ESPON

European Territorial Scenarios 2050

ESPON ET2050

April 2012

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ET2050 Consortium

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Nordic Centre for Spatial Development

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research institute for knowledge systems

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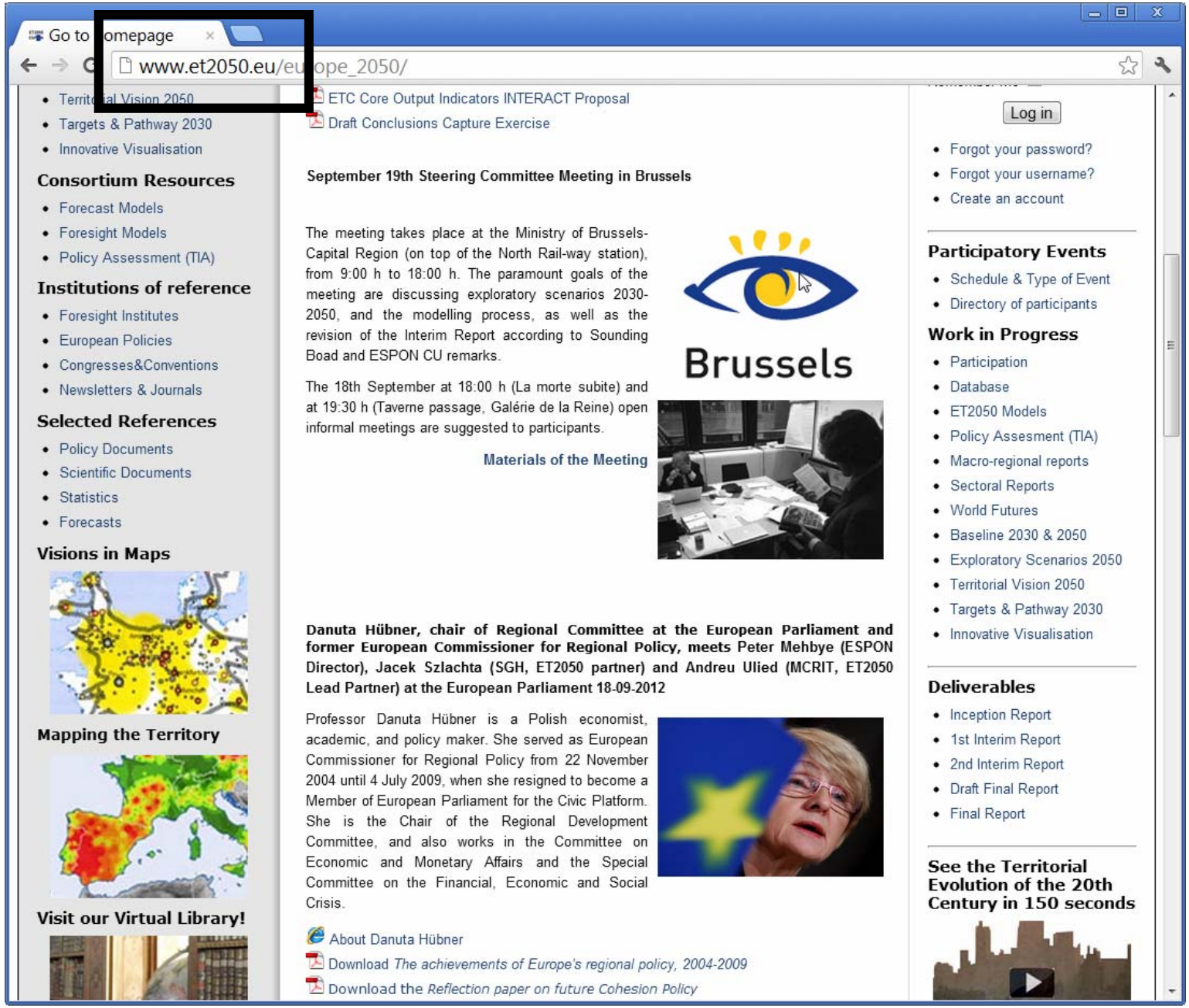
Ersília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Territorial Vision 2050
Targets & Pathway 2030
Innovative Visualisation
Consortium Resources
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Foresight Models
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ETC Core Output Indicators INTERACT Proposal
Draft Conclusions Capture Exercise
September 19th Steering Committee Meeting in Brussels
The meeting takes place at the Ministry of Brussels-Capital Region (on top of the North Rail-way station), from 9:00 h to 18:00 h. The paramount goals of the meeting are discussing exploratory scenarios 2030-2050, and the modelling process, as well as the revision of the Interim Report according to Sounding Boad and ESPON CU remarks.
The 18th September at 18:00 h (La morte subite) and at 19:30 h (Taverne passage, Galérie de la Reine) open informal meetings are suggested to participants.
Materials of the Meeting
Brussels
Danuta Hübner, chair of Regional Committee at the European Parliament and former European Commissioner for Regional Policy, meets Peter Mehbye (ESPON Director), Jacek Szlachta (SGH, ET2050 partner) and Andreu Ulied (MCRIT, ET2050 Lead Partner) at the European Parliament 18-09-2012
Professor Danuta Hübner is a Polish economist, academic, and policy maker. She served as European Commissioner for Regional Policy from 22 November 2004 until 4 July 2009, when she resigned to become a Member of European Parliament for the Civic Platform. She is the Chair of the Regional Development Committee, and also works in the Committee on Economic and Monetary Affairs and the Special Committee on the Financial, Economic and Social Crisis.
About Danuta Hübner
Download The achievements of Europe's regional policy, 2004-2009
Download the Reflection paper on future Cohesion Policy
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Deliverables
Inception Report
1st Interim Report
2nd Interim Report
Draft Final Report
Final Report
See the Territorial Evolution of the 20th Century in 150 seconds

