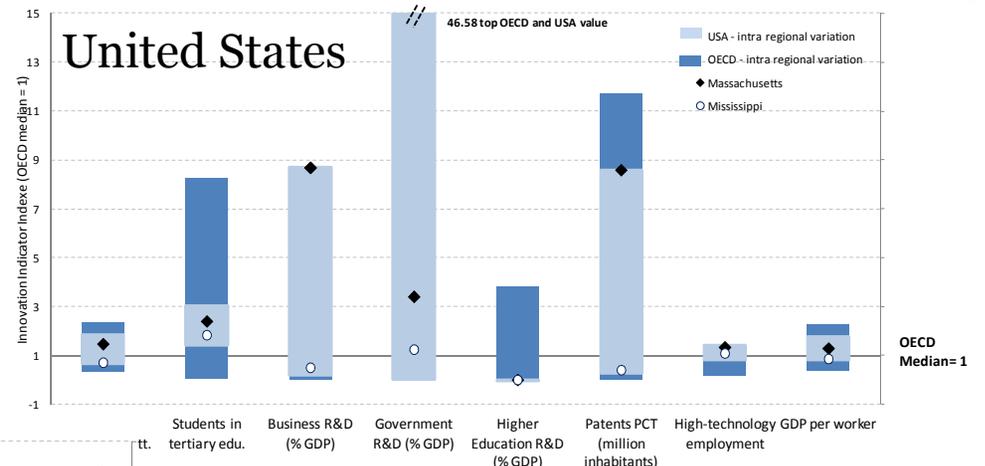
## Non-S&T driven regions

- ✓ Structural inertia or de-industrialising regions
- ✓ Primary-sector-intensive regions

# OECD peers in traditional manufacturing regions



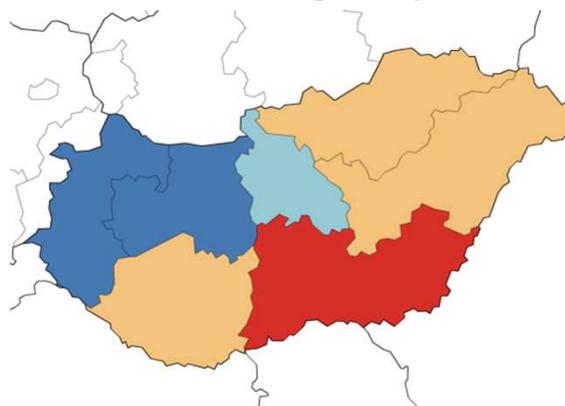
# Some countries have greater in-country diversity



Source: OECD (2011) *Regions and Innovation Policy*.

# Some countries have greater in-country diversity

## Hungary



✓ **Medium-tech manufacturing and service providers:**

Central Hungary

✓ **Traditional manufacturing regions:**

Central Transdanubia, Western Transdanubia

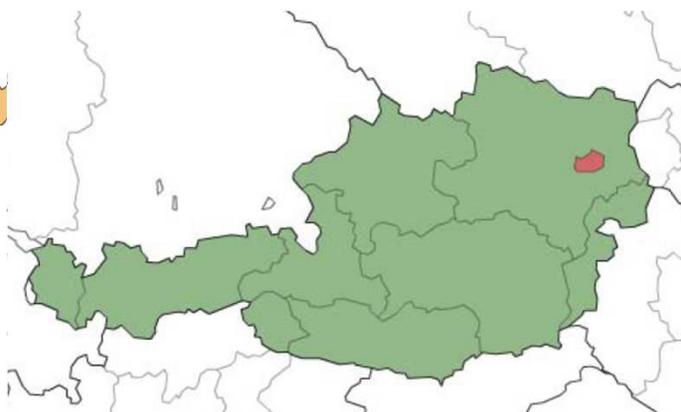
✓ **Structural inertia or de-industrialising regions:**

Southern Transdanubia, Northern Hungary, Northern Great Plain

✓ **Primary-sector-intensive regions:**

Southern Great Plain

## Austria



✓ **Knowledge intensive city/capital districts:**

Vienna

✓ **Traditional manufacturing regions:**

Burgenland, Lower Austria, Carinthia, Styria, Upper Austria, Salzburg, Tyrol, Vorarlberg

