

DG REGIO

Cohesion Policy:
Objectives, rationale and
working

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Introduction

Objectives

- Provide an overview of the fundamentals underlying Cohesion Policy
- Explain the rationale and the working of the policy
- Discuss the evaluation of the impact of the policy

Content

- EU Cohesion Policy: Milestones (some political fundamentals) and working
- Growth theory and Economic Geography (some economic fundamentals)
- Objectives and intervention logic
- Some issues related to the evaluation of impacts

EU regional policy – Milestones

1957:

Treaty of Rome refers in its preamble to the need "to strengthen the unity of their economies and to ensure their harmonious development by reducing the differences existing between the various regions and the backwardness of the less favoured regions".

1958:

Setting-up of two sector-based Funds: the European Social Fund (ESF) and the European Agricultural Guidance and Guarantee Fund (EAGGF) (1962) + European Investment Bank.

EU regional policy – Milestones

1975: Creation of the European Regional Development Fund (ERDF).

- The first enlargement (IRL, DK, UK) and the objective of an Economic and Monetary Union, made the Heads of State and Government decide in October 1972 to create a European Regional Development Fund (ERDF).
- Budget of 1.4 billion "units of accounts" (the then budget's "currency") for the years 1975 to 1977.
- Representing about 4% of the budget's, split between the then nine Member States.
- Three actions eligible preferably to be carried out in national state aid areas:
 1. investments in small enterprises creating at least 10 new jobs;
 2. investments in infrastructure related to point 1; and
 3. infrastructure investments in mountainous areas.
- Member States had to apply for ERDF support at project level. Decisions were then taken in a committee of Member States based on Commission proposals.

EU regional policy – Milestones

- **1975:** Negotiations with the United Kingdom with regard to the European budget:
 - Community budget: UK a traditional importer from non-member countries; net contributor to the EU budget;
 - Community budget: UK a minor beneficiary of the CAP.
- **1984:** Introduction of ERDF as a balancing “budgetary” instrument.
- **1984:** The rebate is introduced though...



1984: Summit at Fontainebleau UK Prime Minister Margaret Thatcher obtains the “rebate” for the UK on its contribution to the EU budget.

EU regional policy – Milestones

1986:

Single European Act - Major objective: THE INTERNAL MARKET

The Single Act lays the basis for a genuine cohesion policy designed to offset the burden of the single market for southern countries and other less favoured regions

- Accession of Greece in 1981 and Portugal and Spain in 1986 => regional disparities increase
- Proportion of population with an annual income 30 % below the Community average:
 - EU-9 = 12.5%
 - EU-12 = 20%
- Delors 'White Paper' on the completion of the common market by 1992 accompanied by 2 reports:
 - Cecchini report: estimates "the cost of non-Europe" (between 4.25 % and 6.5 % of GDP)
 - Padoa-Schioppa report: suggests "serious risks of aggravated imbalances in the course of market liberalisation" and proposes "adequate accompanying measures to speed up adjustments in structurally weak regions and countries"

EU regional policy – Milestones

“Europe sees its future as striking a balance between competition and cooperation, collectively trying to steer the destiny of the men and women who live in it.

Is this easily done? No. Market forces are powerful. If we left things to their own devices, industry would be concentrated in the north and leisure pursuits in the south. But these market forces, powerful though they may seem, do not always pull in the same direction.

Man’s endeavour and political aspiration is to try to develop a balanced territory.”



Political fundamental

EU's Cohesion legal basis

- The Treaty establishing the European Community defines the objective of the European cohesion policy as follows:
- The Treaty establishing the European Community defines the objective of the European cohesion policy as follows:
 - Articles 3 : « work for the sustainable development of Europe based on balanced economic growth and price stability, a highly competitive social market economy, aiming at full employment and social progress, and a high level of protection and improvement of the quality of the environment...

It shall promote economic, social and territorial cohesion, and solidarity among Member States... »
 - Article 174 : « in particular, the Community aims to reduce the disparities between the levels of development of the different regions and the backwardness of the least favoured regions »
- The EU regional policy is the instruments of this commitment.

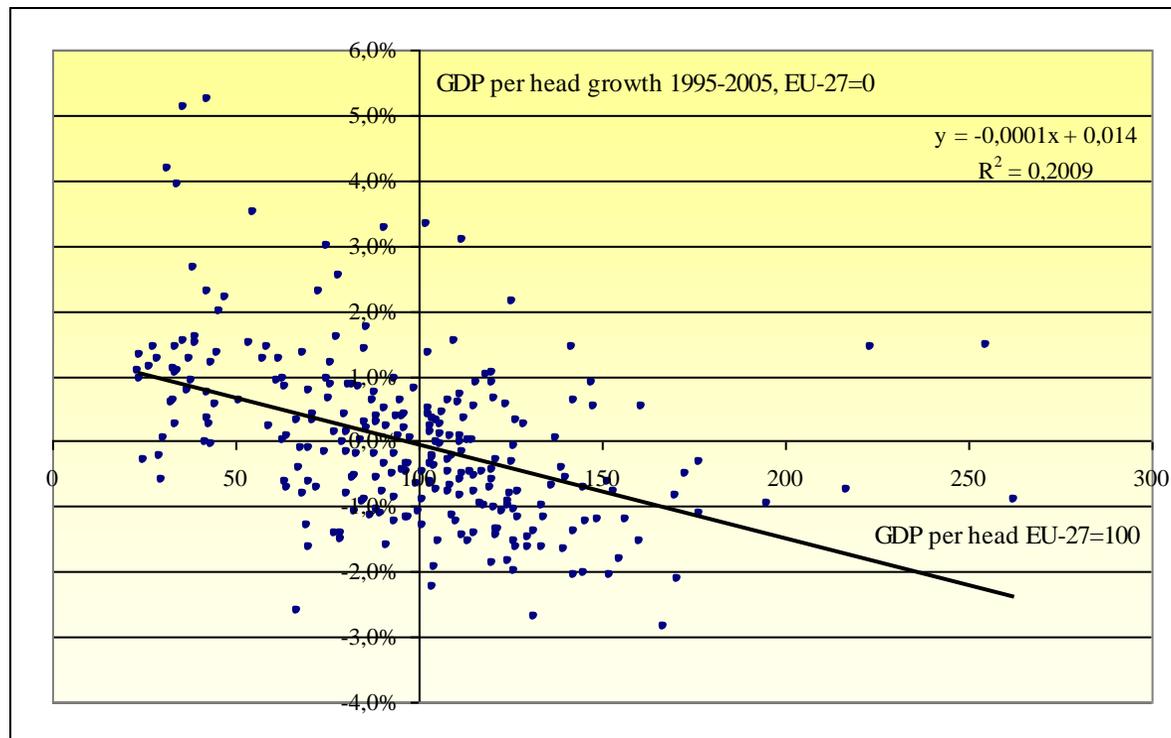
Growth theory

- Growth theory underlies Cohesion Policy
- According to growth theory, the main factors of growth are:
 - The accumulation of physical capital
 - The accumulation of human capital
 - Technological progress
- With regards to the first factor, one key assumption is the existence of decreasing returns: the capacity of one factor to increase production of output diminishes as the stock of this factor increases
- If true, poor economies should grow faster than rich ones (other things equal)...
- ... and we should observe a negative relationship between GDP per head at time t and growth rates between time t and $t+n$

Growth theory

- For EU regions:

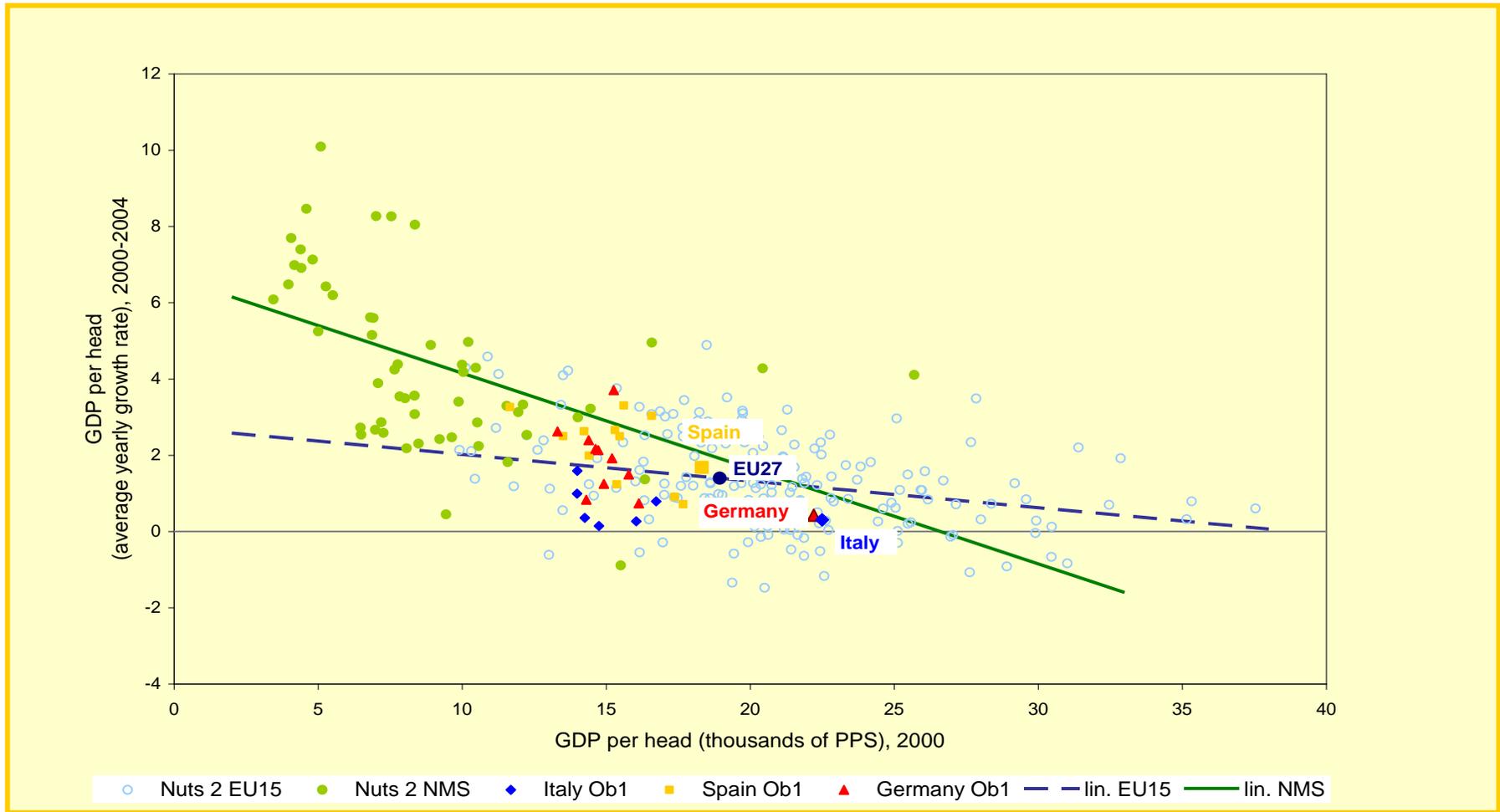
GDP per head, growth and levels, NUTS 2 regions, EU-27, 1995-2008



Source: EUROSTAT database. DG REGIO own calculation.

