



Smart Specialization Strategy as a tool for change

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Commissione Europea

Centro Comune di Ricerca

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Lessons from past RISs - From RIS to RIS3

Widespread experience of nat./reg. innovation strategies in the framework of the EU Cohesion Policy (on-going ex-post evaluation)

Inward-looking

- Lack of international and trans-regional perspective
- Not taking into account multi-governance issues.

Lack of Policy Ownership

- Lack of understanding of RI systems as an interaction of interdependent players, policies and institutions.
- Failure to set the networking process in motion or to keep it going.

Innovation policies not in tune with industrial/economic context & Excessive focus on technology supply/R&D

- No sound analysis of regional assets and strengths.
- Too much public intervention in R&D, not enough business-driven.
- Too little emphasis on applications and diffusion.
- 'Picking winners syndrome' (no priorities identified)

Smart Specialization

A sustainable/inclusive/smart process

- Ex-ante **conditionality** in the new cohesion policy 2014-2020.
- Evidence-based **priority** setting in times of scarce resources (value for money).
- Focus on regional **comparative advantage**, a limited set of research and innovation priorities (not necessarily on sectors).
- Accumulation of **critical mass**
- Strategies in line with **NRPs** and Europe 2020 Strategy.
- No top-down decision, but **entrepreneurial discovery process** involving key stakeholders
- **Sourcing** knowledge rather than re-inventing the wheel.
- Excel / Improve in something **specific**
- **Monitoring** and review system

RIS3 is an Economic Transformation Agenda

RIS3 "Research and innovation strategies for smart specialisation" is a dynamic and evolutionary process – "not a structure"- deeply grounded in an entrepreneurial discovery process (not a one-off action) where Governments are rather facilitators...than in a position of command and control.

*RIS3 is for...
innovation leaders
and for
those lagging behind !*



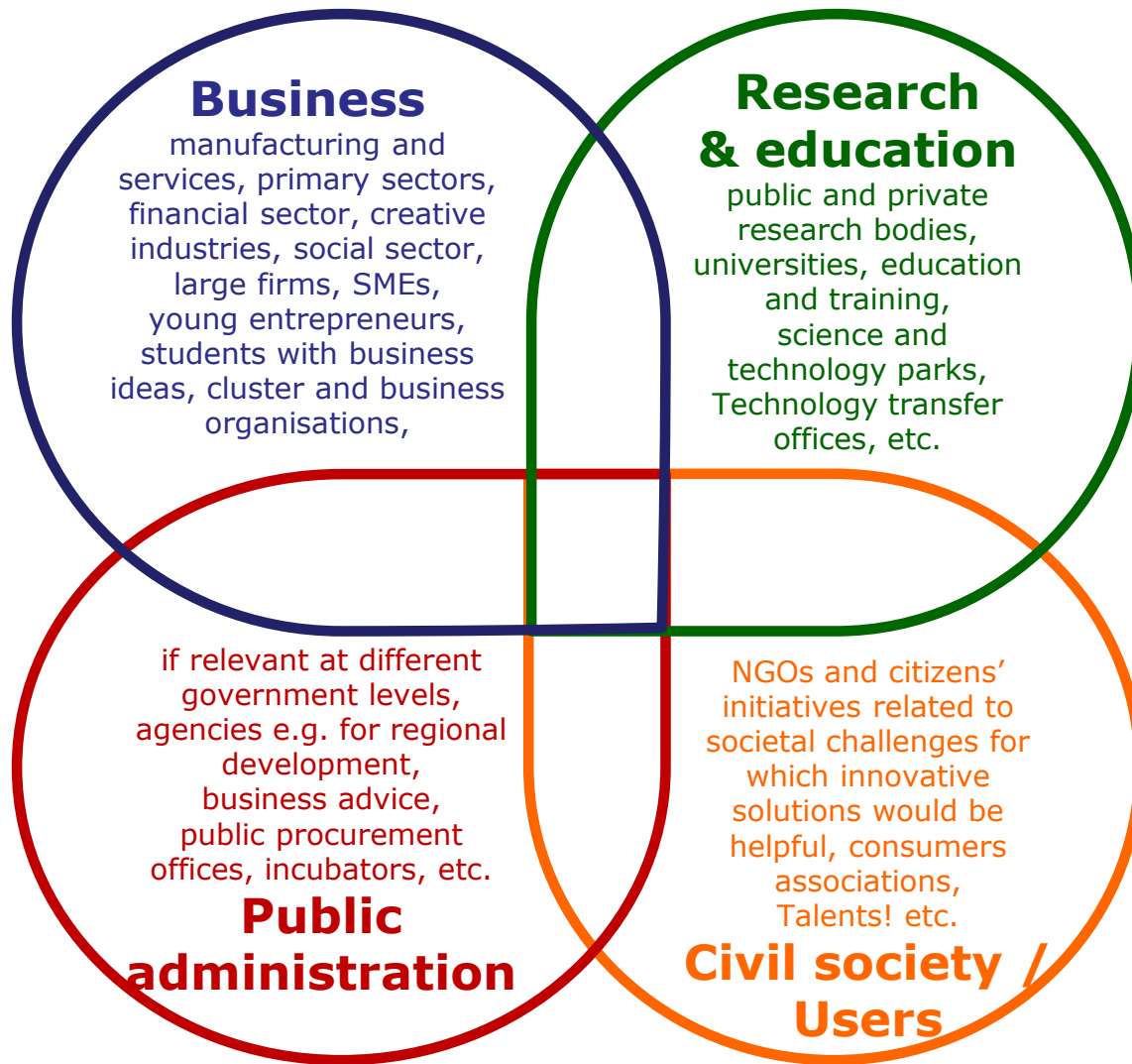
- Smart specialisation



- Behavioural change



- Growth and jobs



How to start entrepreneurial discovery process

Kick-start with consultation in quadruple helix:

Detect potential boundary-spanners between different stakeholder / interest groups, new innovative entrepreneurs, hidden champions, or persons with a potential for this is one of the aims of this first step. ...

See [new annex III of RIS3 Guide](#)

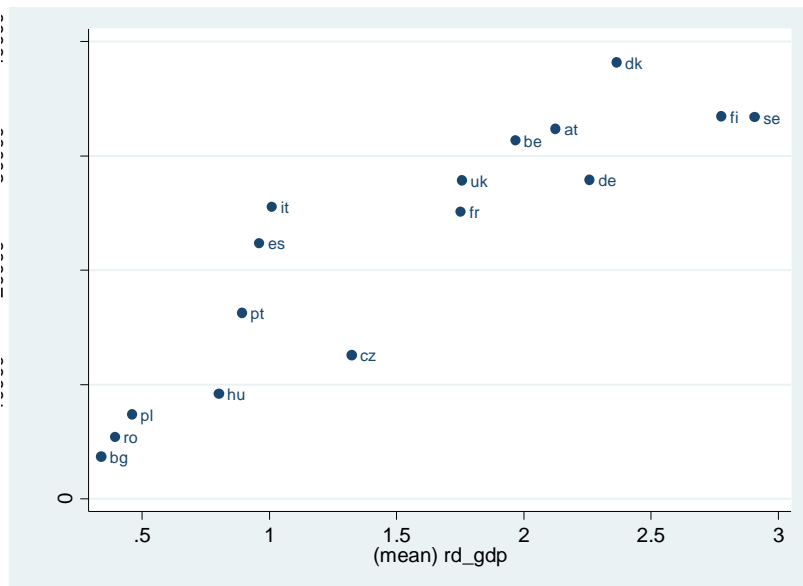


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Smart Investments

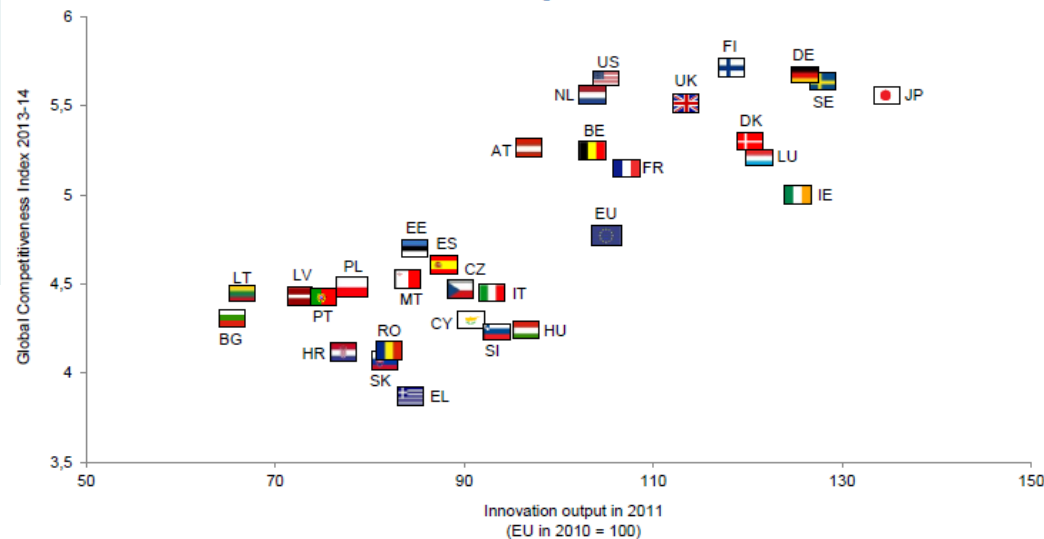
Why do we care about (Societal) Innovation?