## Germany



✓ **Knowledge intensive city/capital districts:**

Berlin, Bremen, Hamburg

✓ **Knowledge and technology hubs:** Baden-Württemberg, Bavaria, Hesse,

✓ **Medium-tech manufacturing and service providers:** Lower Saxony, North Rhine-Westphalia, Saarland, Schleswig-Holstein, Rhineland-Palatinate, Saxony, Thuringia

✓ **Structural inertia or de-industrialising regions:** Brandenburg, Mecklenburg-West Pomerania, Saxony-Anhalt



# Some observations about inter-regional collaboration

# Tracking evolving types of knowledge goods

	<i>Agent-based</i>	<i>Networked</i>
<i>Private goods</i>	<b>Patents, trademarks, etc. produced by individual agents</b>	<b>Co-Patents etc. produced by networks of agents</b>
<i>Public goods</i>	<b>Open knowledge goods produced by individual agents (including public)</b>	<b>Open knowledge goods produced by social networks (e.g. wiki-model)</b>

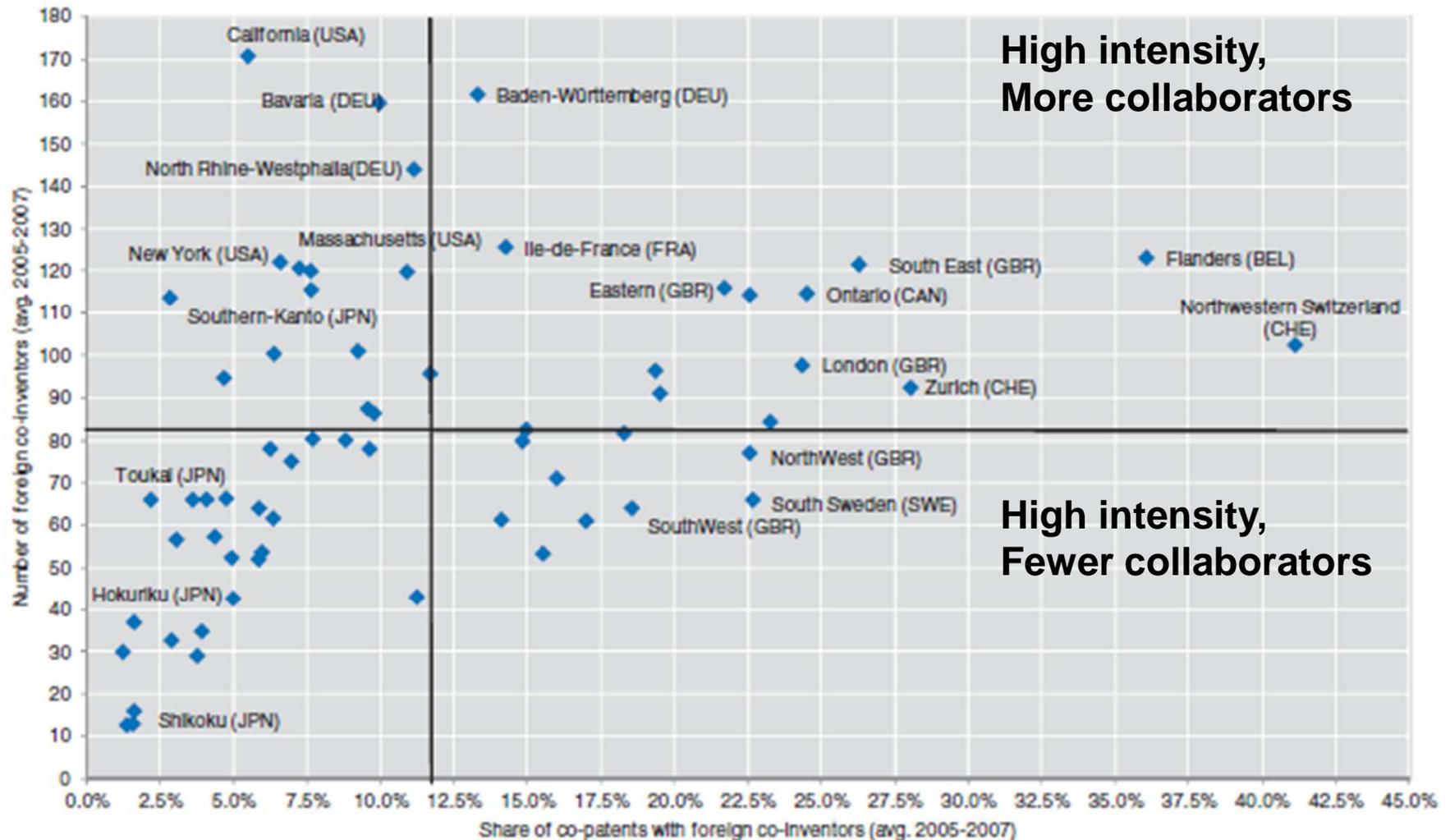
# Diversity in innovation potential also related to internal and external system linkages