Growth theory

- For EU regions:



Growth theory

- If poor countries/regions grow faster, they will catch-up on the rich ones
- Disparities will then have a tendency to reduce in time
- This process is called Beta-convergence
- **But if disparities tend to disappear in time, why do we need a policy?**
- **To accelerate catching-up and promote faster accumulation/diffusion of physical capital but also human capital and technology**
- **Combination with other factors may lead to non-decreasing returns (endogenous growth)**

Economic Geography

What do we mean by economic geography?

- Economic geography: how economics contributes to shape geography
- Difference between first and second nature arguments
- For instance, regional distribution of economic activity

How to analyse mechanisms of economic geography?

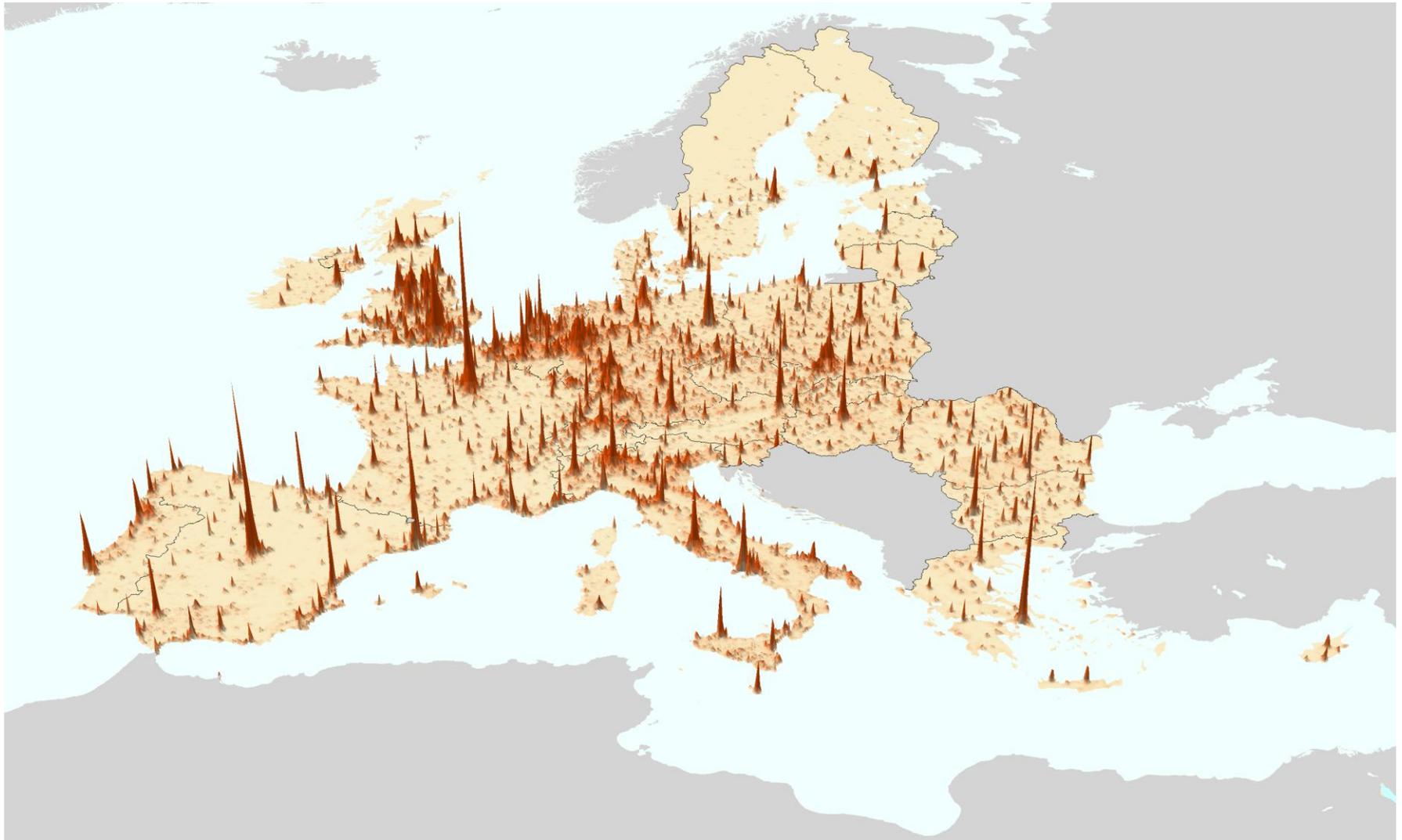
- Conceptual challenge
- In particular, we must isolate second from first nature arguments

Major break through

- Competition on the circle
- Krugman' seminal paper (1991) (Nobel prize 2008)

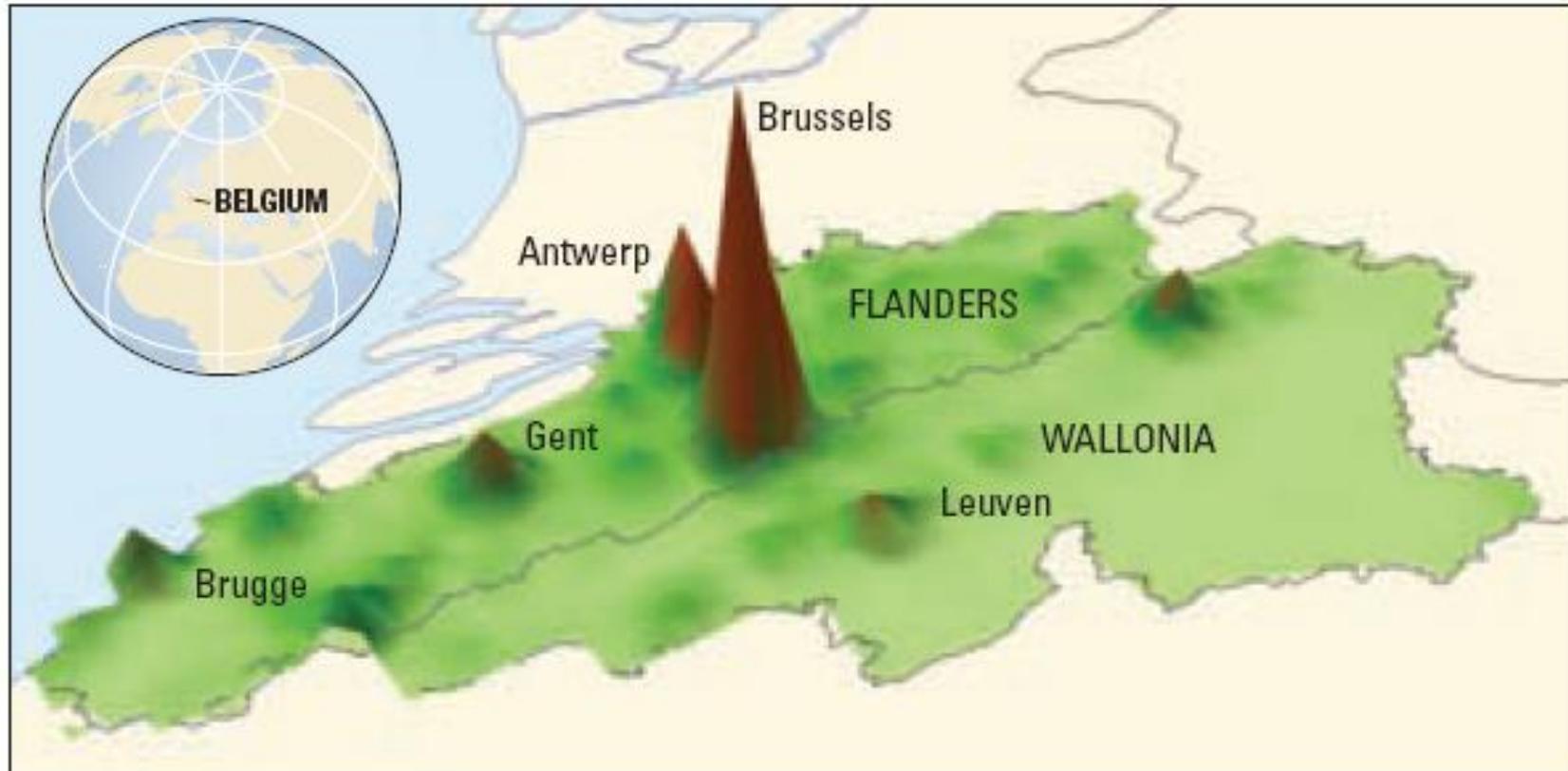
Economic Geography

A bumpy world - Spatial distribution of population, EU



Economic Geography

A bumpy world - Spatial distribution of GDP, Belgium



Source: WDR 2009 team and World Bank Development Research Group, based on subnational GDP estimates for 2005. See also Nordhaus 2006.