Plenty of evidence of the positive relationship between R&D, education, innovation and growth...



**R&D versus GDP
per capita**

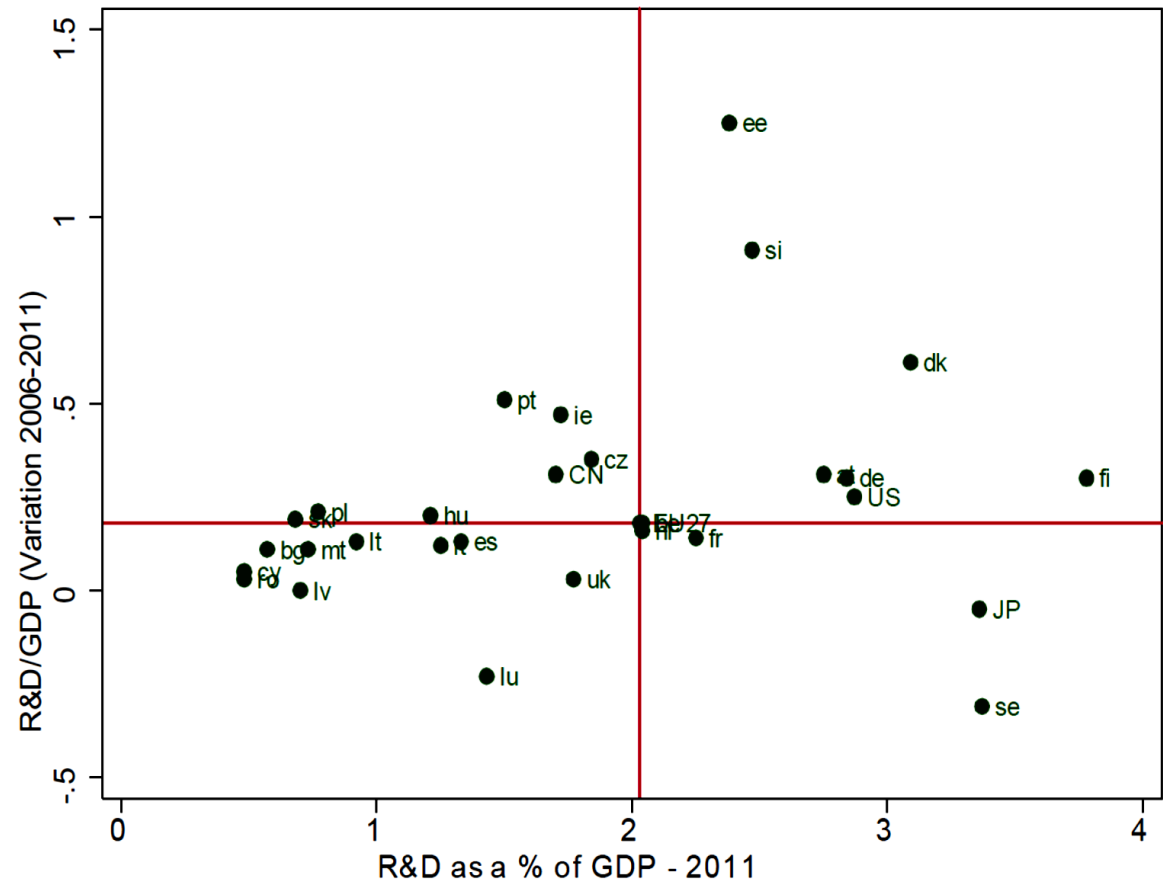
Global competitiveness index *versus* innovation output indicator



R&D Intensity

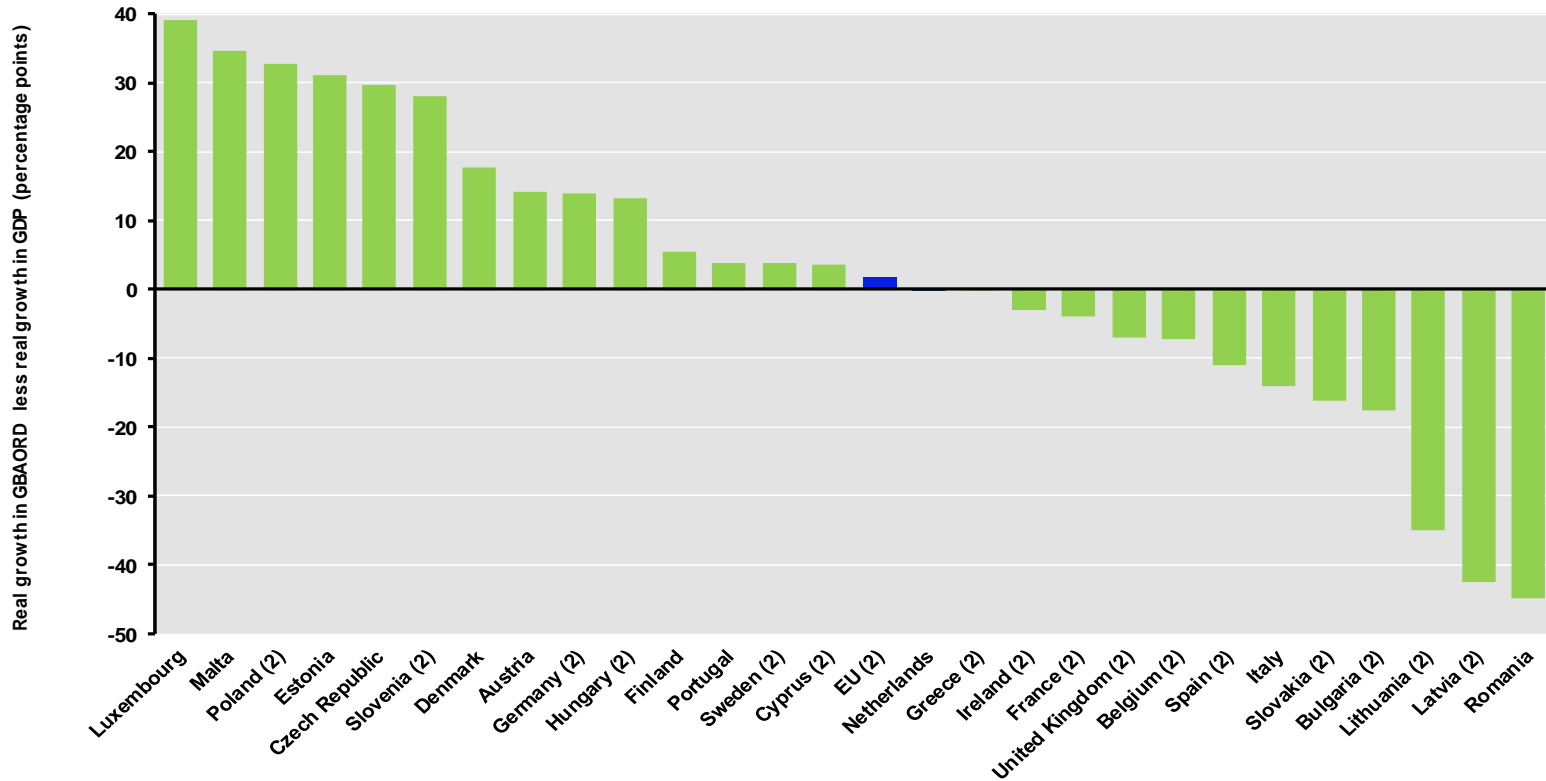
Competitiveness,
wellbeing and
societal challenges...

Climate change
Health and ageing
Use of natural resources
Energy security
Clean transport
Land use
....





Government investment in the future
The difference in percentage points between real growth ⁽¹⁾ in Government budgets for R&D (GBAORD) and real growth ⁽¹⁾ in GDP, 2008-2012 ⁽²⁾



Source: DG Research and Innovation - Economic Analysis Unit

Data: Eurostat

Notes: (1) Real growth was calculated from values in PPS€ at constant 2000 prices and exchange rates.

(2) EL: 2007-2008; PL: 2009-2011; BE, BG, DE, IE, ES, FR, CY, LV, LT, HU, SI, SK, SE, UK, EU: 2008-2011; PL 2009-2011.

(3) Data for 2012 are provisional.

R&I Strategies for Smart Specialisation (RIS3) are integrated, place-based economic transformation agendas...