ET2050 Goal

From Project Specifications:

The ESPON Monitoring Committee,
DG Regio and the ESPON Coordination Unit
wish to start a territorial vision-building process that involves relevant stakeholders at European, national and regional level, having 2050 as time horizon

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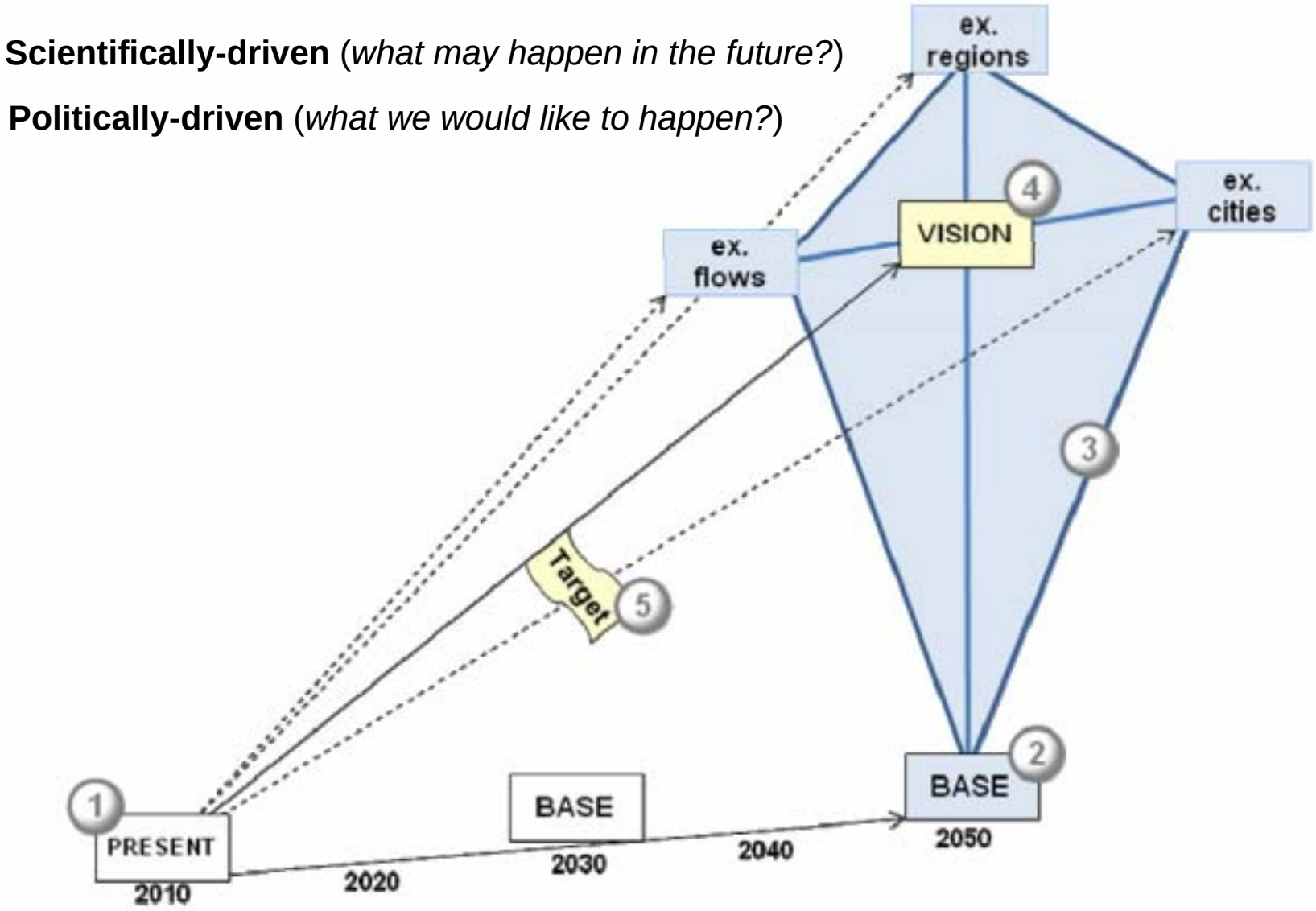
ET2050 Methodology

Scientifically-driven (*what may happen in the future?*)

Politically-driven (*what we would like to happen?*)



Domain	Forecast Models 2010-2030	Coverage	Partner
Demography	**MULTIPOL** Cohort-component, hierarchical, multiregional, supranational model of population dynamics (up to 2030)	ESPON at NUTS2	**OIM**
Economy	**MASST** Econometric: social, macroeconomic and Territorial (up to 2030)	ESPON at NUTS2	**POLIMI**
Transport	**TT/MOSAIC** Integrated modal split and traffic assignment based on TRANSTOOLS OD trip matrices (up to 2030)	EU27 at NUTS2	**MCRIT**
Land-use	**METRONAMICA** Spatial and dynamic land use model that Uses constrained cellular automata to allocate land-uses (up to 2050)	EU27 at Cells 1 km2	**RIKS**
Integrated	**SASI** Dynamic System linked to transport networks (up to 2050)	ESPON and Western Balkans at NUTS3	**S&W**