Economic Geography

Agglomeration forces

- Tend to lead industry to cluster geographically

Dispersion forces

- Tend to encourage industry to disperse geographically

Economic Geography

Many agglomeration forces

- Technological spillovers (e.g. silicon valley) (Marshallian externalities)
- Labour market pooling (e.g. City of London)
- Demand linkages (a.k.a backward linkages)
- Supply linkages (a.k.a foreward linkages)

Many dispersion forces

- High rents
- Congestion (traffic, pollution, ...)
- Competition (among firms, among workers, ...)

Economic Geography

Krugman (1991)

Agglomeration forces

- Demand linkages (a.k.a backward linkages)

Dispersion forces

- Competition (among firms, among workers, ...)



- Reducing transport costs fosters agglomeration
- If agglomeration forces dominate, then agglomeration fosters efficiency

Economic Geography

The wrong (but unfortunately common) interpretation

- Agglomeration is synonymous of more efficiency
- Reducing transaction costs fosters agglomeration forces
- Reducing transaction costs therefore can only increase disparities (i.e. Cohesion Policy contributes to deepen regional disparities!!)
- Regional development hampers the concentration of economic activity and is therefore detrimental to global efficiency and growth (i.e. Cohesion Policy reduces growth in the EU!!)

Economic Geography

The right (but more subtle) interpretation

- In some cases, reducing transaction costs fosters agglomeration forces
- In others, reducing transaction costs fosters dispersion forces
- Reducing transaction costs therefore can decrease or increase disparities
- Space and the geographical distribution of economic activity matters for efficiency
- Regional development must therefore take space into account and create the condition conducive to a more efficient spatial structure
- Efficiency should not only incorporate economic but also social and environmental aspects

Economic fundamentals

Ingredients of a development/cohesion policy

- **Speed up the catching-up process:**
 - Support investment in physical capital
 - Support investment in human capital
 - Support investment in R&D
 - Foster technology transfer
- **Develop local potential**
 - Support investment in physical capital
 - Support investment in human capital
 - Support investment in R&D
- **Promote an efficient spatial organisation**
- **Promote sustainable development**

EU regional policy at work – 2007-13

Between 2001 and 2003: large debate on future priorities and management with Member States, regions and other players.

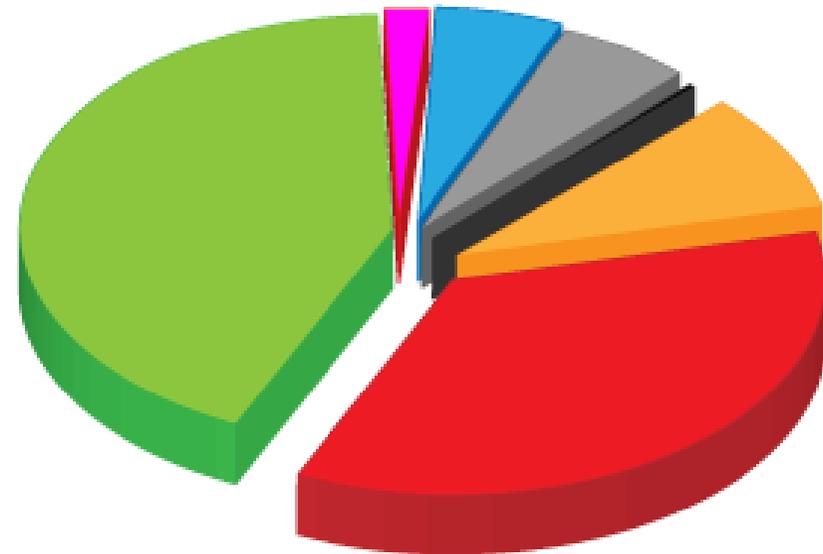
Economic and social disparities have significantly deepened with recent enlargements:

	Hi	Lo	Ratio
GDP per cap (% EU27 average)	Luxembourg 251%	Bulgaria 33%	7.6*
Population	Germany 82.5 million	Malta 404,000	204

**In US, this difference is only 2.5 and Japan 2*

EU regional policy at work – 2007-13

- Amount = €347.1 billion (2006 prices)
- = about 36% of the community budget
- Second policy in the community budget



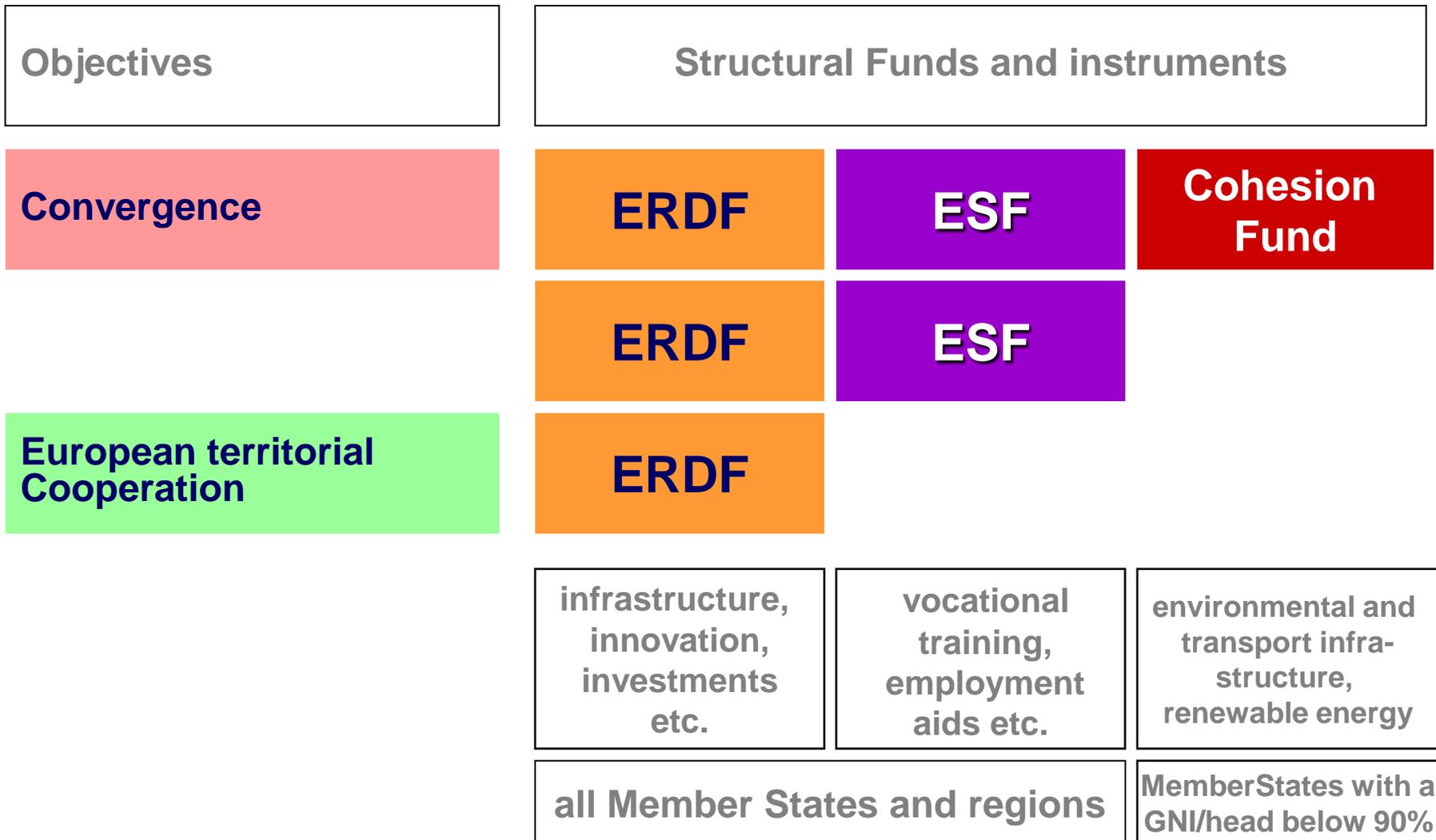
- 1a. Competitiveness for growth and employment : 9 %
- 1b. Cohesion for growth and employment : 35,6 %
- 2. Preservation and management of natural resources : 42,5 %
- 3 a. Freedom, security and justice : 0,8 %
b. Citizenship : 0,5 %
- 4. The EU as a global player (excl. EDF) : 5,7 %
- 5. Total administrative expenditure : 5,8 %
- 6. Compensations BG/RO : 0,1 %

EU regional policy at work – 2007-13

- ECP is structured around three « objectives »
 - Convergence
 - Regional competitiveness and employment
 - European Territorial Cooperation
- « Objectives » because they target beneficiaries rather than goals