International linkages

	Centralised RIS	Decentralised Dense RIS	Decentralised Sparse RIS
No hinges			
Single hinge			
Diverses hinges			

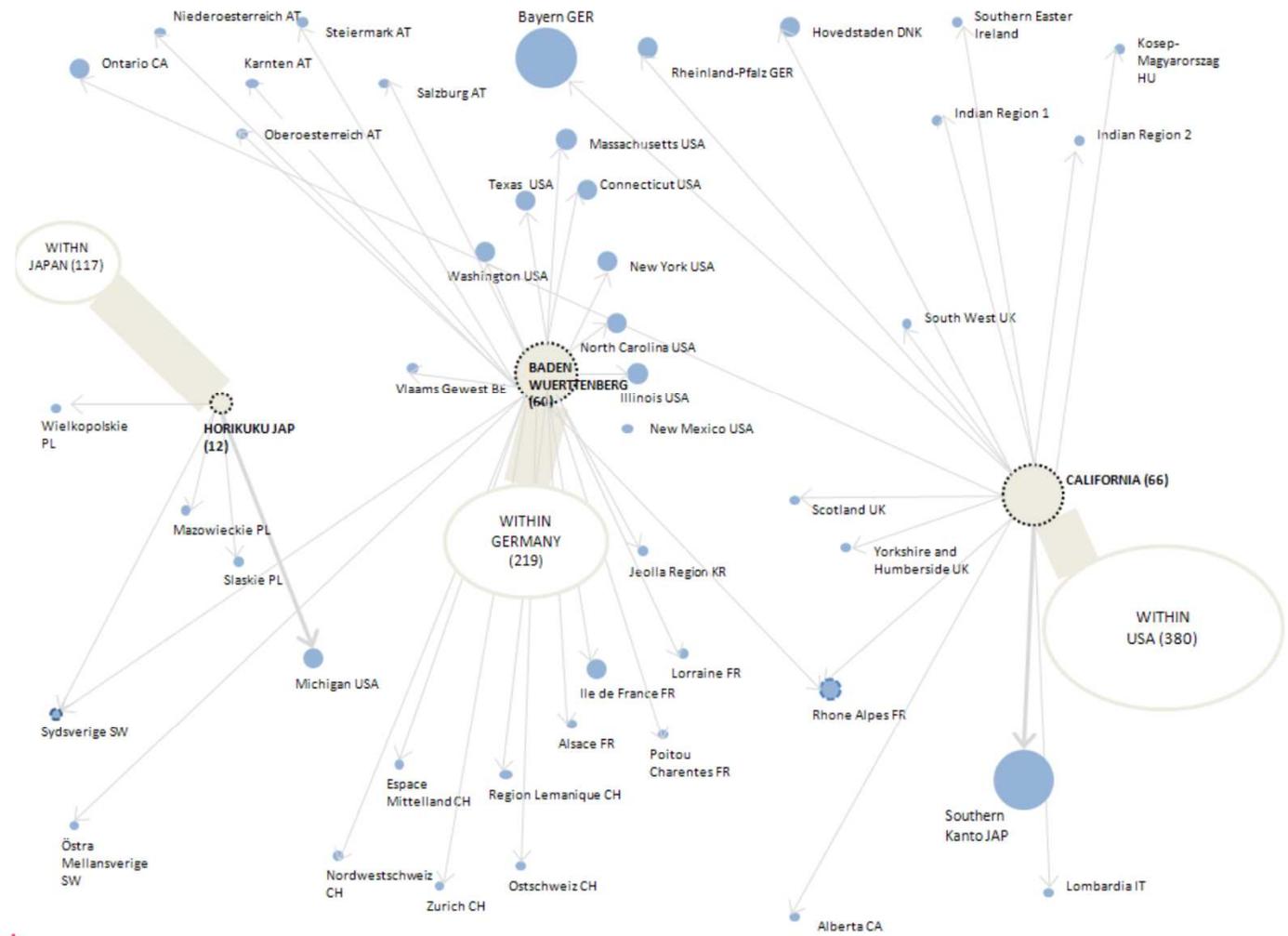
# An illustration of collaboration patterns-all sectors