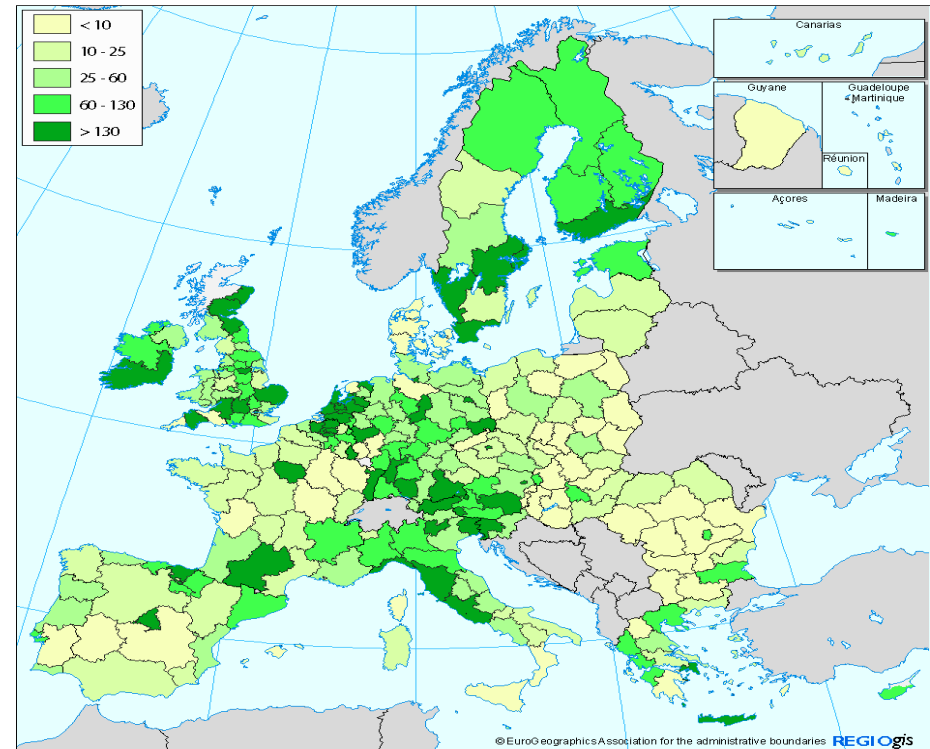
Recognizing the Importance of Territorial Dimension

- Strong Territorial Impact in space-blind policies
- For instance, less developed regions are less successful as FPs funding recipients

(Source: 5th Cohesion Report)

7th Framework Programme, average funding per head

Index, EU27 = 100



The four Cs of smart specialization

(Tough) Choices and Critical mass

Limited number of priorities on the basis of own strengths and international specialisation – avoid duplication and fragmentation in the ERA – concentrate funding sources

Competitive Advantage

Mobilise talent by matching R&D&I capacities and business needs through an entrepreneurial discovery process

Connectivity and Clusters

Develop world class clusters and provide arenas for related variety/cross-sector links internally in the region and externally towards specialised technological diversification

Collaborative Leadership

Efficient innovation systems as a collective endeavour based on public-private partnership – experimental platform to give voice to un-usual suspects

RIS3 guide - Key steps for developing a RIS3

Step 1 – Analysis of regional context/potential

Step 2 – Governance - EPD

Step 3 – Vision for the future

Step 4 – Selection of priorities

Step 5 – Policy mix

Step 6 – Monitoring and evaluation



A stepwise approach for RIS3 design (1)

1. Analysis of regional context and potential for innovation

Differentiation is at the very heart of RIS3. Exploit related variety, suggesting that a regional economy can build its competitive advantage by diversifying its unique, localised knowledge base into new combinations/innovations which are close or adjacent to it

2. Governance: Ensuring participation and ownership

Potential actors relevant to the RIS3 process span from public authorities to universities and other knowledge-based institutions, investors and enterprises, and civil society actors who can contribute to the benchmarking and peer review processes.

3. Elaboration of an overall vision for the future of the region

Development of a shared and compelling vision on the economic development potential of the region and the main direction for its international positioning. It is a highly political step.

A stepwise approach for RIS3 design (2)

4. Identification of priorities

Channelling resources towards investments that have the potentially highest impact on the regional economy. Identification of a limited number of innovation- and knowledge-based development priorities.

5. Definition of coherent policy mix, roadmaps and action plan

Combine the adoption of strategies with an agreement on an Action Plan and even the simultaneous launch of pilot projects. This planning process involves both the incorporation of existing programmes and inclusion of new instruments.

6. Integration of monitoring & evaluation mechanisms:

- Indicators scoring the region vs. the score of its MS or other regions.
- Result indicators selected for each component of the strategy.
- Output indicators measuring the progress of the actions undertaken.

Monitoring differs from evaluation in two main respects (scope and actors involved).



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Main activities of S3 Platform in support of the countries/regions preparing RIS3

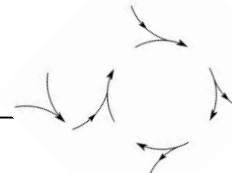


7. Research agenda

1. The RIS3 methodological Guide



2. Peer Review workshops & transnational learning



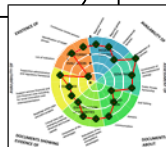
3. Country- and Macro-region events and targeted seminars at JRC/IPTS

4. RIS3 assessment and support to REGIO desks

5. Thematic workshops & working groups

6. Interactive tools, S3 Newsletter and Website

Eye@RIS3

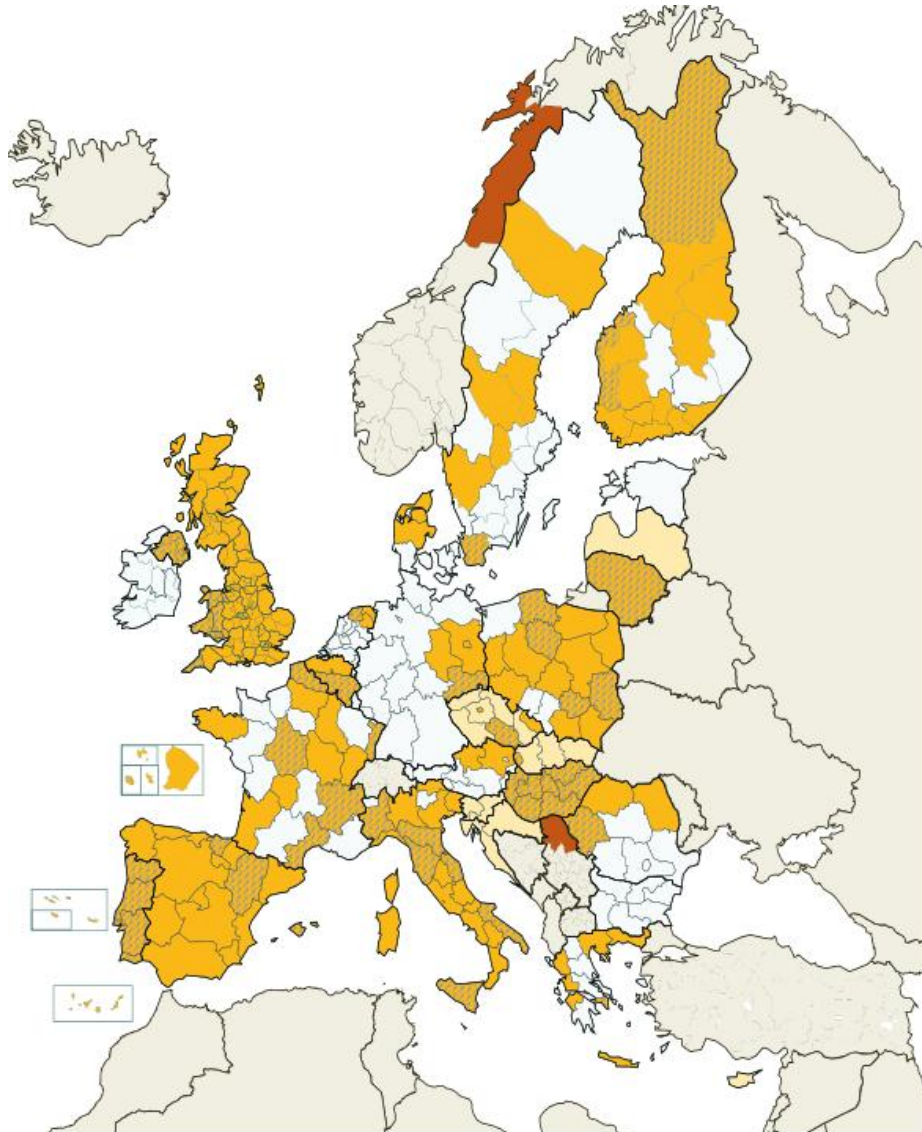


Our experience at peer-review workshops

We focus
on the novelties

We discuss
of the elements
of change







134 EU regions


+ 11 EU countries
+ 2 non-EU regions

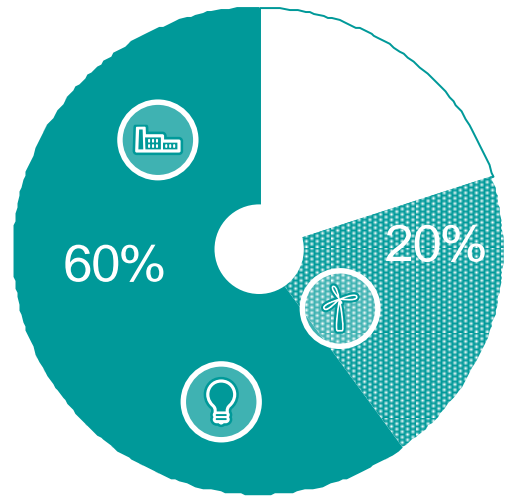
- Designed to assist regions and countries in developing RIS3
- Launched in June 2011
- Managed by JRC-IPTS in Seville
- Monitored by a Steering Team incl. DG REGIO, RTD, ENTR, EAC, CNECT, AGRI
- Input from a Mirror Group of European high-level experts and network representatives

Up to €100 billion ESIF money could be made available for innovation, bolstering over 100 smart specialisation strategies

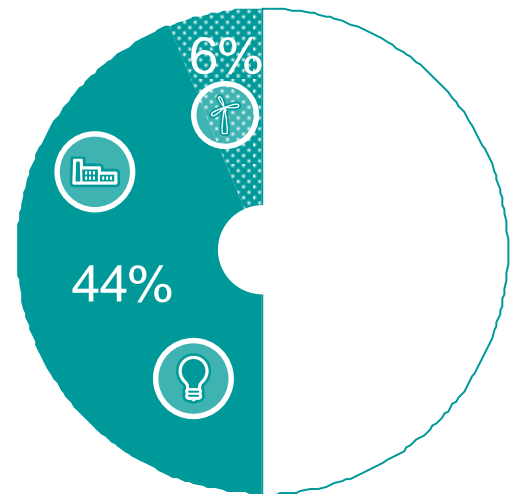
Thematic concentration changes:

-  Research and Innovation
-  SMEs competitiveness

-  Energy efficiency and renewable energy
- + ICT Access and Use



Developed regions and transition regions



Less developed regions

Flexibility (different regions present different needs)
Special arrangements for the previously convergence regions

What does the RIS3 ex-ante conditionality apply to?