EU regional policy at work – 2007-13

- Three main financial instruments

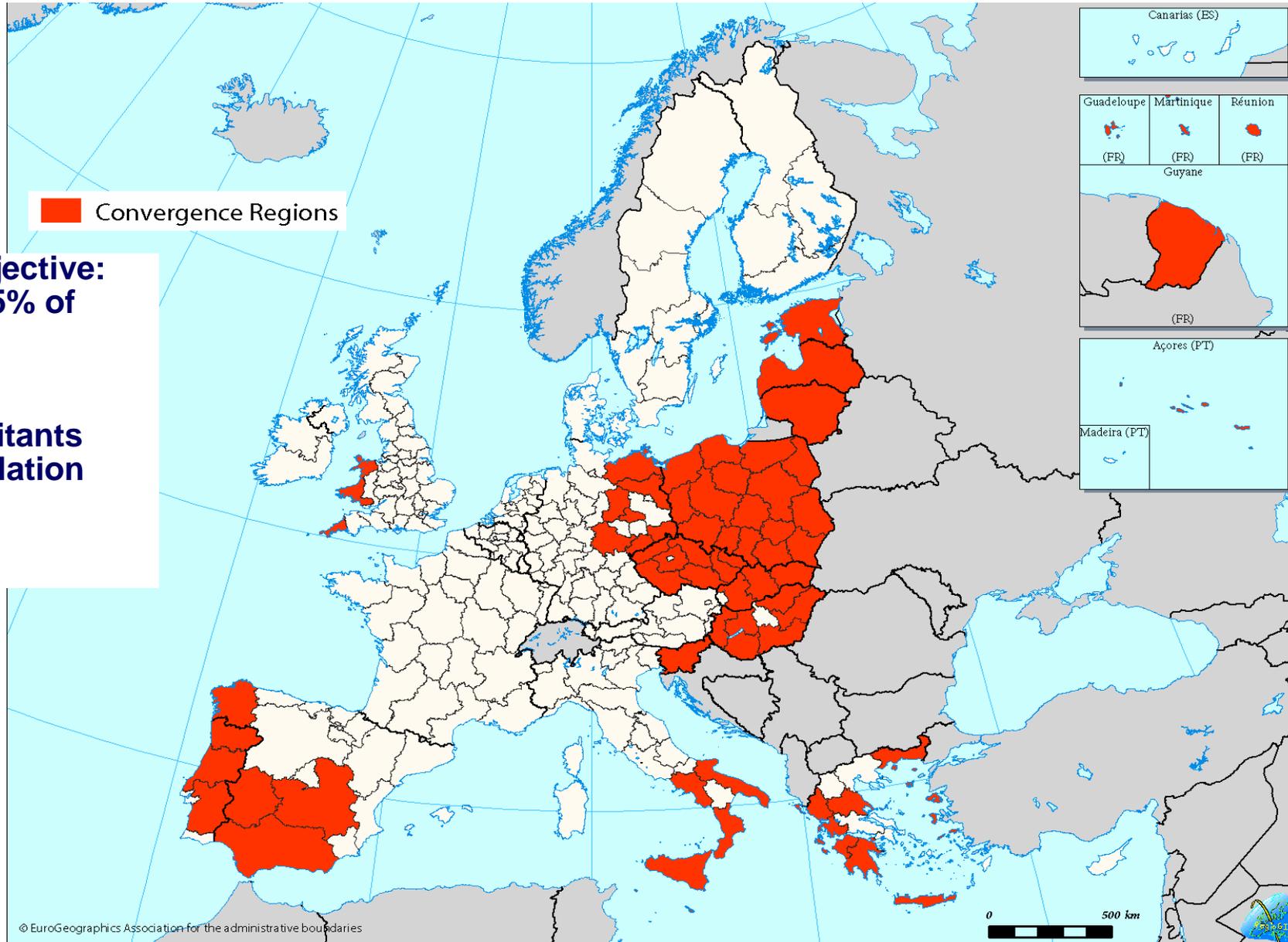


EU regional policy at work – 2007-13

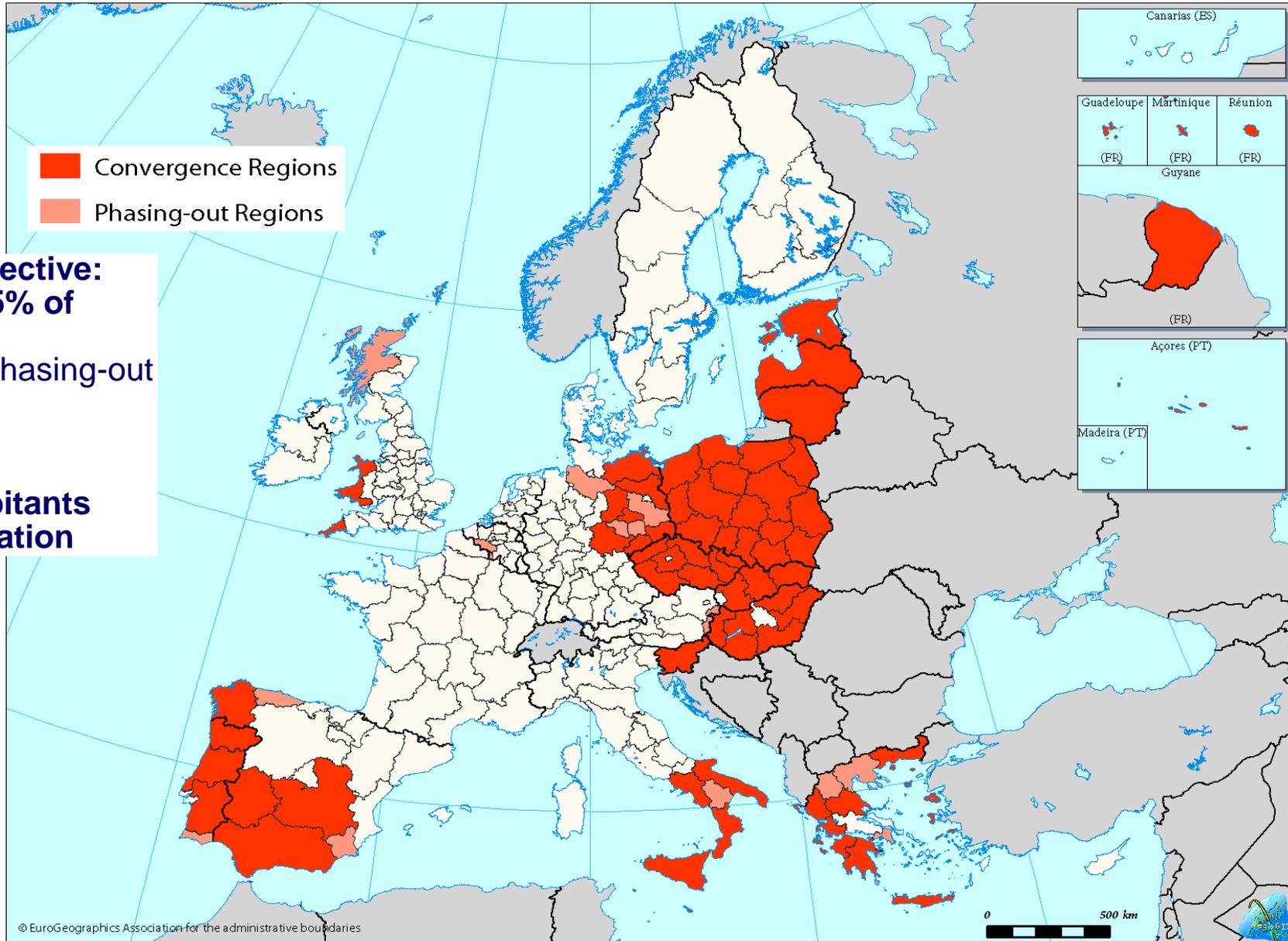
By objectives

Objective	in billion Euro (2006 prices)	in%
Convergence	282.9	81.7 %
Regional Competitiveness and Employment	54.9	15.8 %
European Territorial Cooperation	8.7	2.4 %
Total	347.41	100%

EU regional policy at work – 2007-13



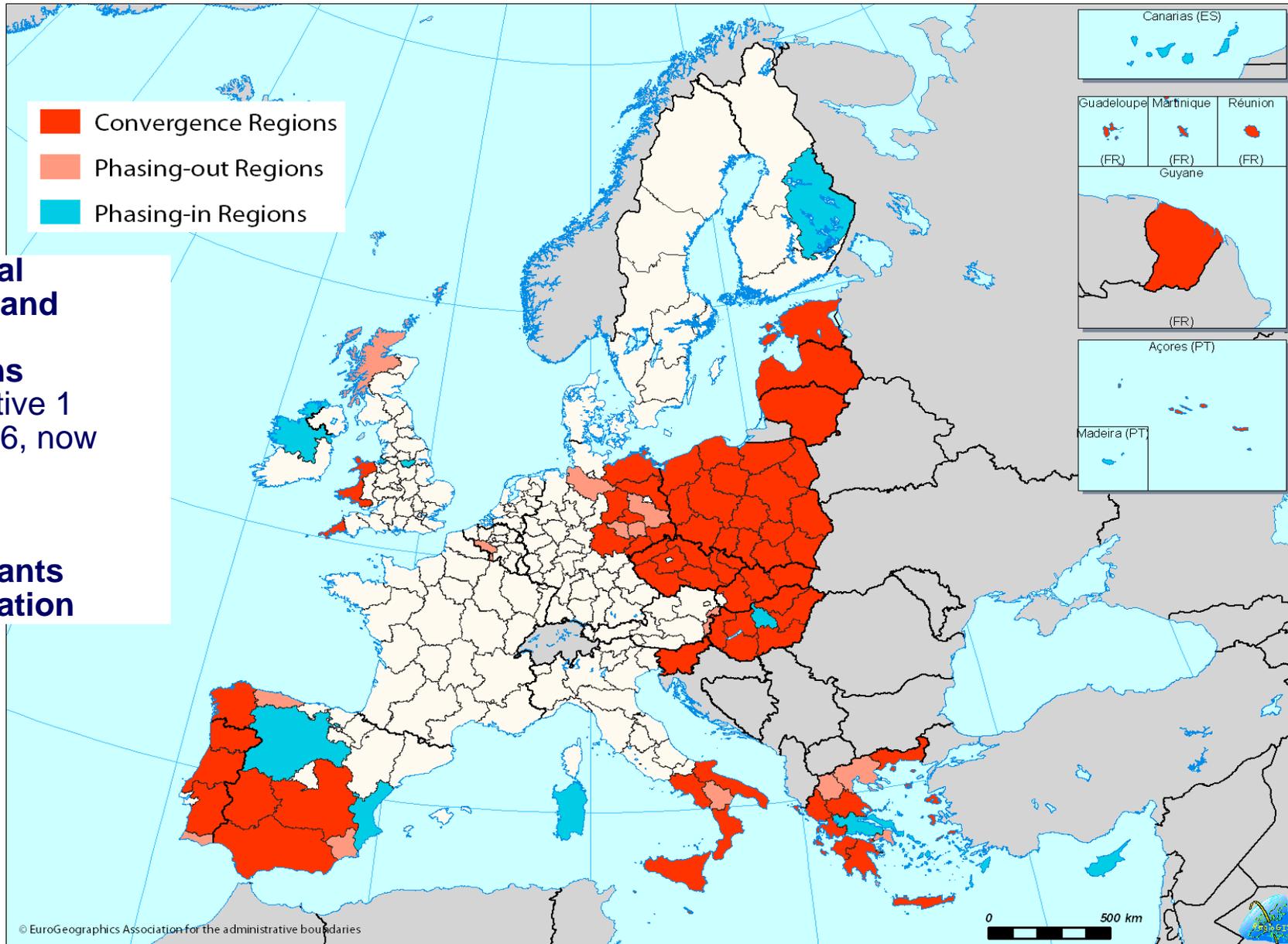
EU regional policy at work – 2007-13



Convergence Objective:
Regions below 75% of EU15 GDP
(statistical effect/ phasing-out regions)