Domain	Foreight Meta-models 2030-2050	Coverage	Partner
Integrated	**TV+** First version developed in the TRANSVISIONS study (DGMOVE, 2008) to support the EC Communication on the Future of Transport, Revision of White Paper and TENs Guidelines (up to 2050)	Europe	**MCRIT**
Integrated	**PASH+** First version developed in the PASHMINA 7FP project (2011) (up to 2050)	World	**MCRIT**

Domain	Policy-evaluation	Coverage	Partner
TIA	**Territorial Impact Assessment** First version developed in the ESPON 3.2 study, then refined and applied in several ESPON projects (TIPTAP…).	Europe	**POLIMI**

1. Definition of **criteria** to evaluate policy-aims
2. Definition of **relative weights** (in the ESPON MC frame)
3. Identification of scientifically sound **indicators** to measure the criteria (to be calculated with outputs produced by forecast and foresight models)
4. **Evaluation of the scenarios**, and based on the evaluation adjustment of the scenarios
5. **Evaluation of the VISION**, and based on the evaluation refinement

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World Reference Scenario

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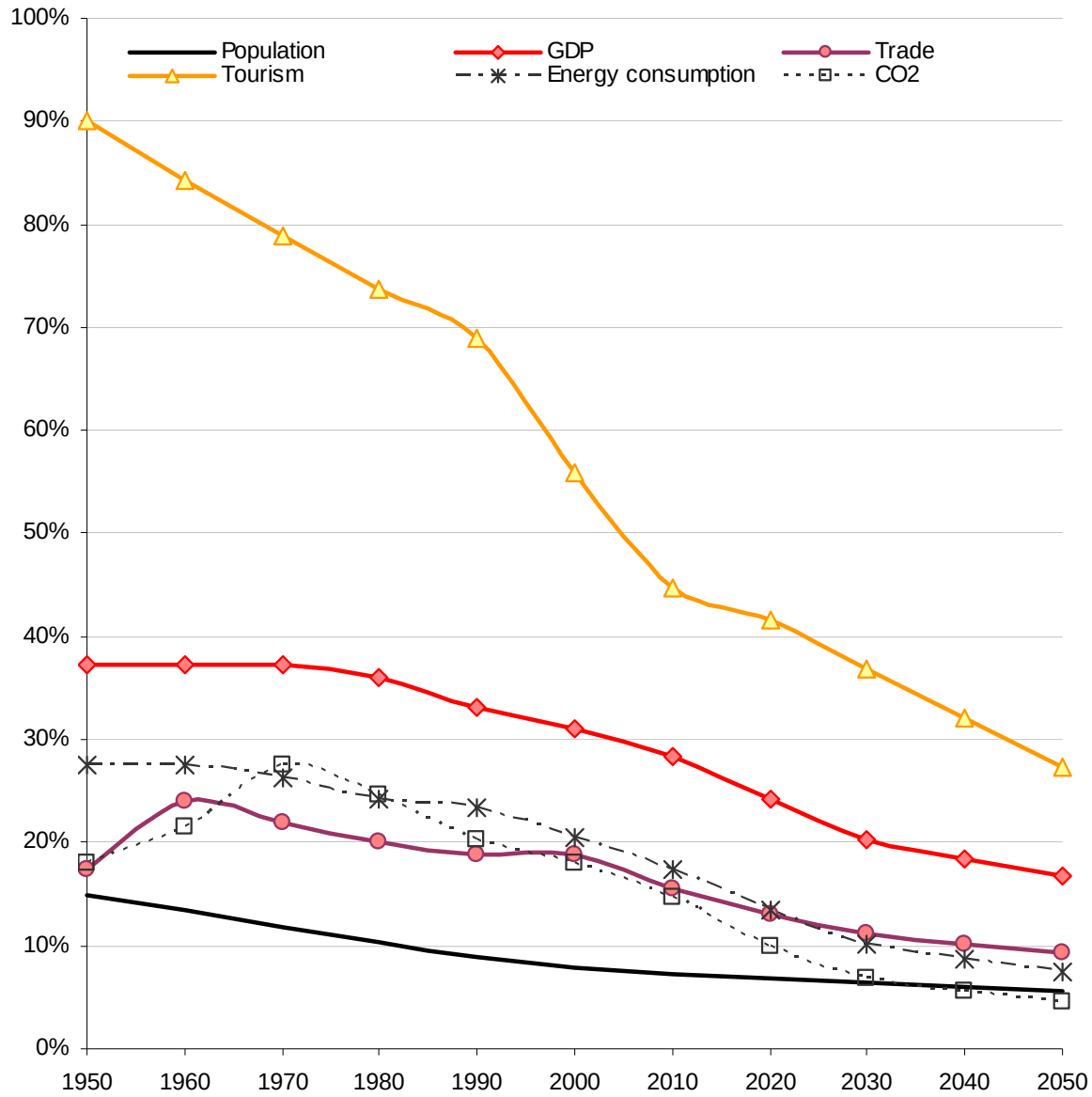
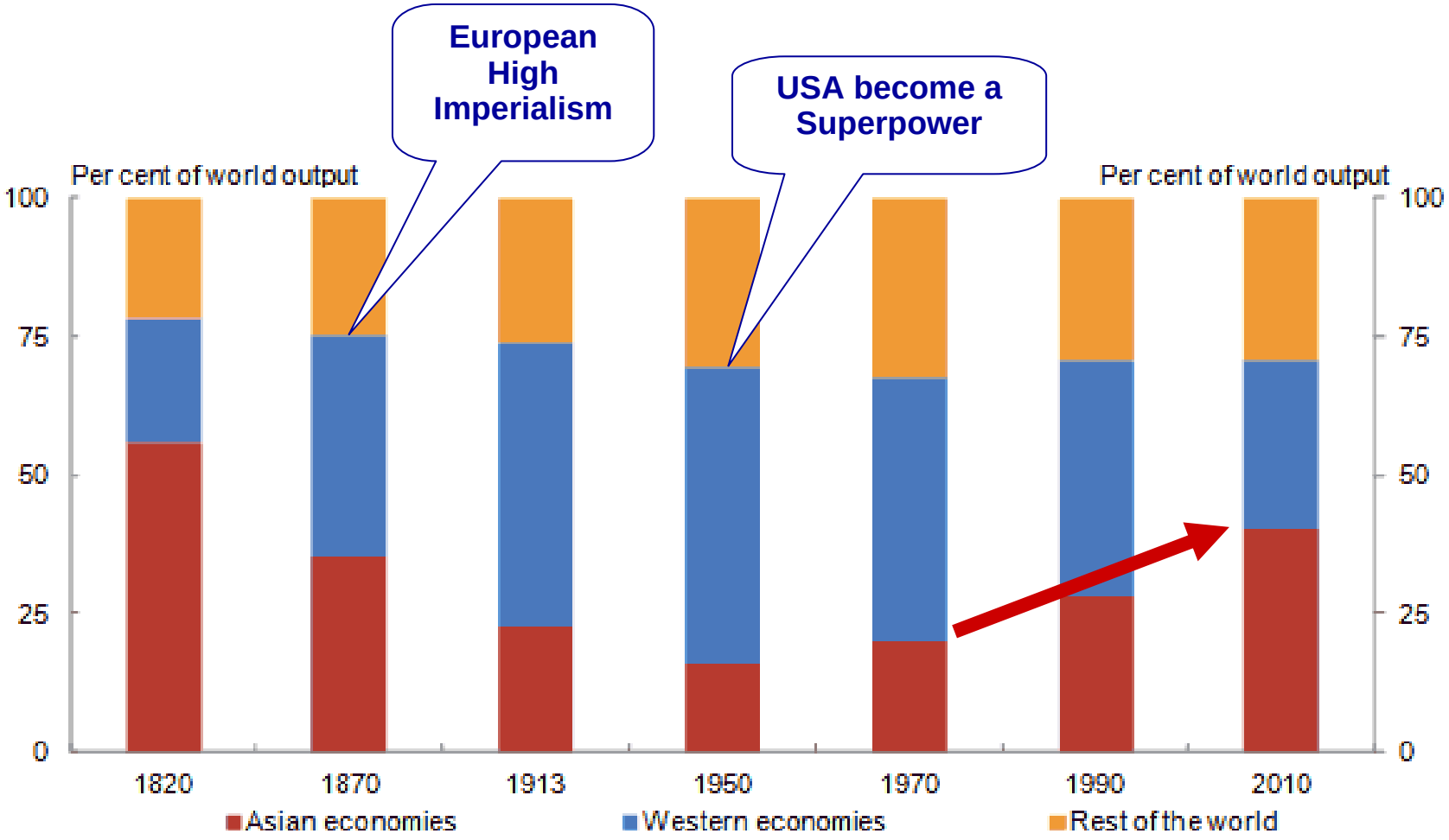
European Weight Disminishing at World Level



1990-2010 evolution of European weight in the World, and hypothesis for 2010-2050 (PASH+ foresight)