Investment priorities under TO:

1. Research and innovation

2. **ICT use** (*ICT based innovation* ,
"digital growth")

ICT access and quality
(broadband)

3. Competitiveness of SMEs

Ex ante conditionalities:

Smart specialisation strategies

Digital growth strategy can be independent, but for sake of coherence it is **recommended to integrate it in RIS3**

Next Generation Access / Network Plan

Small Business Act

Recommended:
Include in the RIS3 envisaged support to SME innovation

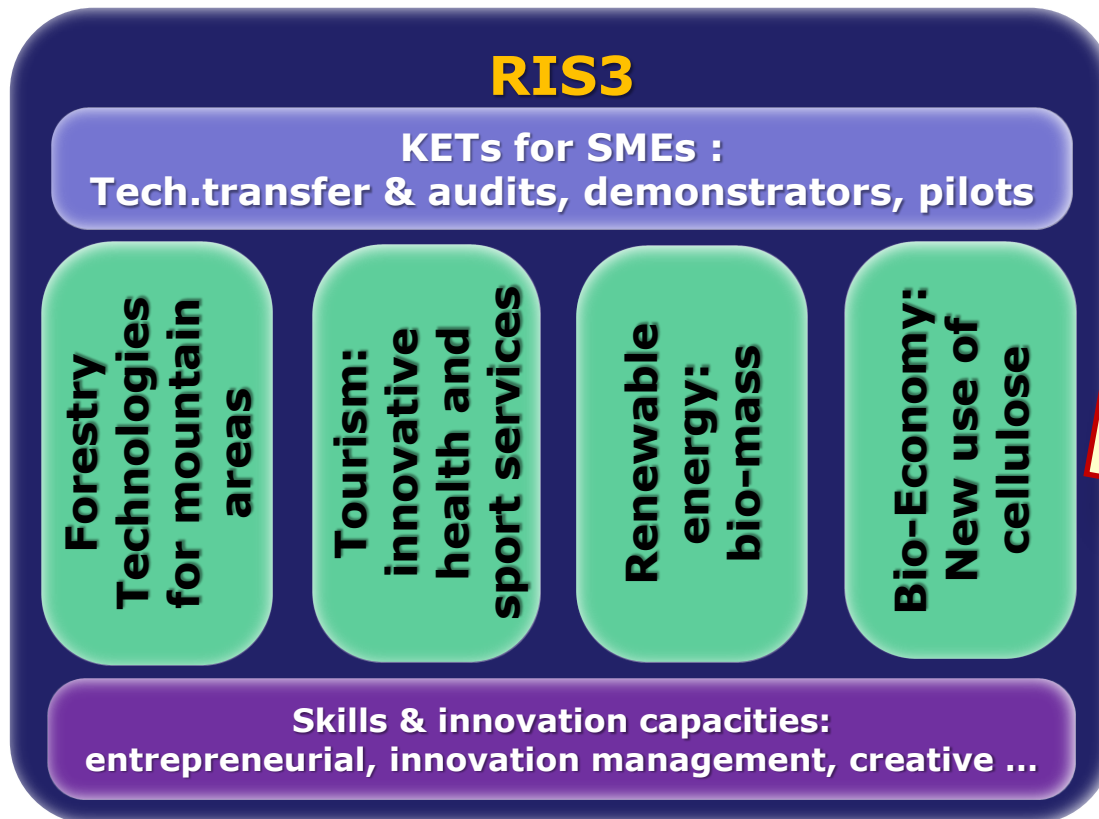
What are the key elements for accepting a strategy as "RIS3"?

- **SWOT or similar analysis.** Strengths, weaknesses, opportunities & threats are comprehensive, based on recent data, surveys, stakeholder consultations etc. & relative to other countries / global markets.
- **R & I priorities.** Specialisation fields fit to trigger knowledge-driven economic transformation in a territory and are differentiating it from others / diversify existing assets (instead of generic sectors or technologies). In line with national reform programme, if relevant. Not only research, but also innovation!
- **Concentration of resources on limited set of priorities.** Not trying to please everyone. If relevant: elimination process.

What are the key elements for accepting a strategy as "RIS3"?

- **Measures to stimulate private investment.** Merely political target setting or copying from other regions proved to be unfit! Better: conceived in consultation with enterprises + tested in socio-economic context of the region / MS.
- **Monitoring mechanism.** Keep ball rolling from entrepreneurial discovery process of strategy design to check progress towards objectives; be prepared for adjustments if necessary given the fast technological and market developments.
- **Outline of available R&I budgetary resources.** Just enough detail to allow seeing where OP investments fit in / are needed + indicative multi-annual budget plan if R&I infrastructure and capacity building foreseen = important to foresee ESFRI implementation and meeting of other EU priorities and needs

Hypothetical Structure of a RIS3



Fields of "specialisation" ... or rather differentiation, diversification, critical mass, future potential ...

RIS3 ≠ reinventing the wheel!
If an innovation strategy or support system exists, build on it!

Technical Assistance may be used to develop and monitor the RIS3

Relation between regional – national RIS3

Partnership Agreement, OP ...

National level RIS3

Consolidation

RIS3 Region A

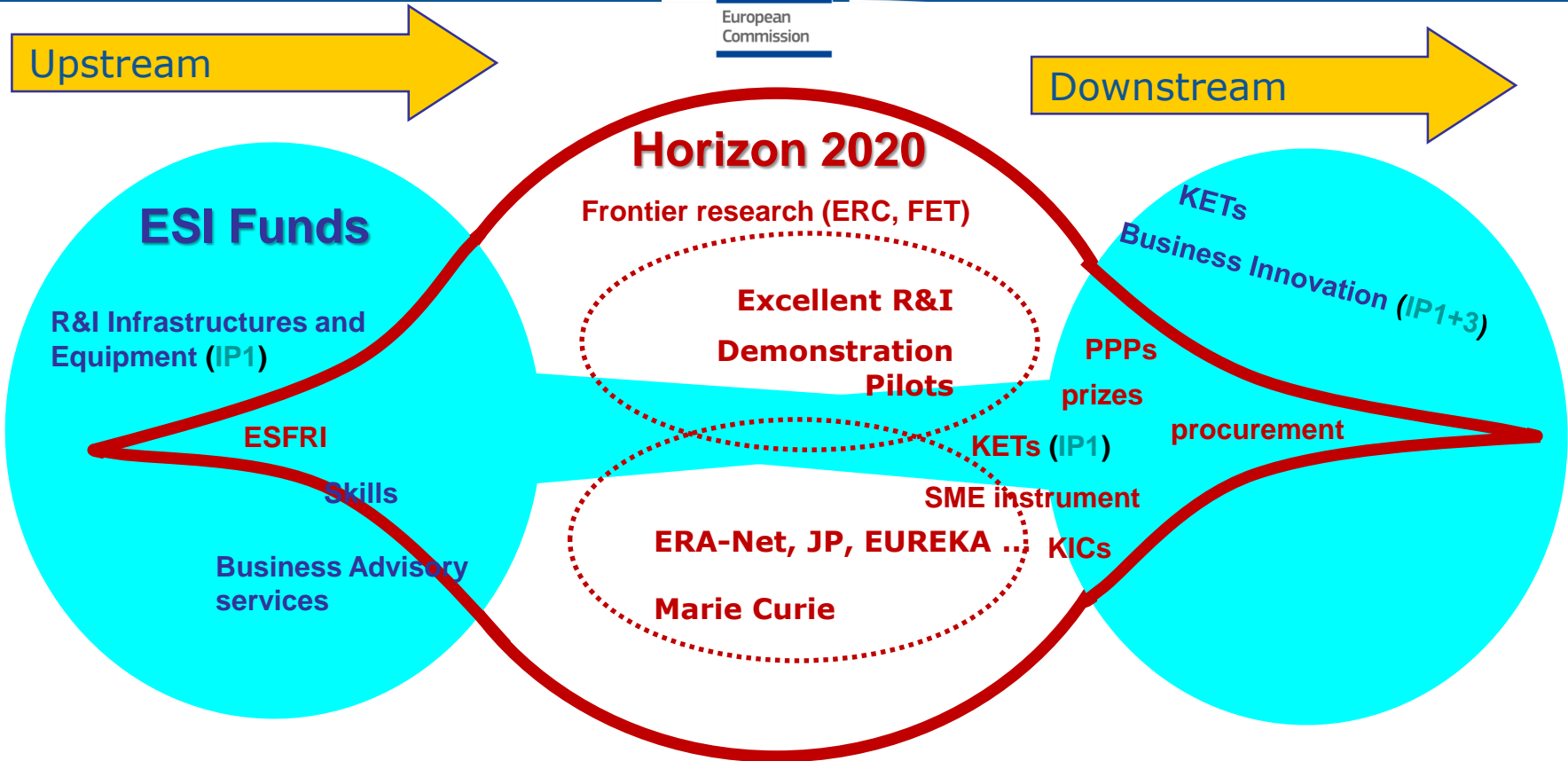
RIS3 Region B

RIS3 Region C

RIS3 Region D

Hypothetical
example
MS without
strong
regional
innovation
competences:

How about synergies with Horizon2020?