16 Regions
16.4 million inhabitants
3.6% of EU population

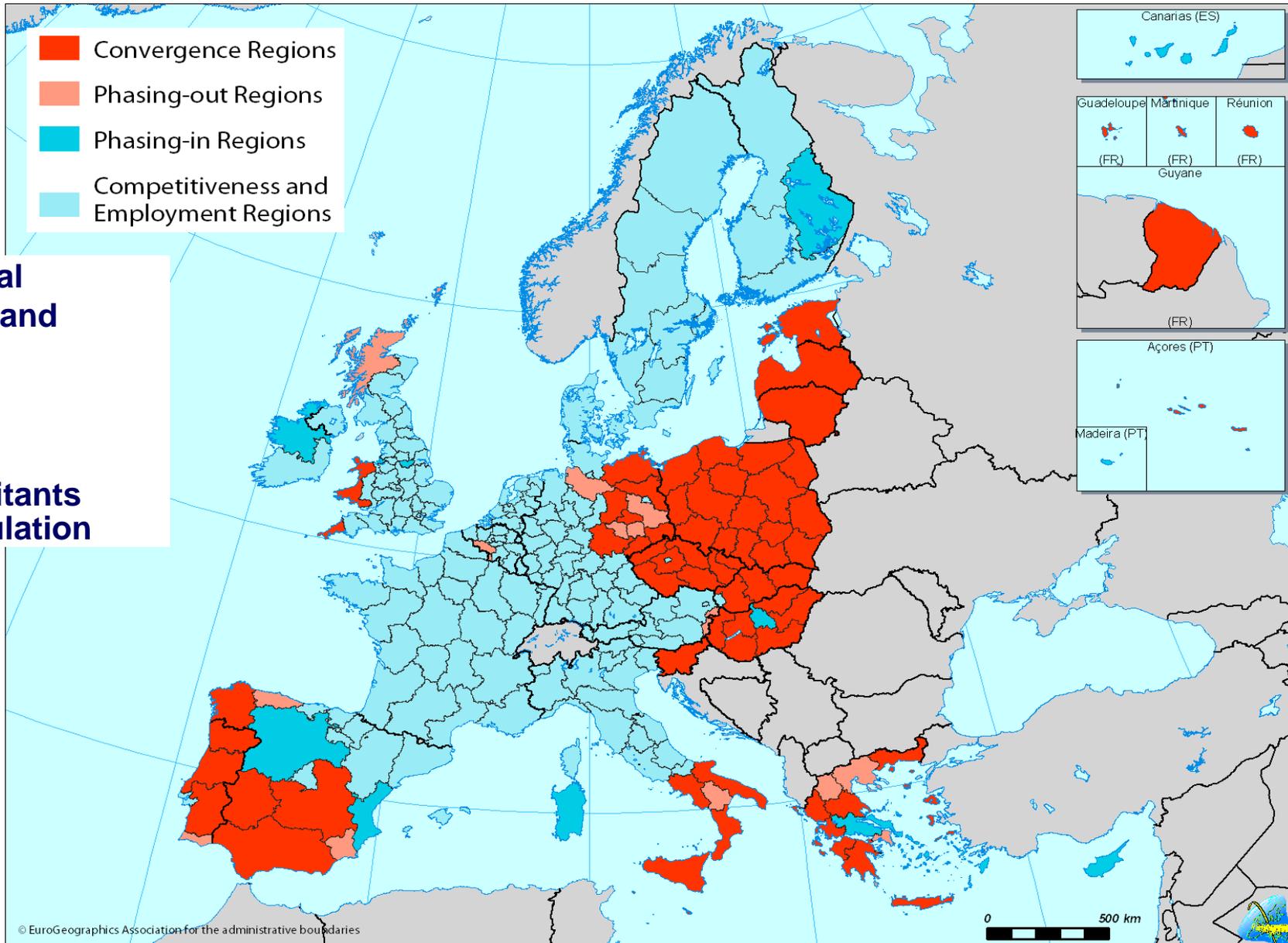
EU regional policy at work – 2007-13



Objective Regional Competitiveness and Employment:
Phasing-in regions
(covered by Objective 1 between 2000-2006, now above 75%)

13 Regions
19 million inhabitants
4.2% of EU population

EU regional policy at work – 2007-13



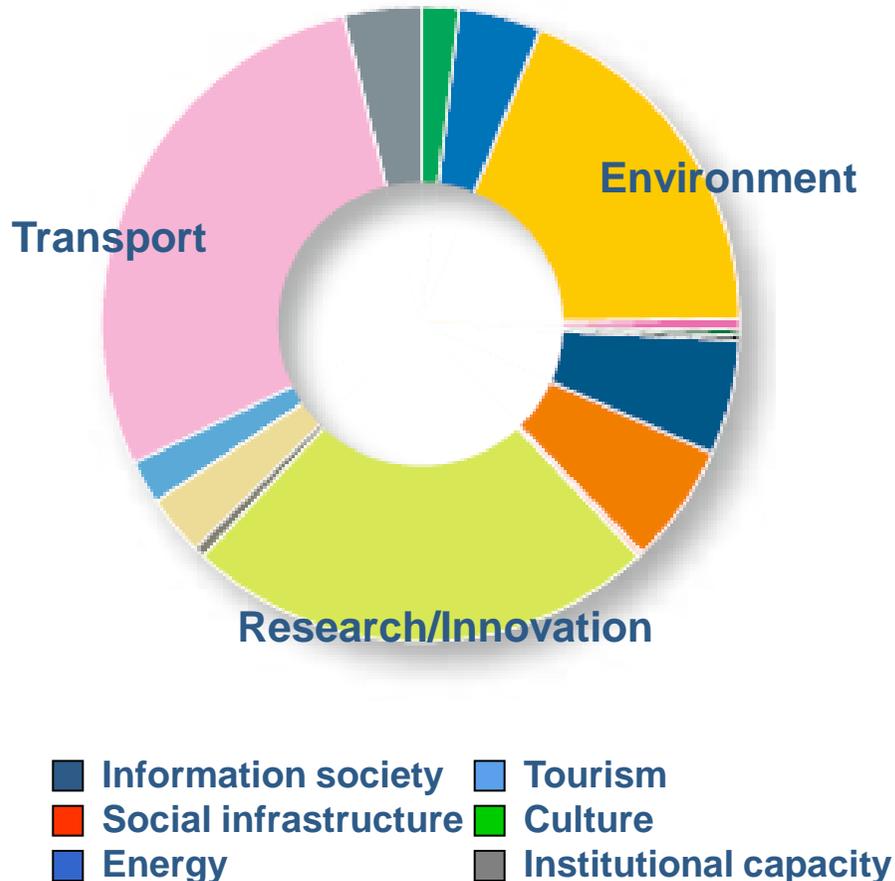
Objective Regional Competitiveness and Employment:
(all other regions)

156 Regions
296 million inhabitants
65.1% of EU population

EU regional policy at work – 2007-13

What do we spend the money on?

European Regional Development Fund and Cohesion Fund (€271 billion)



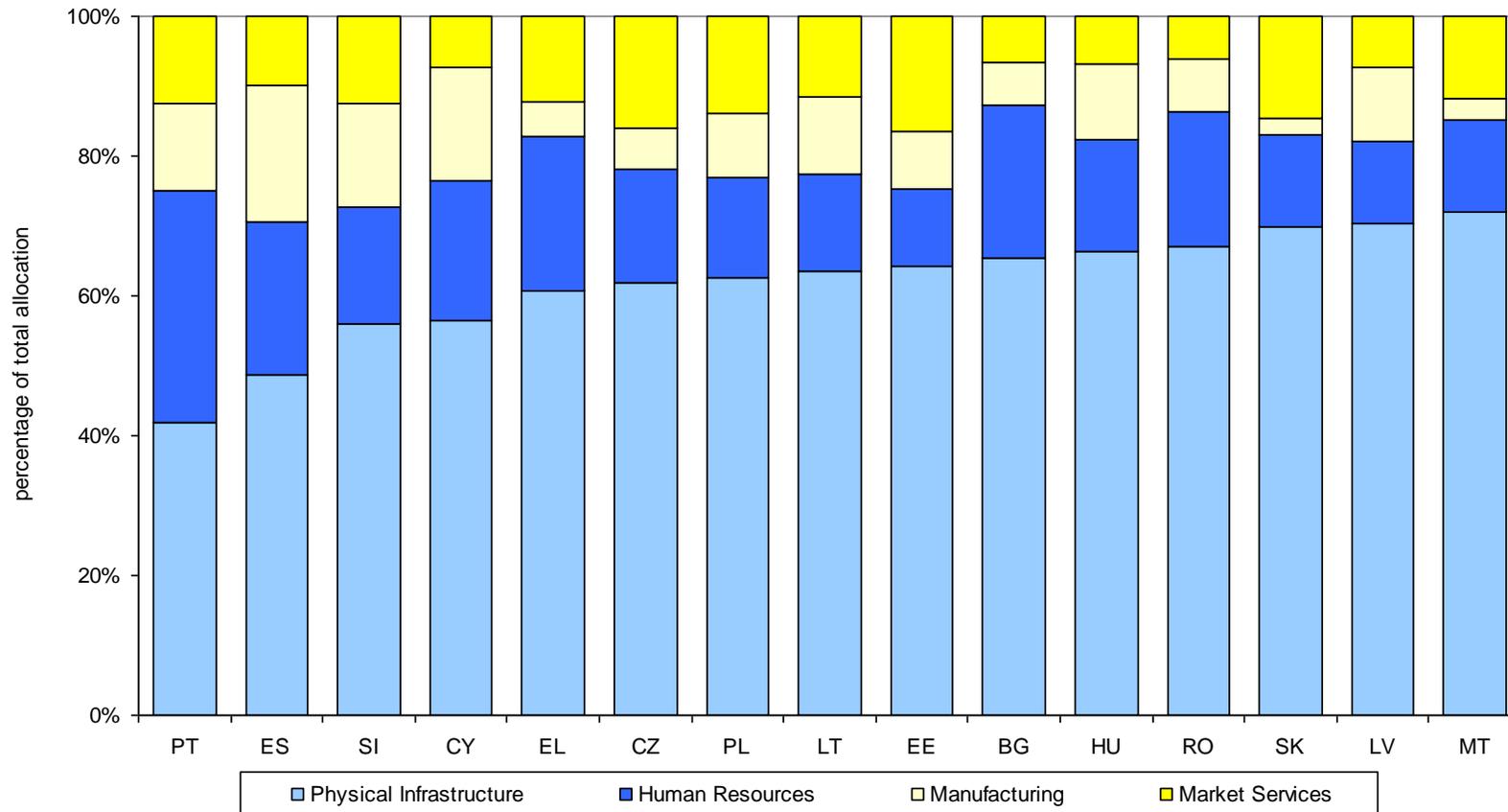
European Social Fund (€76 billion)