World Output Becomes More Balanced



World Reference Scenario

WORLD	1950	1960	1970	1980	1990	2000	2010	2020	2030	2040	2050
World Population (millions of people)	2.531	3.039	3.708	4.473	5.308	6.125	6.910	7.670	8.323	8.889	9.214
World Urban Population (% over total population)	29%	33%	36%	39%	43%	46%	50%	55%	59%	64%	69%
World illiteracy rate (% of population 15+)	44%	41%	37%	30%	24%	18%	17%	14%	11%	9%	7%
World Gini Coeficient (Income Disparities)	0,63	0,64	0,65	0,66	0,66	0,66	0,64	0,63	0,63	0,62	0,60
World GDP (1000 milions of 2010 €)	4.501	7.422	13.535	19.367	26.411	34.214	43.338	60.565	84.638	106.888	134.986
World total trade (goods % services in 1000 million €)	125	178	479	2.250	5.625	13.027	19.947	36.060	65.189	100.272	154.236
Global seaborne traffic (billion tonne·km)	4.862	7.197	10.654	16.777	16.440	22.927	32.746	48.472	69.707	100.246	144.163
Global air traffic (billion RPKs)	226	368	600	1.100	2.100	3.381	4.621	7.491	12.145	19.688	31.918
World Tourism (million overnight visitors per year)	25	64	109	170	319	560	940	1.281	1.746	2.379	3.241
World energy consumption (MTOE)	2.900	3.754	4.884	6.469	7.192	8.441	10.182	13.442	17.747	20.758	24.280
World CO2 emissions (million tones)	10.000	11.802	14.908	18.990	21.977	24.224	29.905	38.875	50.537	56.757	63.741
Real crude oil price (€2010 per barrel)	13	12	9	82	33	30	67	108	121	130	138