Diversity and intensity of co-invention among top 20% of OECD TL2 regions  
(by number of total PCT applications), 2005-2007



# An illustration of collaboration patterns-green patents

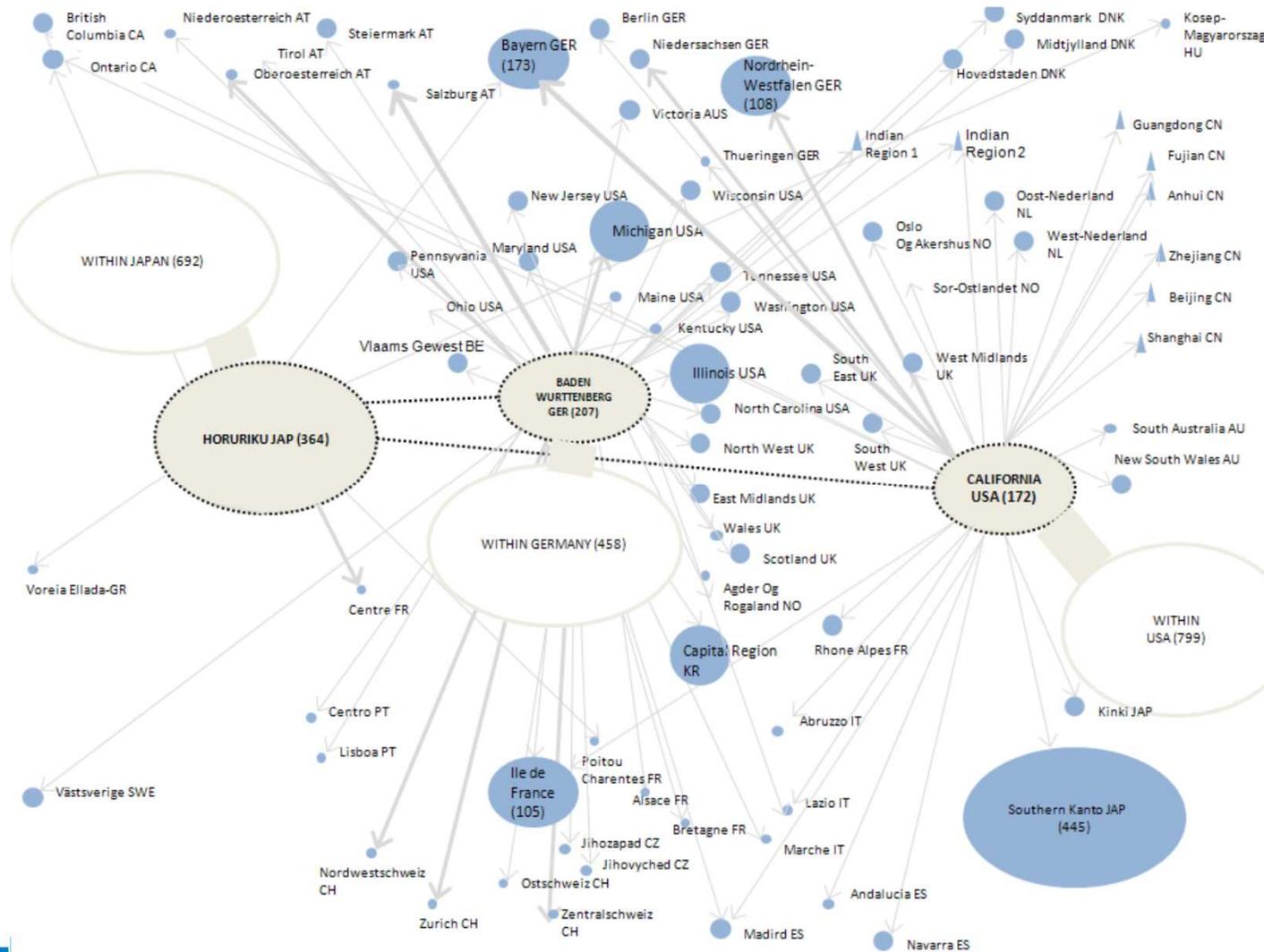
Hokuriku (Japan), Baden-Wuerttemberg (Germany) and California (US), 1995-1997