EU regional policy at work – 2007-13

Each MS makes its own policy mix...

Chart 13: NSRF Budget Breakdown per Category of Expenditure in 2007-2013



Source: DG REGIO calculation

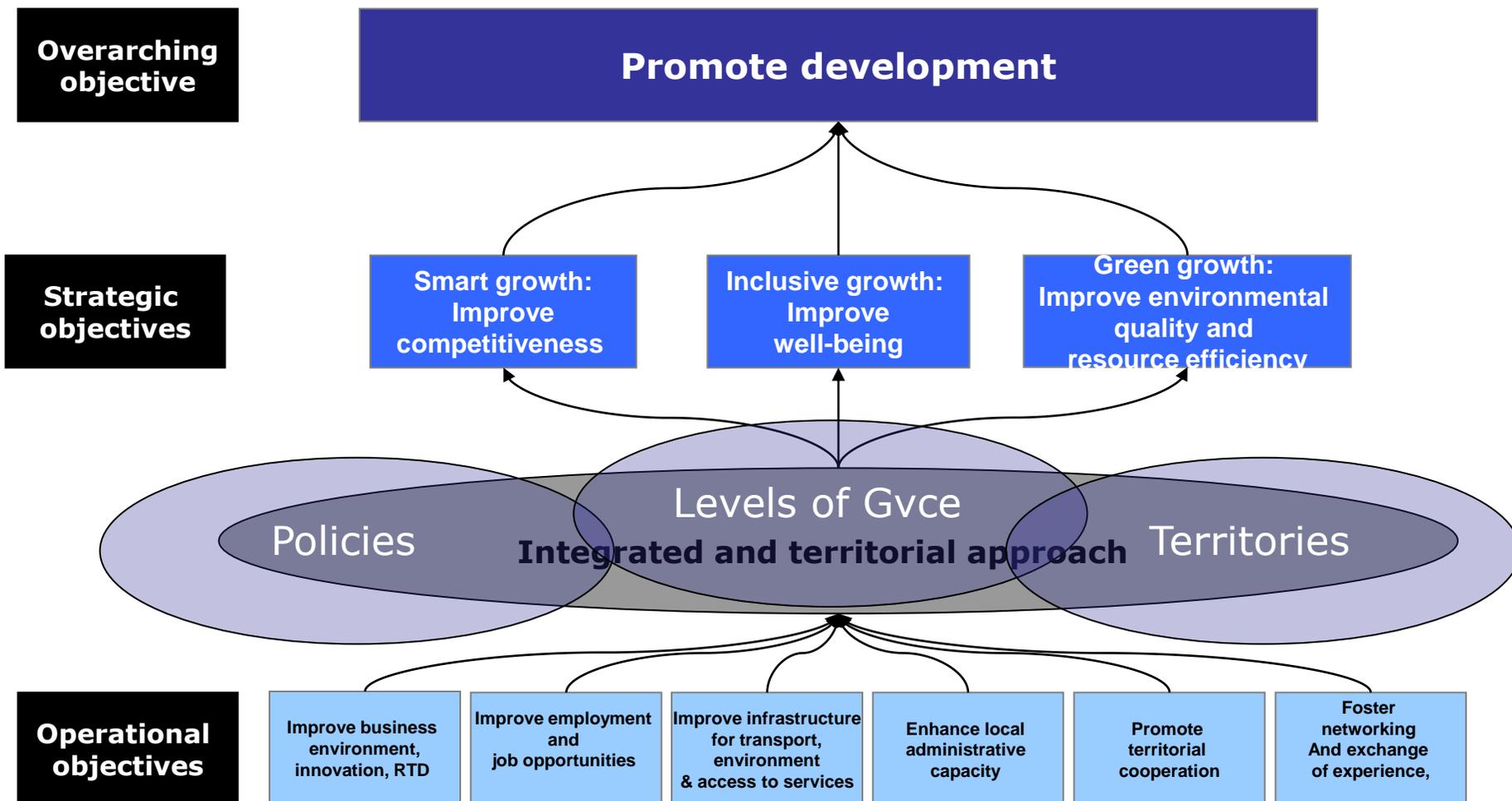
Objectives and rationale

- Cohesion policy was conceived as a development policy
- Supposed to complement the liberalisation of the internal market
- It is a development policy with the objectives of
 - fostering sustainable growth and jobs
 - improving the well-being of EU regions
 - promoting the integration of regional economies.
- In doing so, it seeks to allow all EU regions to benefit from and contribute to the shared political project of EU integration.
- How does it do that?

Objectives and rational

- Do not provide income transfers to regions
- Support development programmes that include various fields of intervention (infrastructure, human capital, R&D,...)...
- ... by co-financing with the Member States (additionality)
- It is difficult to reduce the purpose of the policy to one single, clear-cut objective...
- ... but it nonetheless operate within a logical framework

Objectives and rational



Measuring the impact of Cohesion Policy

Econometrics

Typical Methodology:

- o Estimate a Beta convergence equation

$$\Delta GDP = \alpha + \beta GDP \text{ at starting date} + \gamma Z$$

- o Introduce Structural Funds as one of the explanatory variable

$$\Delta GDP = \alpha + \beta GDP \text{ at starting date} + \gamma Z + \delta SF$$

- o Mainly used to assess the impact of the policy in terms of economic growth

Measuring the impact of Cohesion Policy

Ederveen, S., Groot H. and R. Nahuys (2006), "Fertile Soil for Structural Funds? A Panel Data Analysis of the Conditional Effectiveness of European Cohesion Policy," *Kyklos*, Blackwell Publishing, vol. 59(1), 17-42.

Table 1:
The basic results⁸

	[1] Ederveen et al., 2006 Standard neoclassical case Table 1, column 1	[2] Ederveen et al., 2006 "Pure" SF equation Table 1, column 5	[3] Ederveen et al., 2006 "conditional" SF equation Table 1, column 5
Log of initial GDP per capita	-0.028*** (0,005)	-0.028*** (0,005)	-0.028*** (0,005)
Log of investment rate	0.020** (0,009)	0.018* (0,009)	0.020** (0,009)
Log of human capital	0.023* (0,012)	0.023* (0,012)	0.022* (0,012)
Log of (population growth + 0.05)	-0.023 (0,019)	-0.030 (0,021)	-0.024 (0,020)
Structural Funds	-	-0.015 (0,012)	-0.141*** (0,043)
Structural Funds with Institutional Quality	-	-	0.0018** (0,007)
Constant	0.202*** (0,055)	0.190*** (0,057)	0.208*** (0,058)

Measuring the impact of Cohesion Policy

Cappelen, A., Castellacci, F., Fagerberg, J. and Verspagen, B. (2003), "The Impact of EU Regional Support on Growth and Convergence in the European Union", Journal of Common Market Studies, 41, 621-644.

	Large sample	Large sample with dummies	Small sample With dummies
Constant	0,058 (5,60)		
Initial GDP per capita	-0,016 (4,69)	-0,0096 (2,63)	-0,0089 (1,95)
Initial – TSD	0,0034 (3,55)	0,0043 (5,34)	0,0057 (6,41)
Agriculture	-0,030 (3,68)	-0,033 (3,89)	-0,023 (1,52)
Manufacturing	-0,0092 (1,01)	-0,023 (2,94)	-0,027 (3,38)
Infrastructure	0,0012 (2,88)	0,00045 (1,17)	0,00098 (2,87)
Infra – TSD	-0,0017 (3,19)	-0,0017 (3,81)	-0,0020 (5,61)
Unemployment	-0,00058 (2,82)	-0,00068 (3,14)	-0,0011 (3,87)
Unemp – TSD	0,00079 (3,68)	0,00070 (3,82)	0,00084 (2,46)
Population density	0,0013 (1,44)	0,00059 (0,71)	-0,00057 (0,68)
R&D	0,00098 (0,62)	0,0031 (2,03)	0,0025 (1,99)
EU support	0,0082 (5,39)	0,0064 (4,78)	0,015 (3,95)
EU – TSD	-0,0061 (3,46)	-0,0039 (2,62)	-0,018 (3,43)

Measuring the impact of Cohesion Policy

This approach is in fact not appropriate for evaluating Cohesion Policy

- The literature is inconclusive, some contributions pointing to positive impact, others to no impact, others to negative impact.
- Criticized for its methodological flaws.
- Rodrik, 2004 – <http://www.hks.harvard.edu/fs/drodrik/policy%20regressions.pdf>
- Example:

Measuring the impact of Cohesion Policy

- Let's create data using the following model:

$$\Delta GDP = \alpha + \beta \text{ GDP at starting date} + \gamma Z + \delta SF + \varepsilon_1$$

With

$$\alpha = 1; \beta = -0.02; \gamma = 1; \delta = 0.1$$

$$Z = UD(1,1); \varepsilon_1 = N(0,1)$$

$$SF = 1 / \text{GDP at starting date} (+ \varepsilon_2)$$

- Estimation with OLSQ (2,3SLSQ, FIML):

	α	β	γ	δ
Est.	1.18	-0.02	0.88	-0.10
T-stat	4.55	-8.14	3.10	-0.11

R-Sq: 0.44; DW:1.96

Measuring the impact of Cohesion Policy

Economic models

This approach rests on the simulation of a counterfactual

- Advantages:
 - The (almost) only method to estimate a counterfactual.
 - Takes into account the direct and indirect effects of the policy (e.g. inflation).
- Disadvantages:
 - Data demanding.
 - Sensitive to underlying assumptions and estimates of the parameters (need for sensitivity analysis).