World Baseline Reference (FIR)

- Population: 9.200 M (Europe from 15% in 1950 to 7% today and 6% in 2050)
- Urban population: 69% (Europe 89% in 2050)
- GDP: € 135.000 billion (Europe from 39% in 1950 to 30% today and 18% in 2050)
- Trade: € 154.000 billion (Europe from 17% in 1950 to 15% today and 9% in 2050)
- Maritime transport: € 145.000 billion ton·km (average 3,7% annual growth, EU 2%)
- Air transport: € 32.000 billion RPK (average 5,0% annual growth, EU 3,5%)
- Tourism: 3.250 million visitors (Europe from 90% in 1950, 45% today and 27% 2050)
- Energy Consumption: 24.300 MTOE (Europe 28% in 1950, 17% today, 9% in 2050)
- CO2 emissions: 64.000 Mton (Europe from 18% in 1950, 15% today, and 5% in 2050)

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Present State of Europe

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The Sapir Report (2004): : **An Agenda for a Growing Europe**

"Over the past decade European economic integration has seen considerable institutional success, but the economic performance of the EU has been varied. While macroeconomic stability has improved and an emphasis on cohesion preserved, **the EU economic system has not delivered satisfactory growth performance".**

This opinion is the report of a high-level group commissioned by the President of the European Commission to review the EU economic system and propose a blueprint for an economic system capable of delivering faster growth along with stability and cohesion.

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Felipe González Europe 2030 Group (2010): **Reform or Decline?**

"The challenges we face today are different to those of the past and call for different responses. Europe has lost its political momentum and risks falling into a deepening decline unless its leadership can convince European voters to embrace a more sweeping, unifying strategy to marshal the full potential of the 27-nation bloc … …the **choice for the EU is clear: reform or decline**".

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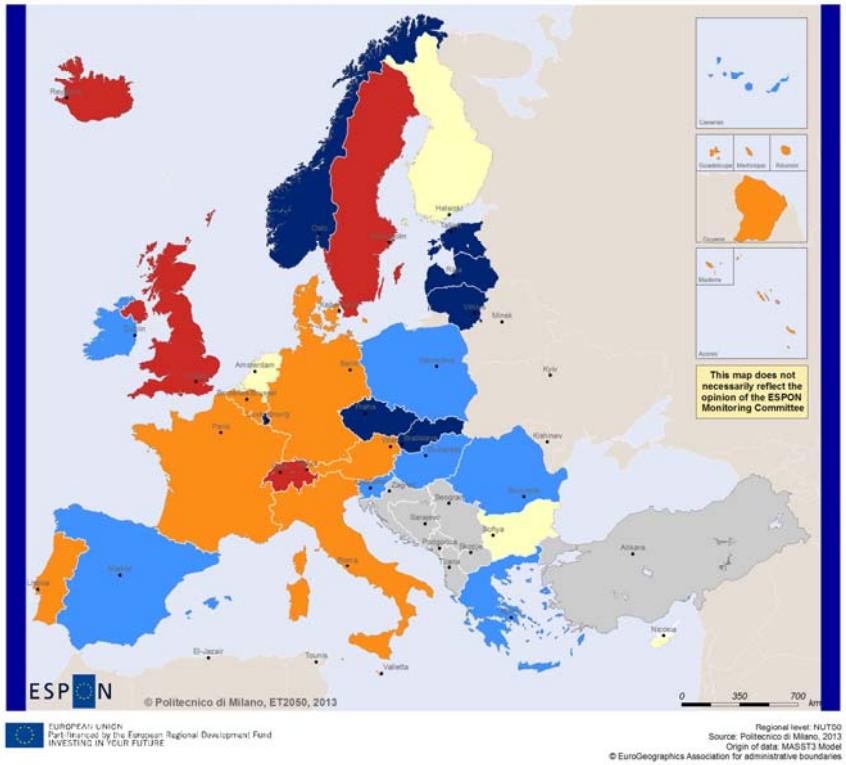
2000-2008: Moderate Growth & Convergence