"Stairway to Excellence"

National/Regional R&I systems

"Research Excellence"

Hopefully also excellence, but "Innovation Excellence"



Capacity Building

R&D

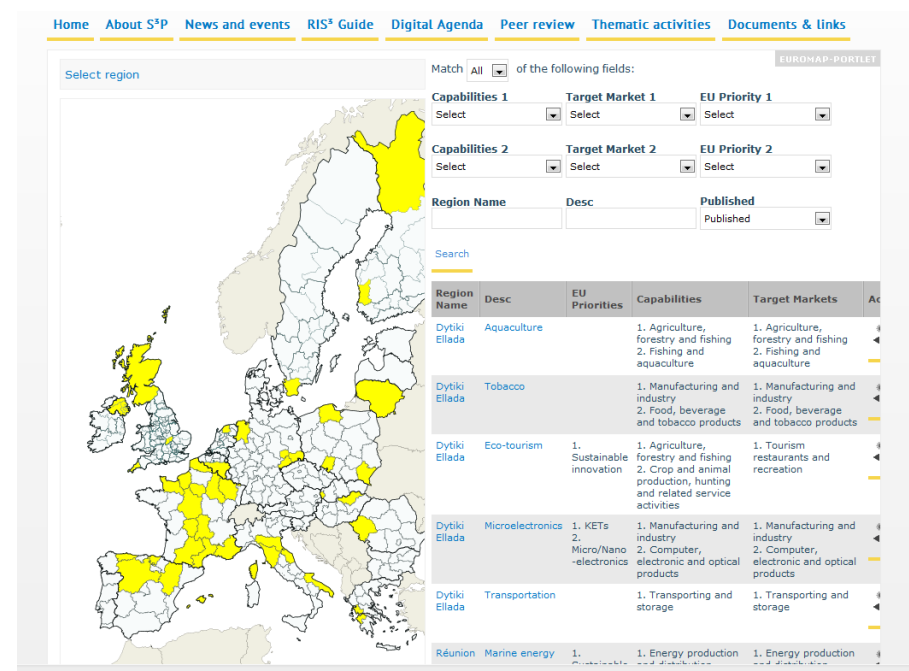
Innovation

Market

IP: Investment Priorities under the R&I thematic objective of the ERDF Regulation

Eye@RIS3 – an online database for RIS3 priorities

- enable Regions to position themselves,
 - to find their unique niches
 - to seek out potential partners for collaboration
- Data from peer reviews, expert assessment reports, and national reports
 - Data on regions, then each priority has four dimensions, short text based description, and three categories with fixed two level categories, connection to EU prioritised policies, regional capabilities and target markets.
 - The data base can be searched in all these dimensions
 - And data can also be uploaded
 - Categories are not perfect matches, but serves the purpose of an easy to use tool to give initial indications of where regions are aiming with their priorities.



Region Name	Desc	EU Priorities	Capabilities	Target Markets
Dytiki Ellada	Aquaculture		1. Agriculture, forestry and fishing 2. Fishing and aquaculture	1. Agriculture, forestry and fishing 2. Fishing and aquaculture
Dytiki Ellada	Tobacco		1. Manufacturing and industry 2. Food, beverage and tobacco products	1. Manufacturing and industry 2. Food, beverage and tobacco products
Dytiki Ellada	Eco-tourism	1. Sustainable innovation	1. Agriculture, forestry and fishing 2. Crop and animal production, hunting and related service activities	1. Tourism restaurants and recreation
Dytiki Ellada	Microelectronics	1. KETs 2. Micro/Nano-electronics	1. Manufacturing and industry 2. Computer, electronic and optical products	1. Manufacturing and industry 2. Computer, electronic and optical products
Dytiki Ellada	Transportation		1. Transporting and storage	1. Transporting and storage
Réunion	Marine energy	1. Sustainable innovation	1. Energy production and distribution	1. Energy production and distribution

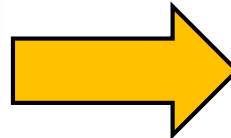
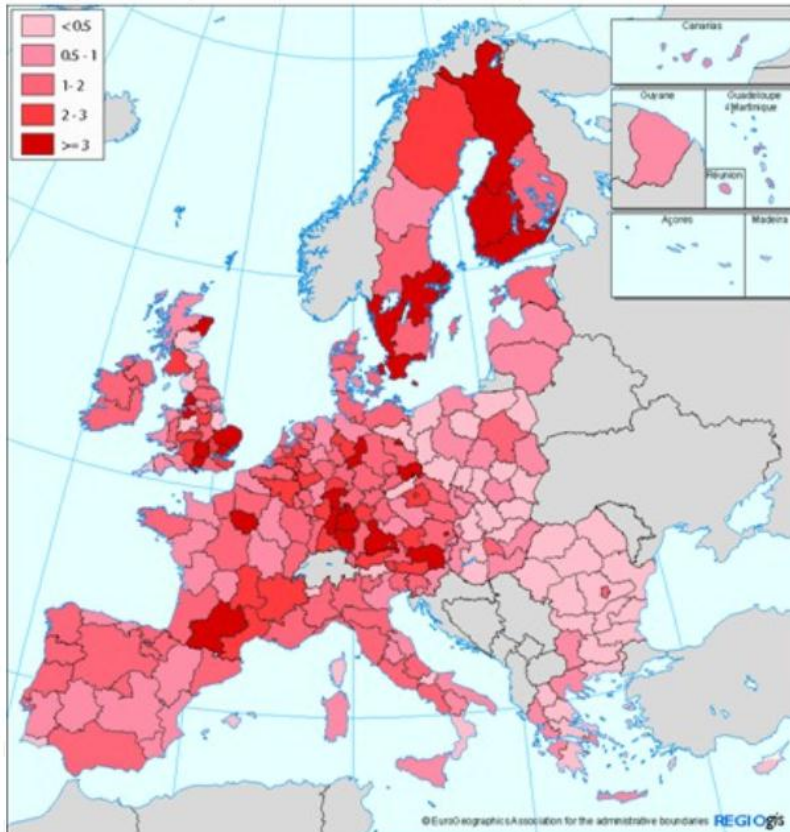
Modelling Tools - RHOMOLO

- RHOMOLO is a "Spatial Computable General Equilibrium model" developed by the JRC for DG REGIO to produce an ex-ante impact assessments of regional policy, including the Cohesion Fund and the Structural Funds (ESF; ERDF, notably on Infrastructures/R&D);
- It can be integrated with other models focusing on other scales of analysis (QUEST) or on specific aspects such as transport costs (TRANSTOOL).
- 268 NUTS2 EU regions + RoW;
- 6 industries, each with industry-region specific "technology" (in the economic sense of "production functions").
- It includes "New Economic Geography" features implying that:
 - ✓ Space matters (for economic performance & consumer welfare);
 - ✓ Policy shocks spill over from one region to the next;
 - ✓ Gains (and losses) from policy can be spatially localised.