Measuring the impact of Cohesion Policy

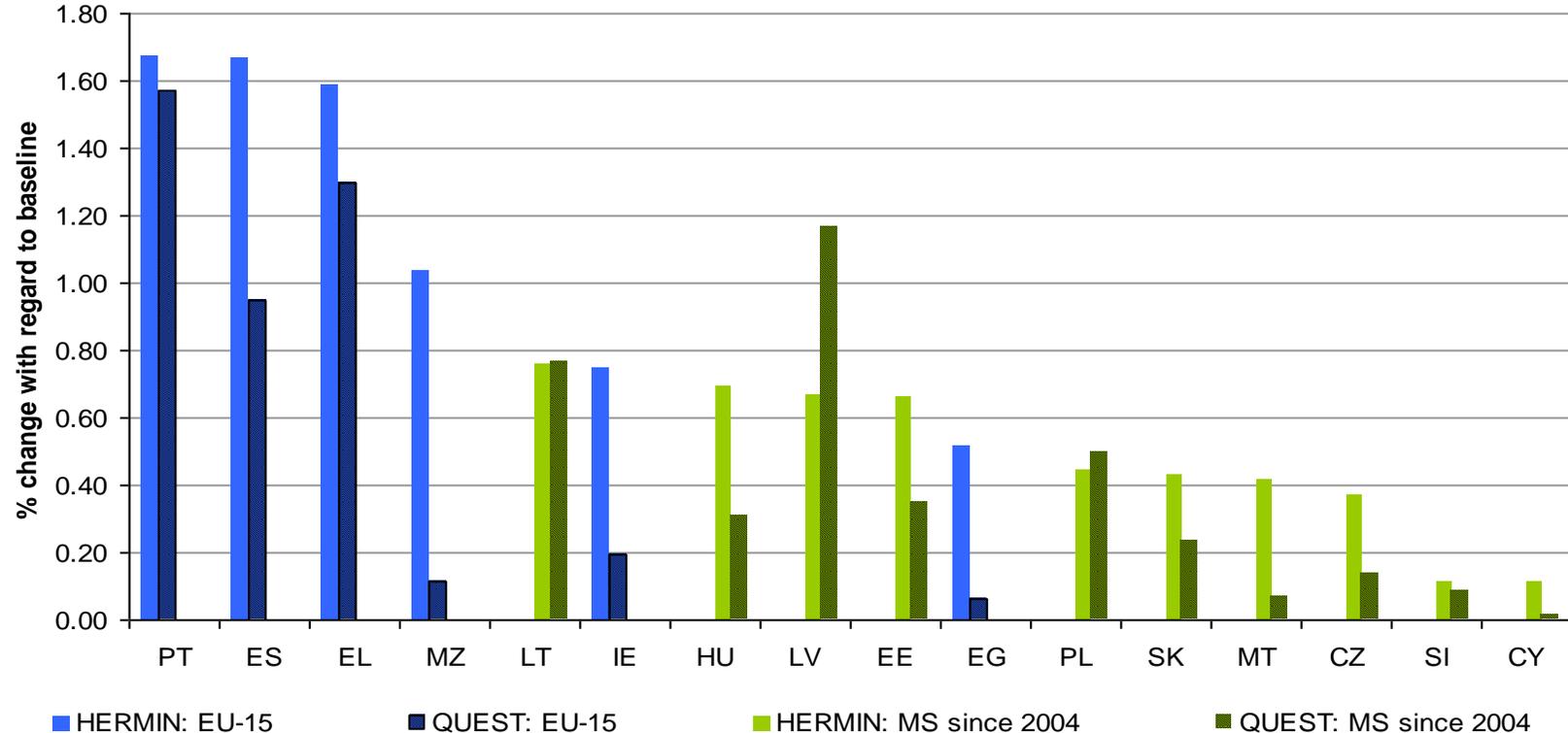
Impact assessment with macro and CGE models

- DG REGIO uses the HERMIN and QUEST models to evaluate/simulate the impact of Cohesion Policy.
- A regional CGE model (RHOMOLO) is under development.

Measuring the impact of Cohesion Policy

Impact assessment with macro and CGE models

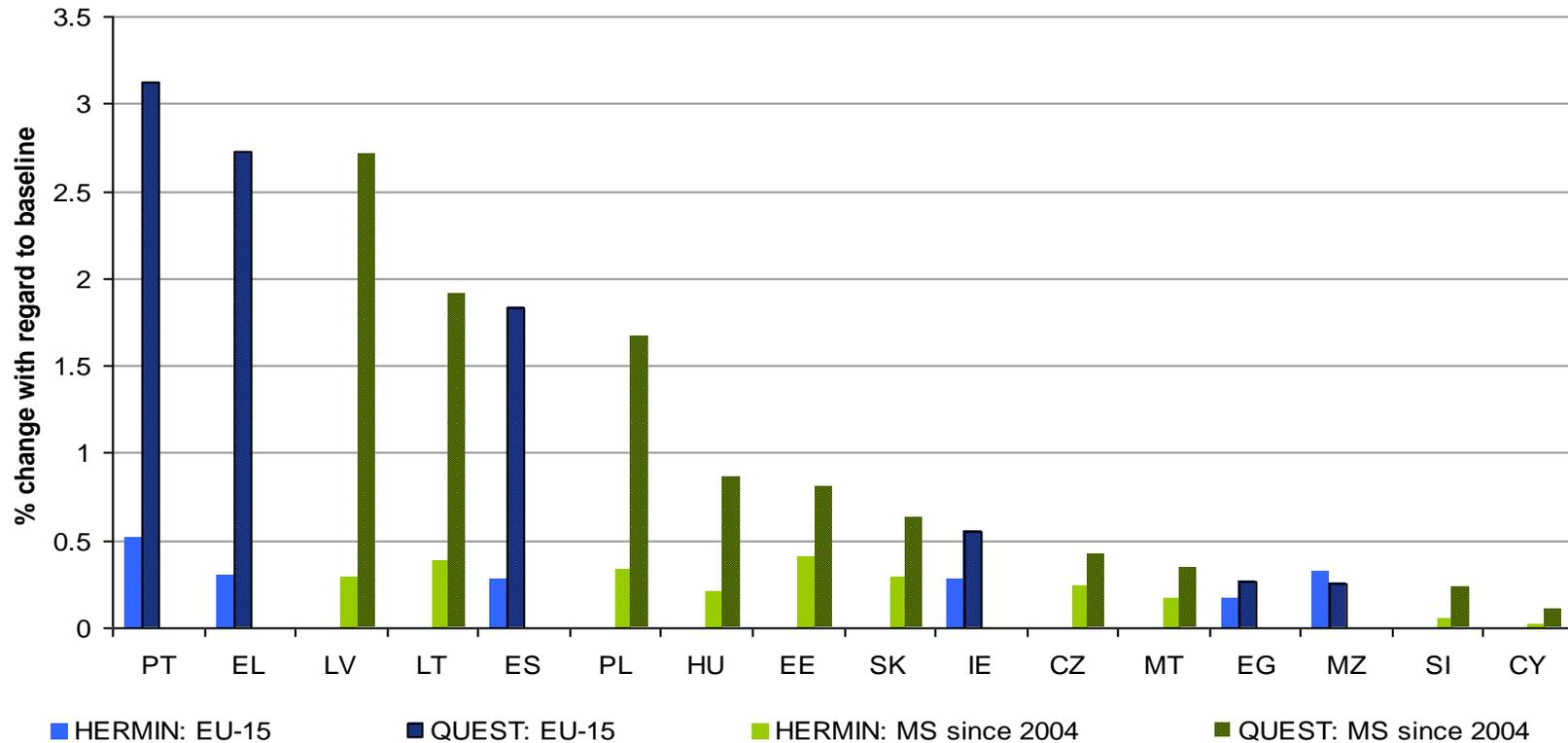
Average annual impact on GDP, 2000 - 2009