Source: OECD (2011) *Regions and Innovation Policy* with calculations based on the OECD REGPAT database.

# An illustration of collaboration patterns-green patents

Hokuriku (Japan), Baden-Wurtemberg (Germany) and California (US), 2005-2007





# The multi-level governance context for regional action

# Regional innovation policies

To open the black box, consider three elements  
*simultaneously*

1. Institutional context
2. Innovation potential
3. Type of regional strategy

# Institutional context: regions have different levels of STI competences

Regional role	Federal countries	Countries with elected regional authorities	Countries with non elected regional level / decentralised State agencies
<b>Significant control of STI powers and/or resources</b>	Austria, Belgium, Germany, Australia, Canada, Switzerland, United States, Brazil	Italy, Spain UK (Scotland, Wales, Northern Ireland)	
<b>Some decentralisation of STI powers and/or resources</b>	Mexico	France, Netherlands, Poland, Sweden (pilot regions), Denmark (autonomous regions), Norway	UK (English regions), Sweden (except pilot regions), Korea
<b>No decentralisation of STI powers</b>		Denmark, Portugal (autonomous regions), Slovak Republic, Turkey, Czech Republic, Chile, Japan	Hungary, Ireland, Portugal (mainland), Greece, Finland, Luxembourg, Iceland, New Zealand, Slovenia

# Sub-national share of R&D and/or S&T spending

Regions responsible for over 50% of public R&D or related S&T spending in countries such as Belgium, Germany and China.