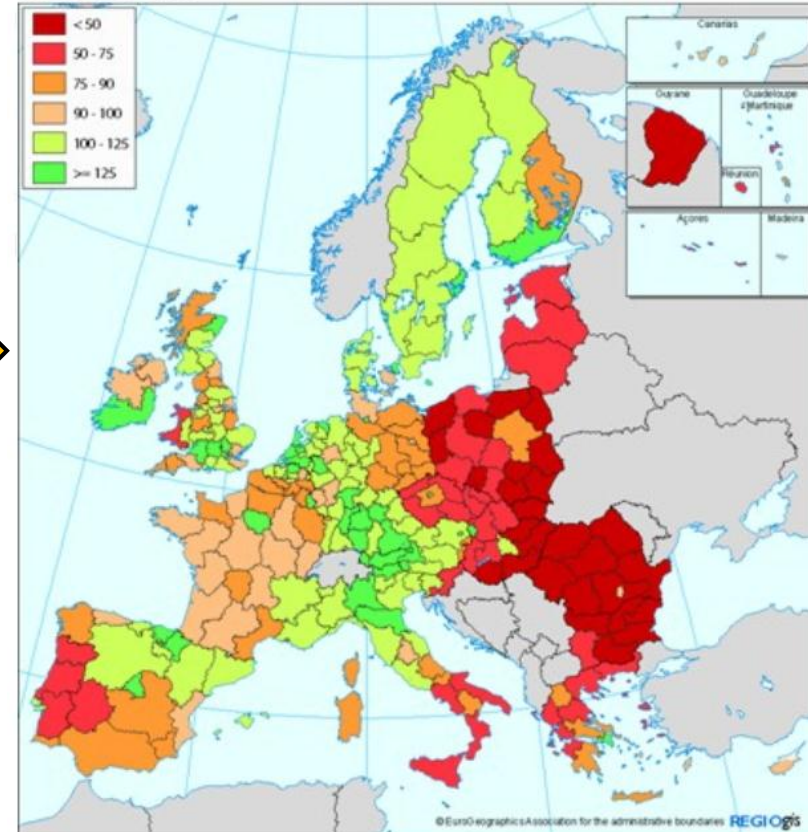
Shocks flow from **policy** to **R&D** to **GDP**



Total expenditure on R&D, 2007
% of regional GDP (The Europe 2020 R&D target is 3%)



GDP per head (PPS), 2007
Index, EU27 = 100





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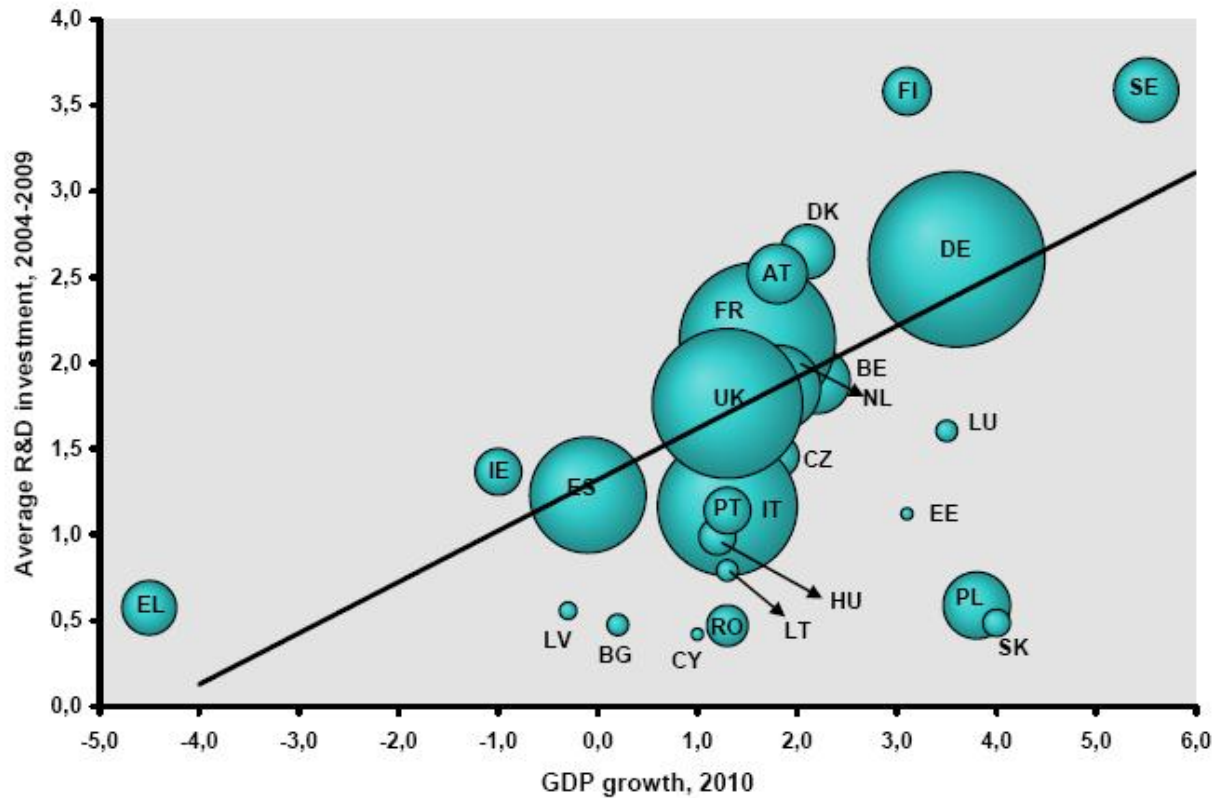
Transnationally Coordinated R&D 2012

Country	GBAORD	National public funding to transnationally coordinated research				Share of national public funding to transnationally coordinated research in total GBAORD				Share of different types of contributions of total national public funding to transnationally coordinated research			
		National contributions to:				National contributions to:				National contributions to:			
		Total	Trans-national public R&D performers	Europe-wide transnational public R&D programmes	Bilateral or multilateral public R&D programmes	Total	Trans-national public R&D performers	Europe-wide transnational public R&D programmes	Bilateral or multilateral public R&D programmes	Total	Trans-national public R&D performers	Europe-wide transnational public R&D programmes	Bilateral or multilateral public R&D programmes
		EUR million				percentage				percentage			
BE	2375.046	212.581	31.246	179.209	2.126	8.95	1.32	7.55	0.09	100	14.70	84.30	1.00
BG	99.713	3.378	2.495	0.467	0.415	3.39	2.50	0.47	0.42	100	73.86	13.83	12.29
CZ	893.930	20.411	3.788	15.327	1.298	2.28	0.42	1.71	0.15	100	18.55	75.09	6.36
DK	2288.359	.	.	.	.	.	.	.	.	.	.	.	.
DE	23015.600	937.400	255.800	681.600	.	4.07	1.11	2.96	0.00	100	27.29	72.71	.
EE	102.757 e	1.345	0.320	1.010	0.015	1.31	0.31	0.98	0.01	100	23.79	75.09	1.12
IE	827.000	15.926	1.067	14.709	0.150	1.93	0.13	1.78	0.02	100	6.70	92.36	0.94
EL	.	.	.	.	.	.	.	.	.	.	.	.	.
ES	8308.156	275.753	108.739	146.993	20.021	3.32	1.31	1.77	0.24	100	39.43	53.31	7.26
FR	16360.326	.	.	.	.	.	.	.	.	.	.	.	.
IT	9548.000	.	.	.	.	.	.	.	.	.	.	.	.
CY	80.571	1.970	0.124	1.579	0.267	2.45	0.15	1.96	0.33	100	6.29	80.15	13.55
LV	28.644	0.717	0	0.638	0.079	2.50	0	2.23	0.28	100	0	88.98	11.02
LT	46.976	0.945	0	0.339	0.606	2.01	0	0.72	1.29	100	0	35.87	64.13
LU	231.739	.	.	.	.	.	.	.	.	.	.	.	.
HU	349.287	7.516	5.663	1.361	0.492	2.15	1.62	0.39	0.14	100	75.35	18.11	6.55
MT	14.321 p	0.116 b	0 b	0.107 b	0.008 b	0.81 b	0 b	0.75 b	0.06 b	100	0 b	92.24 b	6.90 b
NL	5 117.591	120.086	45.244	74.592	0.250	2.35	0.88	1.46	0.00	100	37.68	62.12	0.21
AT	2 279.691 i	108.448	26.253	74.115	8.080	4.76	1.15	3.25	0.35	100	24.21	68.34	7.45
PL	1 474.554	29.423	25.764	0.642	3.018	2.00	1.75	0.04	0.20	100	87.56	2.18	10.26
PT	1765.400	31.526	12.873	16.623	2.030	1.79	0.73	0.94	0.11	100	40.83	52.73	6.44
RO	353.260	0.962	0.596	0.268	0.098	0.27	0.17	0.08	0.03	100	61.95	27.86	10.19
SI	217.855	1.305	0.037	0.876	0.392	0.60	0.02	0.40	0.18	100	2.84	67.13	30.04
SK	194.516	6.442	6.061	0.043	0.338	3.31	3.12	0.02	0.17	100	94.09	0.67	5.25
FI	2065.305	37.723	15.193 i	22.210	0.320	1.83	0.74 i	1.08	0.02	100	40.28 i	58.88	0.85
SE	3093.853	.	.	.	.	.	.	.	.	.	.	.	.
UK	10 819.422 e	474.575 e	190.669 e	272.699 e	11.207 e	4.39 e	1.76 e	2.52 e	0.10 e	100 e	40.18 e	57.48 e	2.36 e
IS	75.887	.	.	.	.	.	.	.	.	.	.	.	.
NO	2 697.538	95.649	23.462	66.189	5.997	3.55	0.87	2.45	0.22	100	24.53	69.20	6.27
CH	.	162.448	40.342	116.419	5.687	.	.	.	.	100	24.83	71.67	3.50
HR	324.603	4.385	0.339	1.168	2.877	1.35	0.10	0.36	0.89	100	7.73	26.64	65.61
TR	.	.	.	.	.	.	.	.	.	.	.	.	.
MK	.	.	0.135	0.190	.	.	.	.	.	.	.	.	.

: Not available
e Estimate
p Provisional
b Break in series
Source: Eurostat

Flag i AT: federal or central government only;
Ft overestimated data.