Measuring the impact of Cohesion Policy

Impact assessment with macro and CGE models

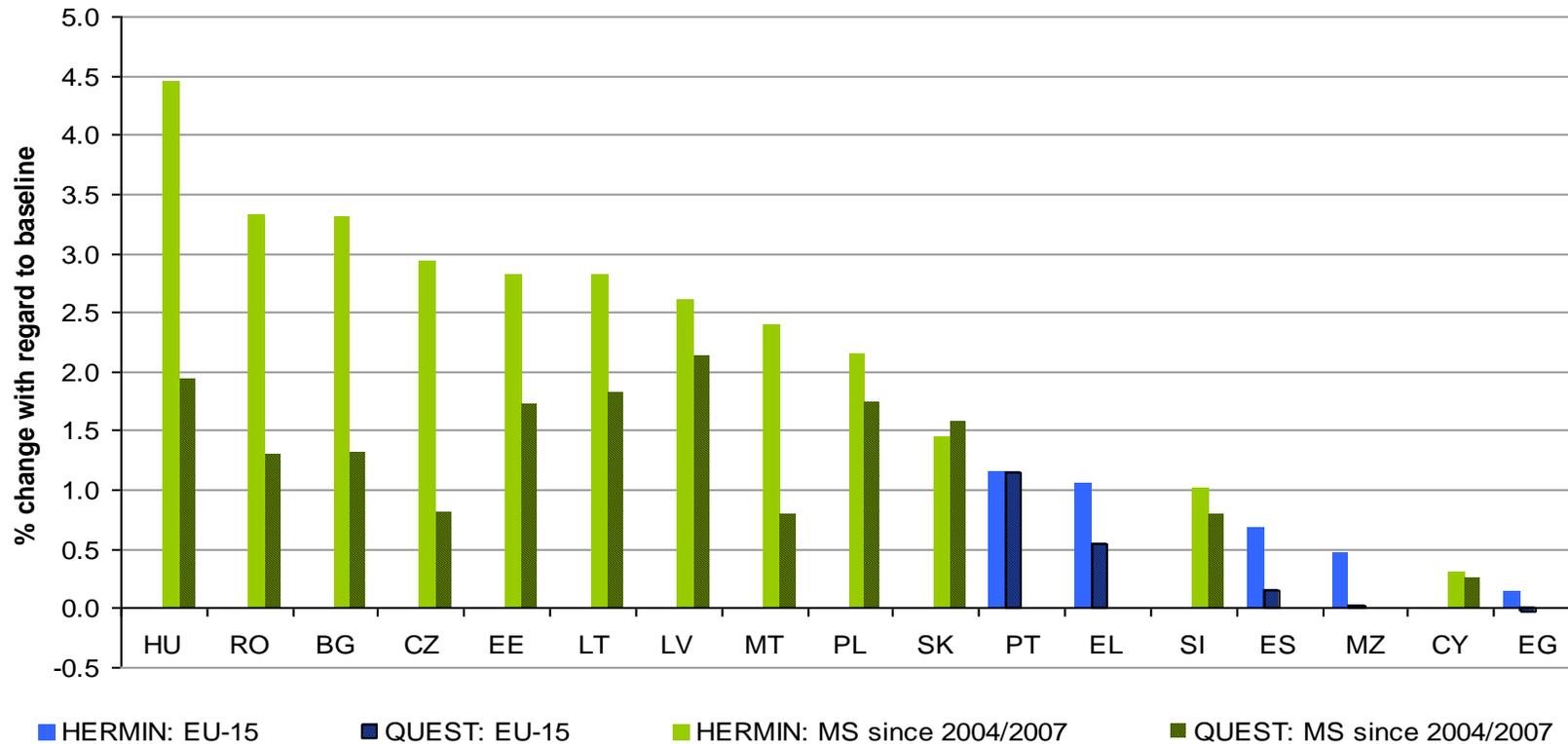
Impact on GDP, 2014



Measuring the impact of Cohesion Policy

Impact assessment with macro and CGE models

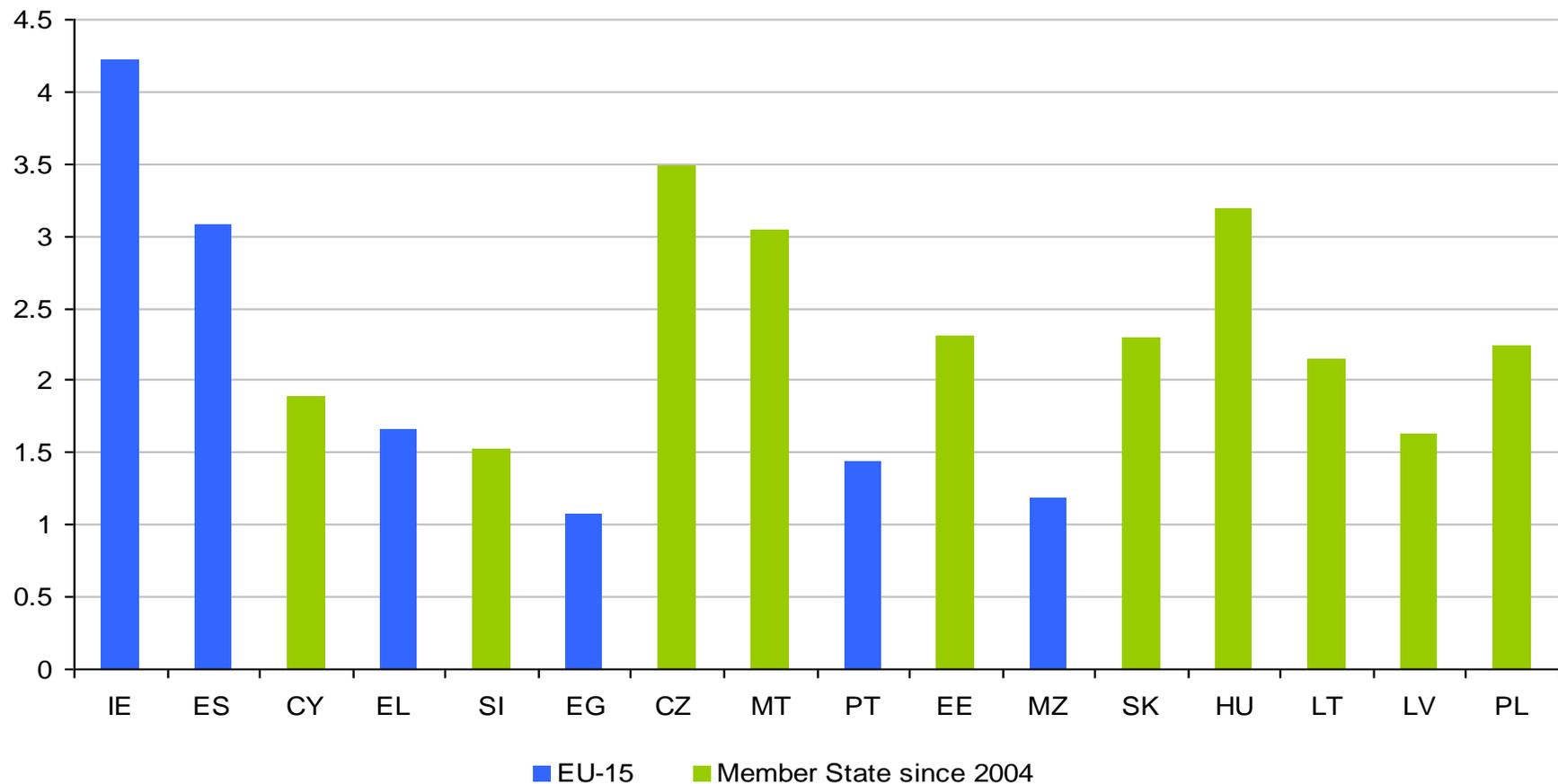
Average annual impact on GDP, 2007 - 2016



Measuring the impact of Cohesion Policy

Impact assessment with macro and CGE models

Cumulative multiplier, 2000-2014



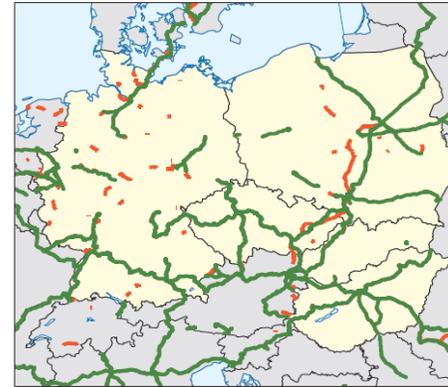
Measuring the impact of Cohesion Policy

RHOMOLO:

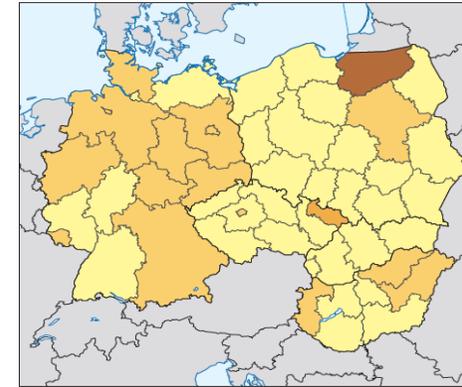
General equilibrium model at NUTS2 level

- Prototype for CZ, DE, HU, PL, SK.
- Economic geography:
 - Interregional spillover (trade, innovation, migration).
 - Agglomeration – Dispersion forces.
 - (Semi) Endogenous growth (technology and human capital).
- Simulation: Impact of TEN-T investments on regional GDP.

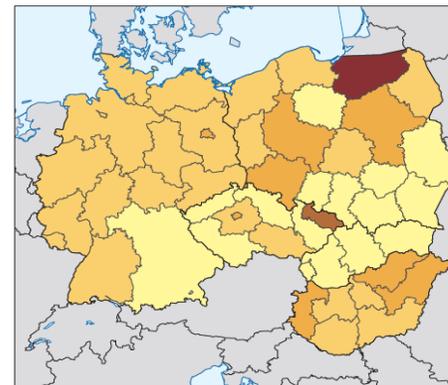
Transport links



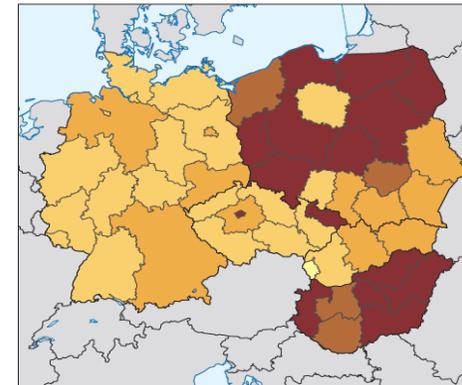
Short term



Medium term



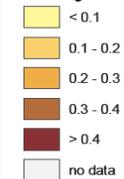
Long term



REGIOgis

Real GDP change due to TEN-T investments

% change with respect to the baseline



Green line: New/improved railway links
Red line: New/improved road links

Sources: TNO, IPTS, DG REGIO using the Rhomolo model

0 500 Km

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