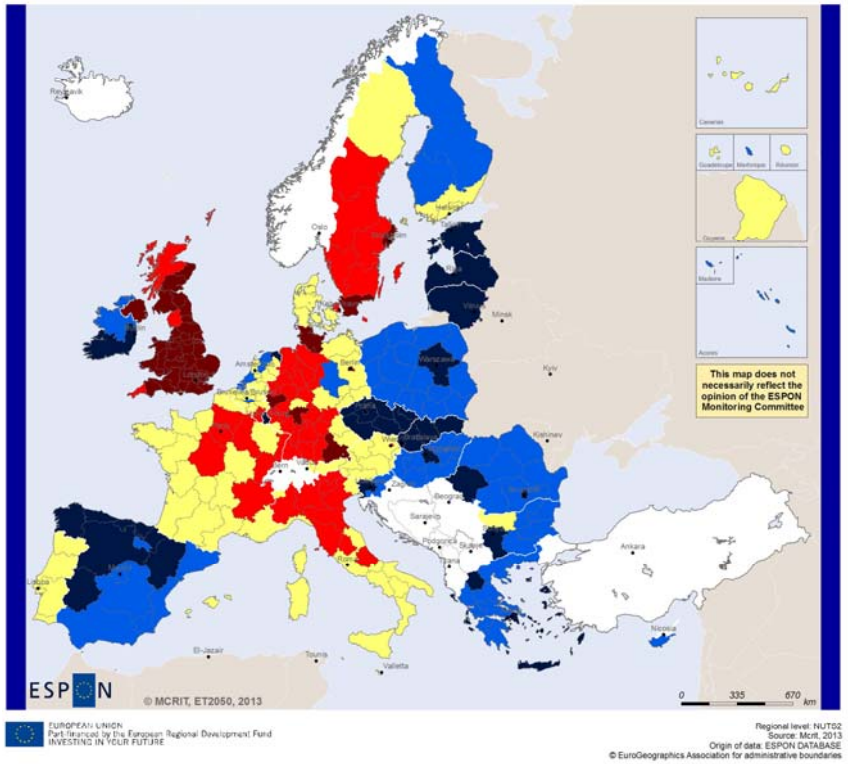
Relative change in GDP per capita from 2000 to 2008
Measured in percentage to EU31 average GDP growth



Relative change in GDP per capita growth in relation to EU31 average (Units: %)

- < -10%
- -10% - 0%
- 0% - 10%
- 10% - 20%
- > 20%
- No data (ESPON space)
- No data (No ESPON space)

Relative change in GDP per capita from 2000 to 2008
Measured in percentage (%) to the EU27 average GDP growth