Source of Recovery

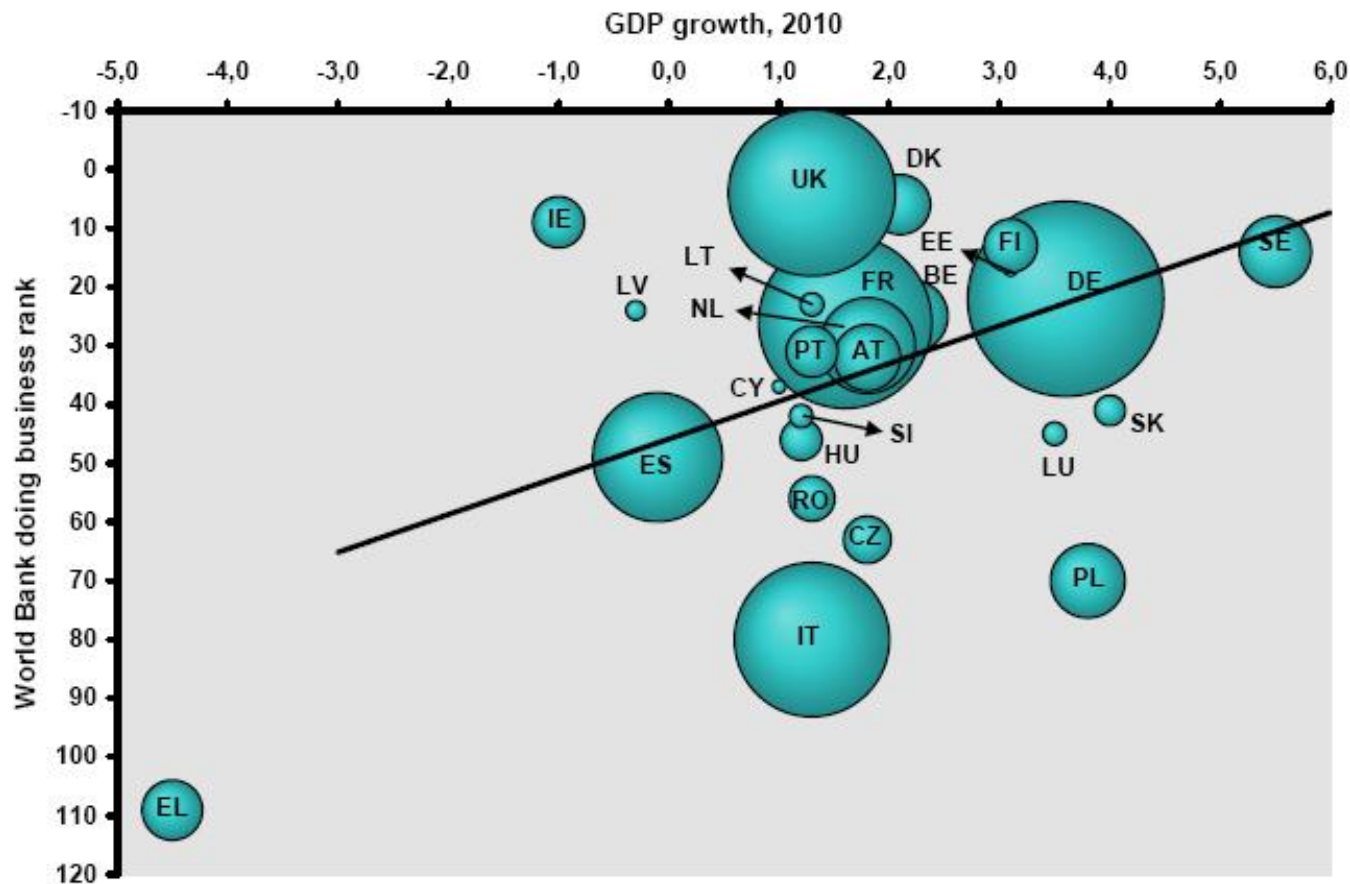


**R&D
investment
and
economic
recovery**

Quantity...

Source: State of Innovation Union Report 2011

Efficiency for Innovation Policy

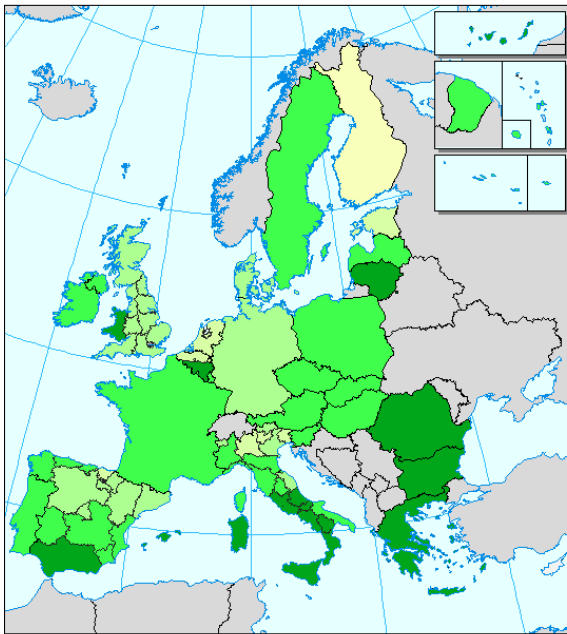


**Business
environment
and
economic
recovery**

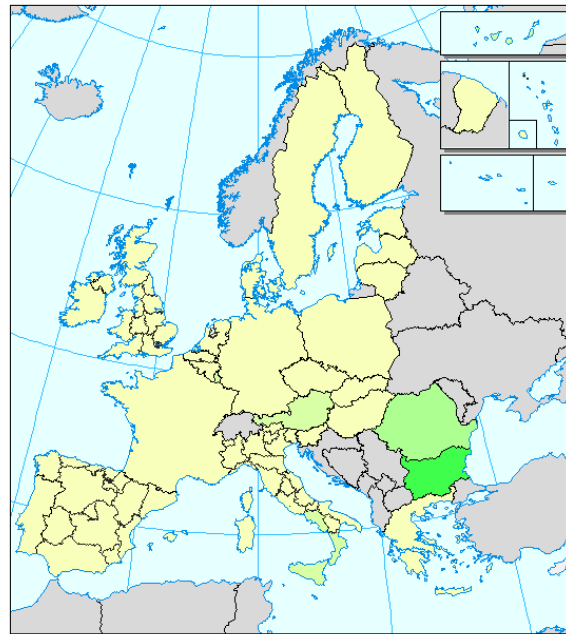
...and quality

Weakness of educational systems

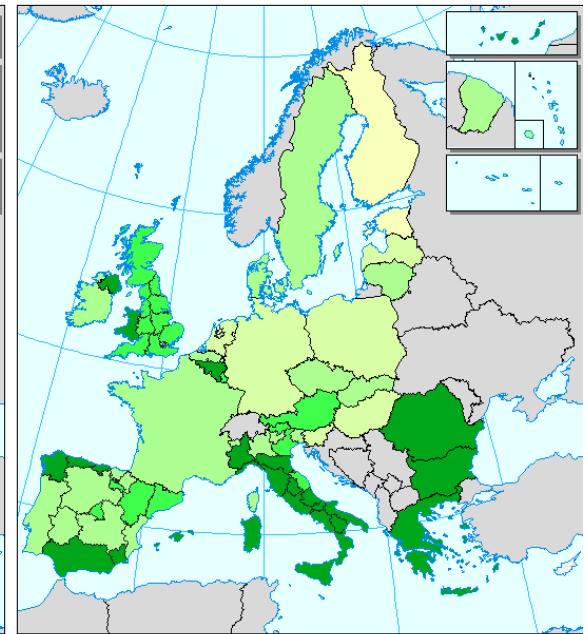
Low achievers in mathematics, reading and science - 2009



Low achievers in mathematics

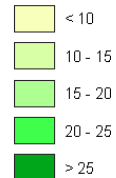


Low achievers in reading



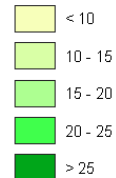
Low achievers in science

% of 15 year old pupils (level 1 or lower in mathematics)



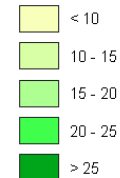
Source: OECD PISA

% of 15 year old pupils (level 1 or lower in reading)



Source: OECD PISA

% of 15 year old pupils (level 1 or lower in science)