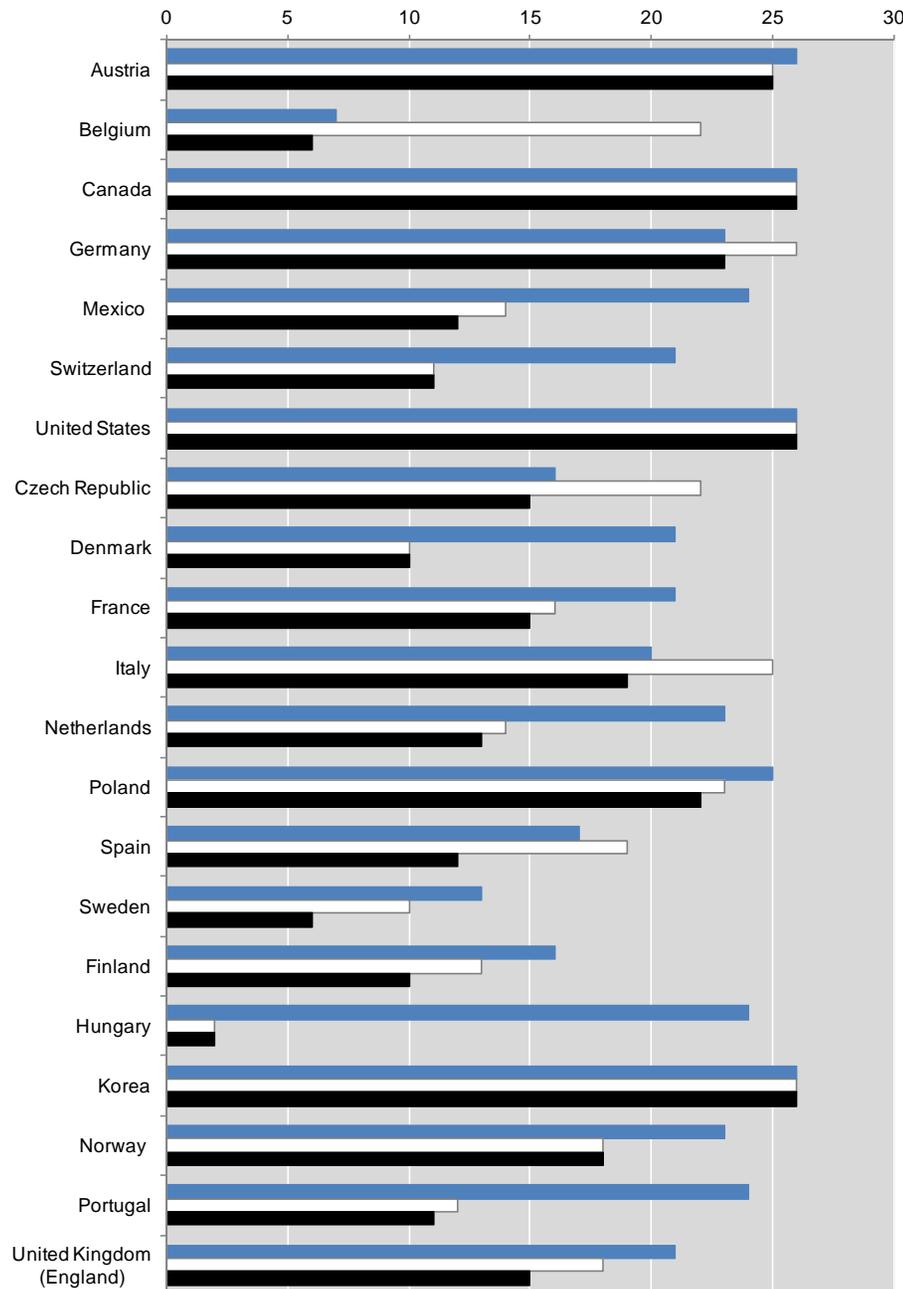
COUNTRY	SHARE OF SPENDING BY REGIONAL LEVEL	TYPE OF SPENDING REPORTED BY COUNTRY <sup>1</sup>	SOURCE
AUSTRIA	5.2% (EUR 0.4 bn out of 7.7 billion)	For innovation support, R&D, HEI	Austrian Research and Technology Report 2009
BELGIUM	79%	Government Budget Appropriation for R&D (GBOARD)	www.belspo.be (2009 data)
GERMANY	Just over 50%	Public R&D expenditure	OECD Survey, (2005 data)
CHINA	Approximately 50% (RMB 107/211 billion)	R&D and operating budgets for government and HEI research facilities	www.sts.org.cn
DENMARK	7% (EUR 142 million/2038 million)	R&D and innovation support (mainly research funding for universities)	Figures on research, 2008 ("Tal om forskning, 2008")
KOREA	Approximately 20% (USD 2.7 billion/13.5 billion)	Mainly regional science and technology parks	Regional S&T Yearbook 2009
SPAIN	Approximately 20% of the EUR 10 billion comes from the regional governments	Public R&D&I spending by Spain and its regions	National S&T Plan (CICYT, 2007)



Notes: 1. Given the lack of common measures of spending at sub-national level, such as R&D spending defined by the OECD Frascati manual, regions were asked to provide the figures they have and the type of expenses included.  
Source: OECD Survey and regional and national sources.

## Number of instruments used by level of government

■ National □ Regional ■ Common instruments



Some instruments are more frequent at regional level, some at national level, and many at both levels.

Instruments reported in common are not necessarily a duplication. They may be complementary:

- Shared financing
- Different target groups and purposes

*Notes:* National refers to the number of instruments used at national level. Regional refers to instruments reported at regional level. Common instruments refers to the number of instruments reported at both national and regional level, which includes those instruments reported in the count of national and regional instruments.

*Source:* OECD (2011) *Regions and Innovation Policy*, based on an OECD-GOV Survey.