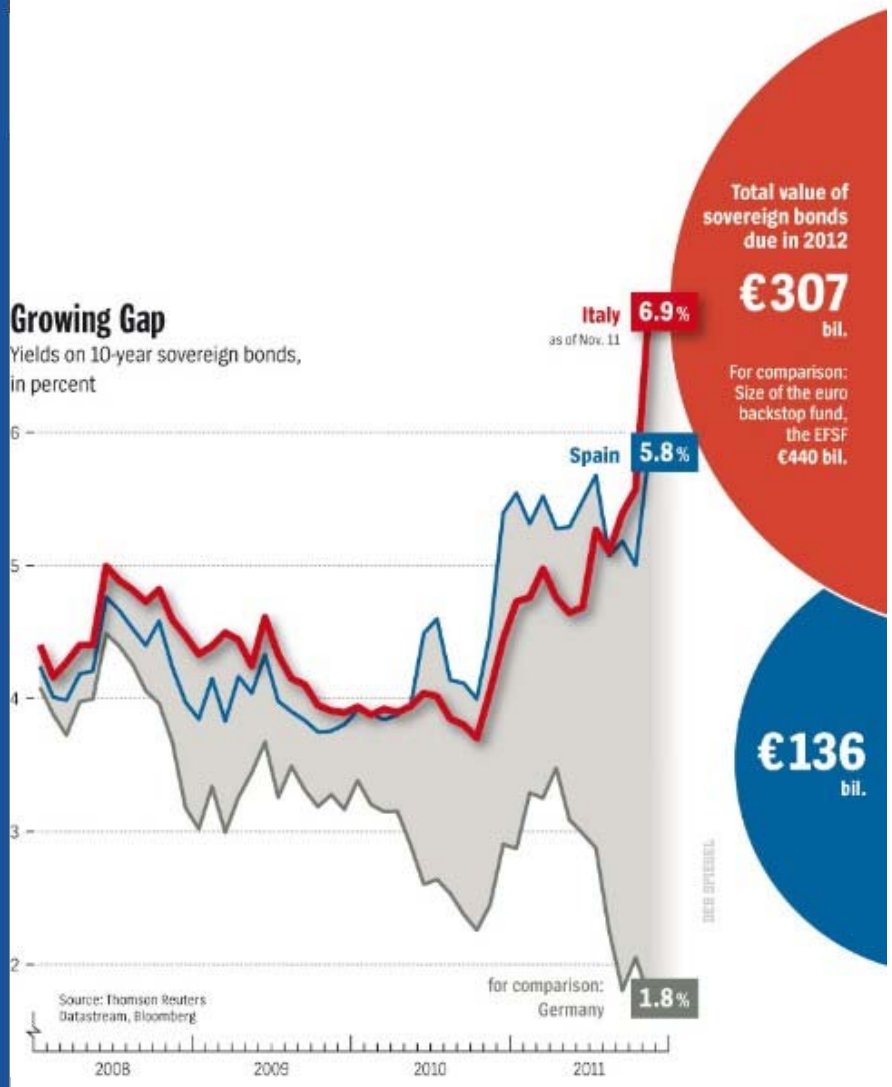


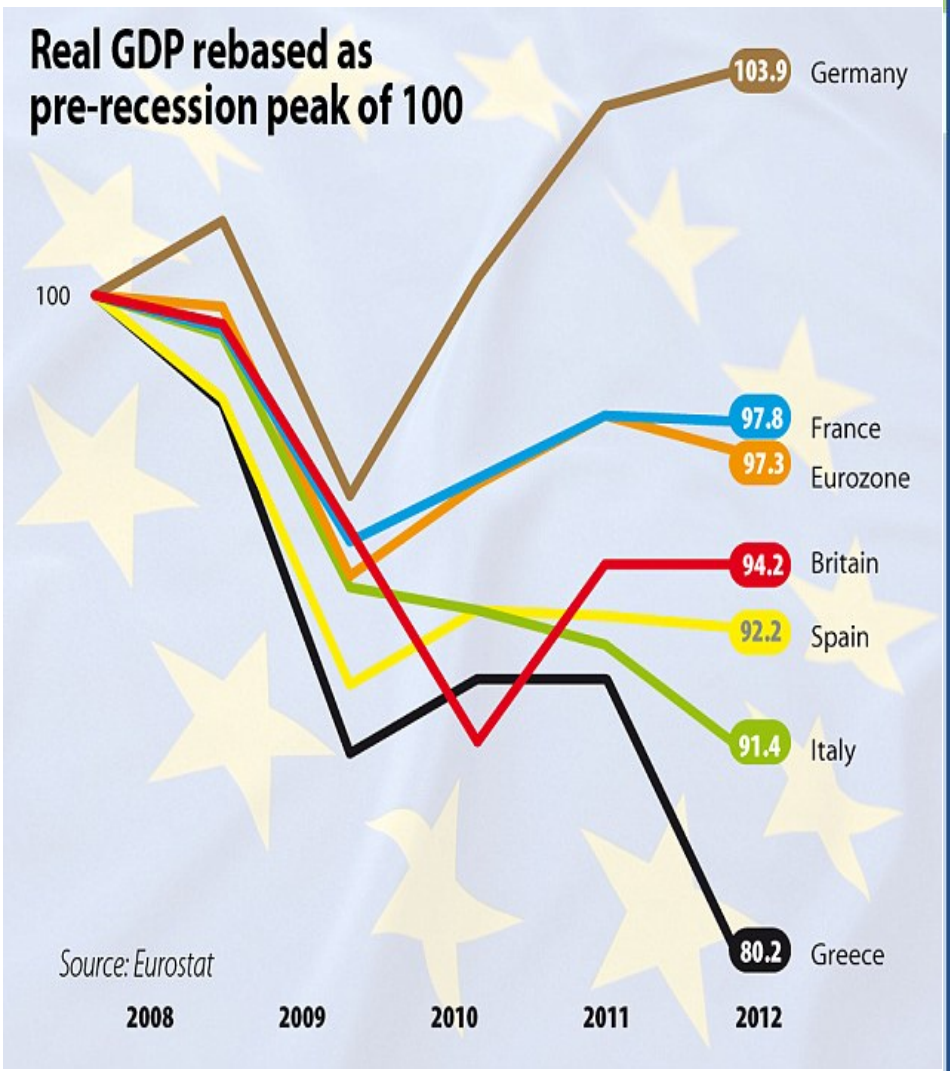
Relative change in GDP per capita growth in relation to EU27 average

- < -15%
- -15% - -5%
- -5% - 5%
- 5% - 15%
- > 15%

2000-2008 economic convergence was real and sustainable?

2008-2013: Financial Crisis & Divergence





To what extend the crisis will have lasting impacts?

EU Council President Van Rompuy (2012): **A Survival Crisis**

EU Council President Herman Van Rompuy has warned that the eurozone and the European Union itself are fighting for their life as a result of the ongoing sovereign debt shocks. "**We're in a survival crisis**," the president said. If the eurozone does not survive, neither will the EU.

Present State

- Financial Crisis leading to dramatic financial unbalances
- Economic Disparities have grown 2008-2013
- Social Welfare Reduced (unemployment and public cuts)
- Weaknesses of European policies (Monetary and Fiscal…)
- European strong austerity policies unique at World level

- *Ex-post Evaluations of Cohesion policies should be reviewed?*

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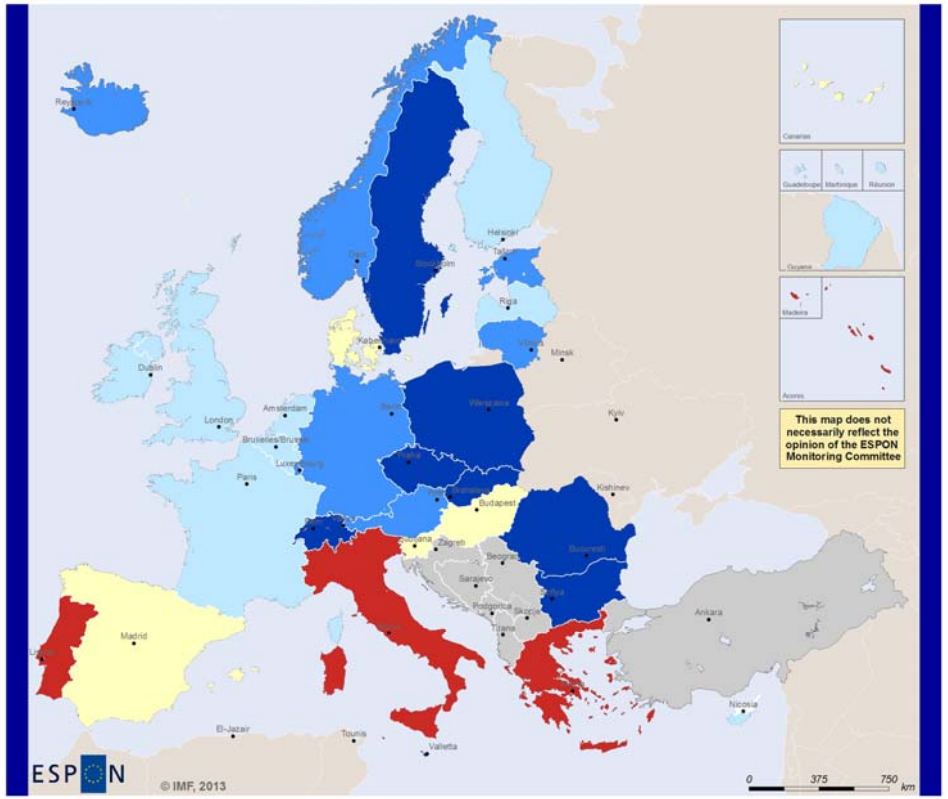
IMF Economic Forecast 2008-2017