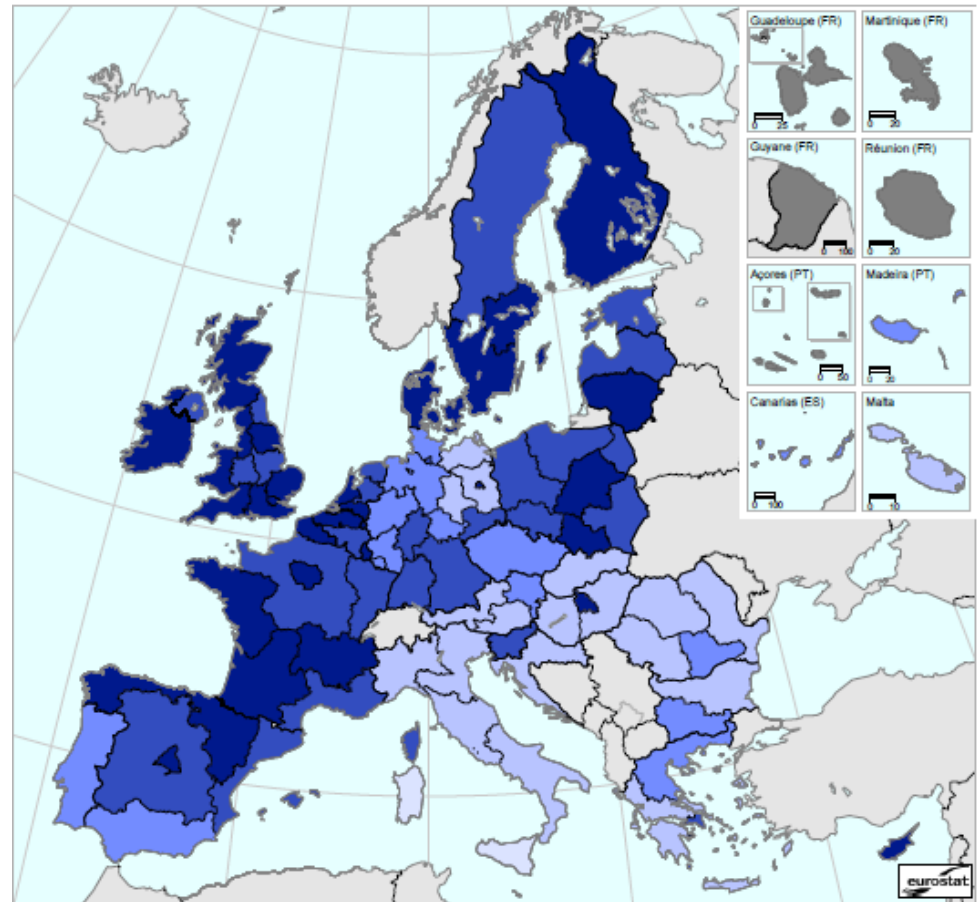
Source: OECD PISA

0 1 000 Km



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Tertiary Educational Attainment (ISCED levels 5 and 6), by NUTS 1 regions (% pop aged 30 to 34) 2012

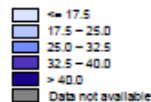


(% of population aged 30-34)

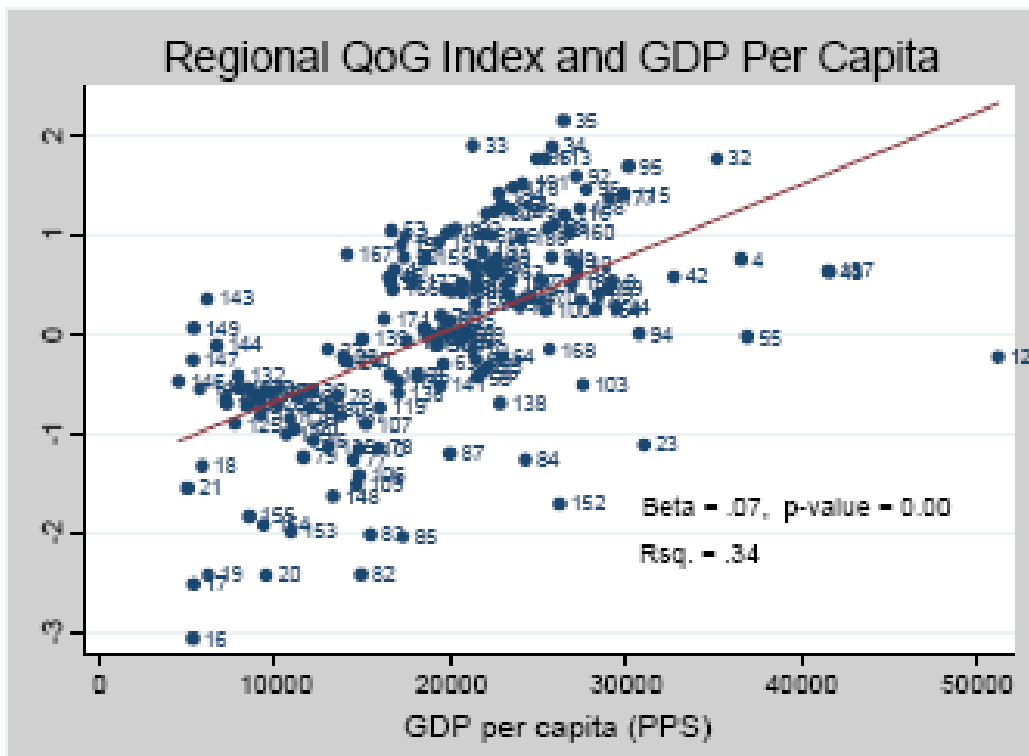
Administrative boundaries: © EuroGeographics © UN-FAO

Cartography: Eurostat — GISCO, 07/2013

EU-27 = 35.8



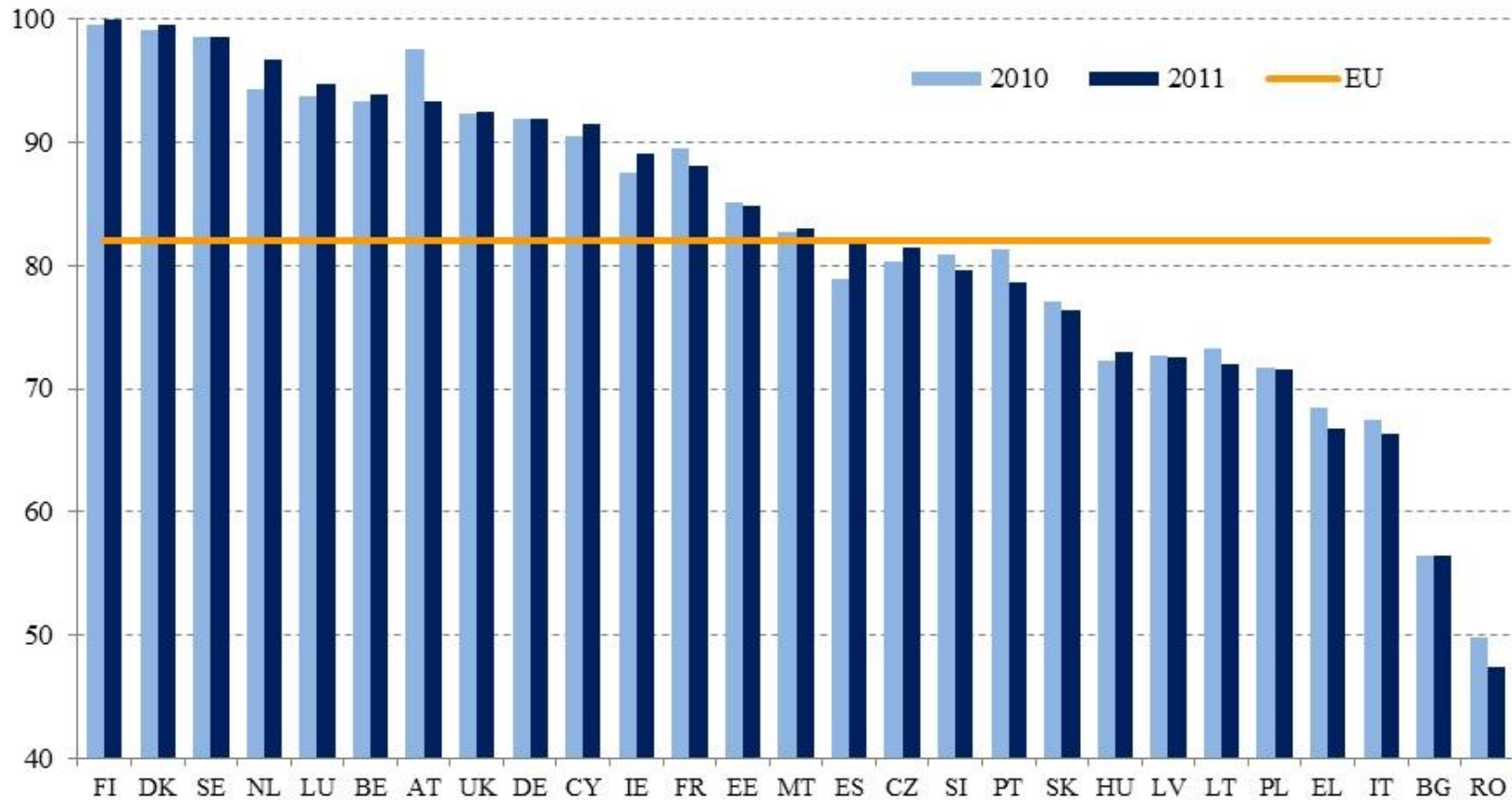
Quality of Regional Policy



- Smart Specialization Strategies
- Institutional and other structural bottlenecks

Source: "Measuring the Quality of Government and Subnational Variation", QoG Institute, University of Gothenburg, Sweden

Government effectiveness



Note: EU level for 2010 is the same as 2011

Source: World Bank – Worldwide Governance Indicators (2010; 2011).



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Business Environment



Note: EU = unweighted average; no data available for HR and MT – DB 2008

Source: Commission calculations based on World Bank Doing Business data

Thank you!



<http://s3platform.jrc.ec.europa.eu>

JRC-IPTS-S3PLATFORM@ec.europa.eu