# What are the main challenges resulting from these vertical arrangements?

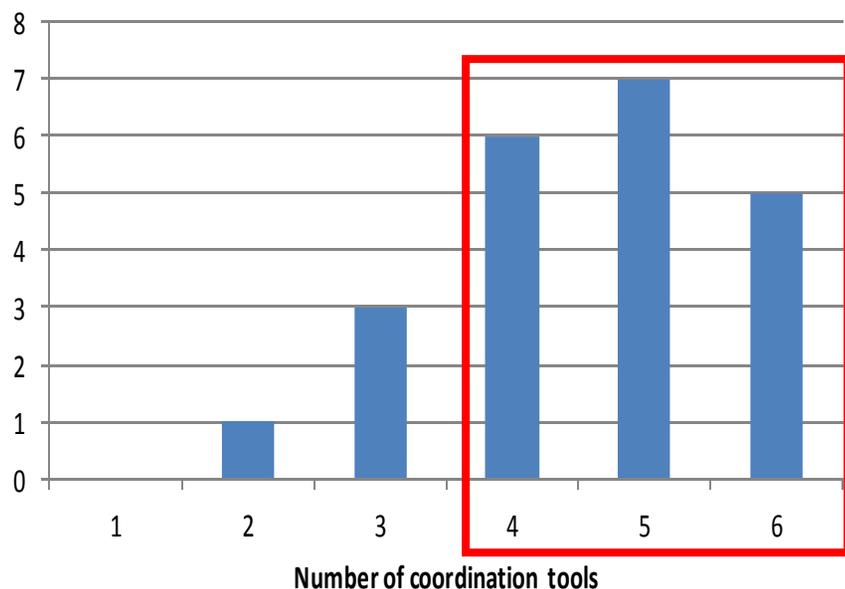
- **Information** sharing across levels of government to inform each other's policy is difficult
- **Capacity** at sub-national level to formulate and deliver policy is lacking
- **Financial** resources are insufficient for certain regions/localities to actively participate
- **Administrative** boundaries at regional and city/local level are an impediment to policy efforts
- **Policy silos** at supranational/national level undermine efforts to coordinate at the sub-national level
- **Inefficiencies** are high given the proliferation of programmes emanating from different levels
- **Gaps** in the allocation of responsibilities results in policy areas unmet at any level of government

## What are the main coordination mechanisms used?

- **Consultation process** or other alignment procedures (including national strategy)
- **Ongoing dialogue** to inform the policy development process across levels
- **Agencies** for regional development or regional innovation with national representation
- **Agreements/contracts** for financing or co-financing of regional actions
- **Project co-financing** (for individual projects)
- **National territorial representatives** (prefecture, S&T Ministry, etc.)

# A menu of tools to work with other levels of government, and the private sector

Multiple tools are used in any given country (generally 4 or more)

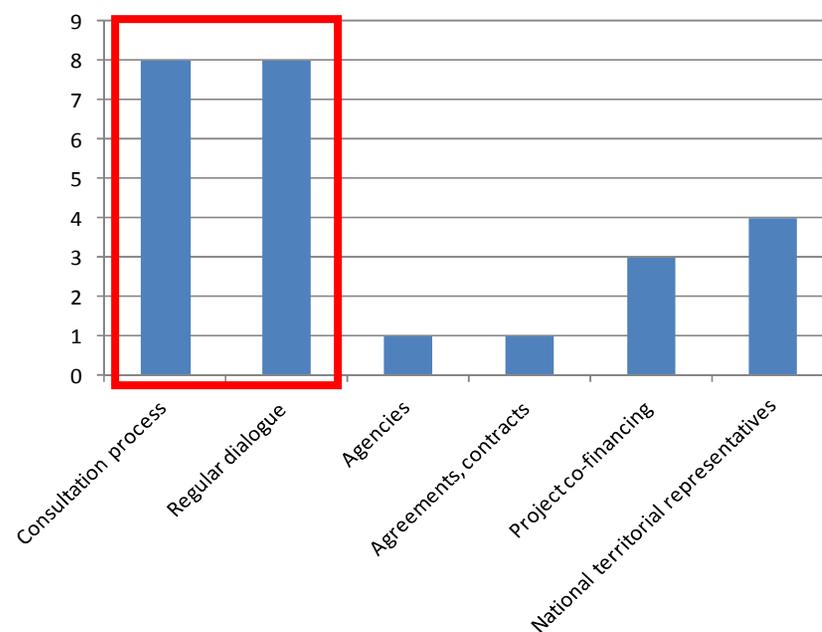


Note: 22 reporting countries (20 OECD, 2 non-OECD countries).

Source: OECD (2011) *Regions and Innovation Policy*, OECD Publishing, Paris based on OECD-GOV Survey on the Multi-level Governance of Science, Technology and Innovation Policy.



Regular dialogue and consultation rated most important among tools



Note: 24 reporting countries (20 OECD, 4 non-OECD countries), one country reported two top tools.

Source: OECD (2011) *Regions and Innovation Policy*, OECD Publishing, Paris based on OECD-GOV Survey on the Multi-level Governance of Science, Technology and Innovation Policy.

# Some regional choices

# There is no one recipe, but there is a menu for regional strategic choices

● main priority; ◎ strategic choice; ○ low priority

Type of region	Building on current advantages	Supporting socio-economic transformation	Catching up
<b>Knowledge hubs</b>			
Knowledge and technology hubs	●	◎	○
Knowledge-intensive city/capital districts	●	◎	○
<b>Industrial production zones</b>			
US states with average S&T performance	●	◎	○
Service and natural resource regions in knowledge-intensive countries	◎	◎	●
Medium-tech manufacturing and service providers	◎	●	○
Traditional manufacturing regions	○	◎	●
<b>Non-S&amp;T-driven regions</b>			
Structural inertia or de-industrialising regions	◎	●	◎
Primary-sector-intensive regions	○	◎	●

# Range of tools to implement goals

	Knowledge Generation	Knowledge Diffusion	Knowledge Exploitation
Traditional instruments	<ul style="list-style-type: none"> <li>Technology funds</li> <li>R&amp;D incentives/supports/grants</li> <li>Support to scientific research and technology centres</li> <li>Support to infrastructure development</li> <li>Human capital for S&amp;T</li> </ul>	<ul style="list-style-type: none"> <li>Science parks</li> <li>Technology Transfer Offices and schemes</li> <li>Technology brokers</li> <li>Mobility schemes</li> <li>Talent attraction schemes</li> <li>Innovation awards</li> </ul>	<ul style="list-style-type: none"> <li>Incubators</li> <li>Start ups support innovation services (business support and coaching)</li> <li>Training and awareness-raising for innovation</li> </ul>
Emerging Instruments	<ul style="list-style-type: none"> <li>Public private partnerships for innovation</li> <li>Research networks/poles</li> </ul>	<ul style="list-style-type: none"> <li>Innovation vouchers</li> <li>Certifications/ accreditations</li> </ul>	<ul style="list-style-type: none"> <li>Industrial PhDs</li> <li>Support to creativity Innovation benchmarking</li> </ul>
Experimental instruments	<ul style="list-style-type: none"> <li>Cross-border research centres</li> </ul>	<ul style="list-style-type: none"> <li>Open source-Open science markets for knowledge</li> </ul>	<ul style="list-style-type: none"> <li>Regional Industrial Policy</li> <li>Innovation-oriented public procurement</li> </ul>
	<ul style="list-style-type: none"> <li>Competitiveness poles</li> <li>Competence centres</li> <li>New generation of scientific and technological parks and clusters</li> <li>Venture and seed capital</li> <li>Guarantee schemes for financing for innovation</li> </ul>		

# Example: regional innovation agencies

	Traditional focus	New approaches
Place of agency	Outside the system	Actor in the system
Role	Top-down provider of resources	Facilitator, node in the system
Rationale for intervention	Market failures	Systems failures, learning failures
Mission	Redistributing funds	Identifying and reinforcing strengths in the system: a change agent
Instruments	Isolated	Policy mix
Accountability and control mechanisms	Administrative and financial	Strategic, goal-oriented, additionality
Autonomy	Focused on execution	Expanded to strategic decisions

# Common pitfalls in regional strategies

- One-size-fits-all approach (regions can't all be Silicon Valley or a leading biotech hub)
- High-tech bias (ignoring broader approach to innovation)
- Lack of sufficient private sector involvement
- Administrative boundary focus and not functional areas
- Lack of measurement and evaluation of progress

# Open questions and future challenges



- Reshaping of boundaries for production and innovation dynamics & for policy action (including cross-border aspects)
- Dual nature of knowledge (public and private good) & global/local linkages
- Relationship between location & innovation dynamics (fixed and mobile factors)
- Agglomeration and diffusion patterns & the “social cohesion” agenda (ex. Regional impacts of excellence targeting in research)