GDP Growth 2008 - 2017, 10 years period (Source: IMF 2013)

Measured as annual average GDP growth rate along the period

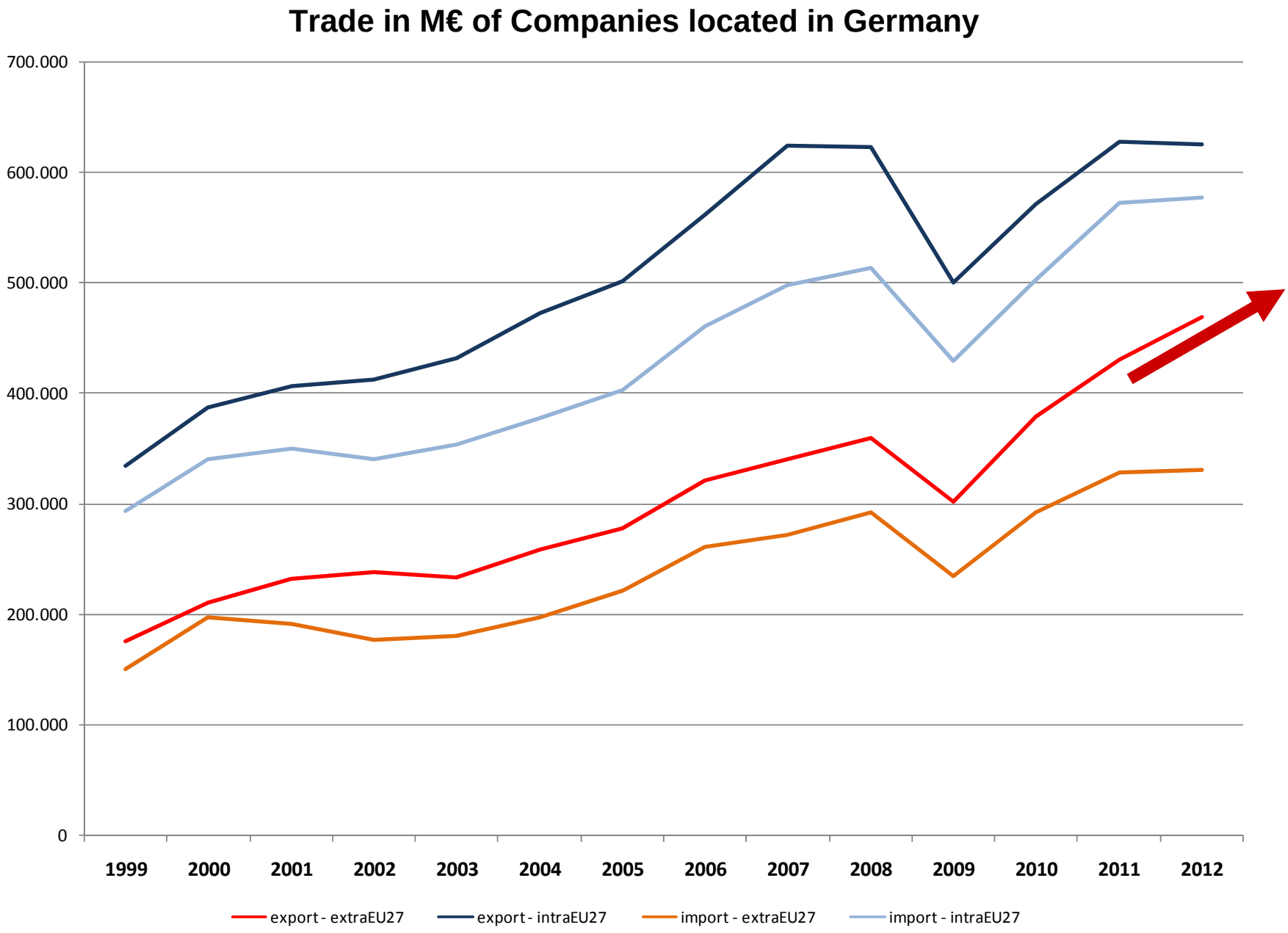


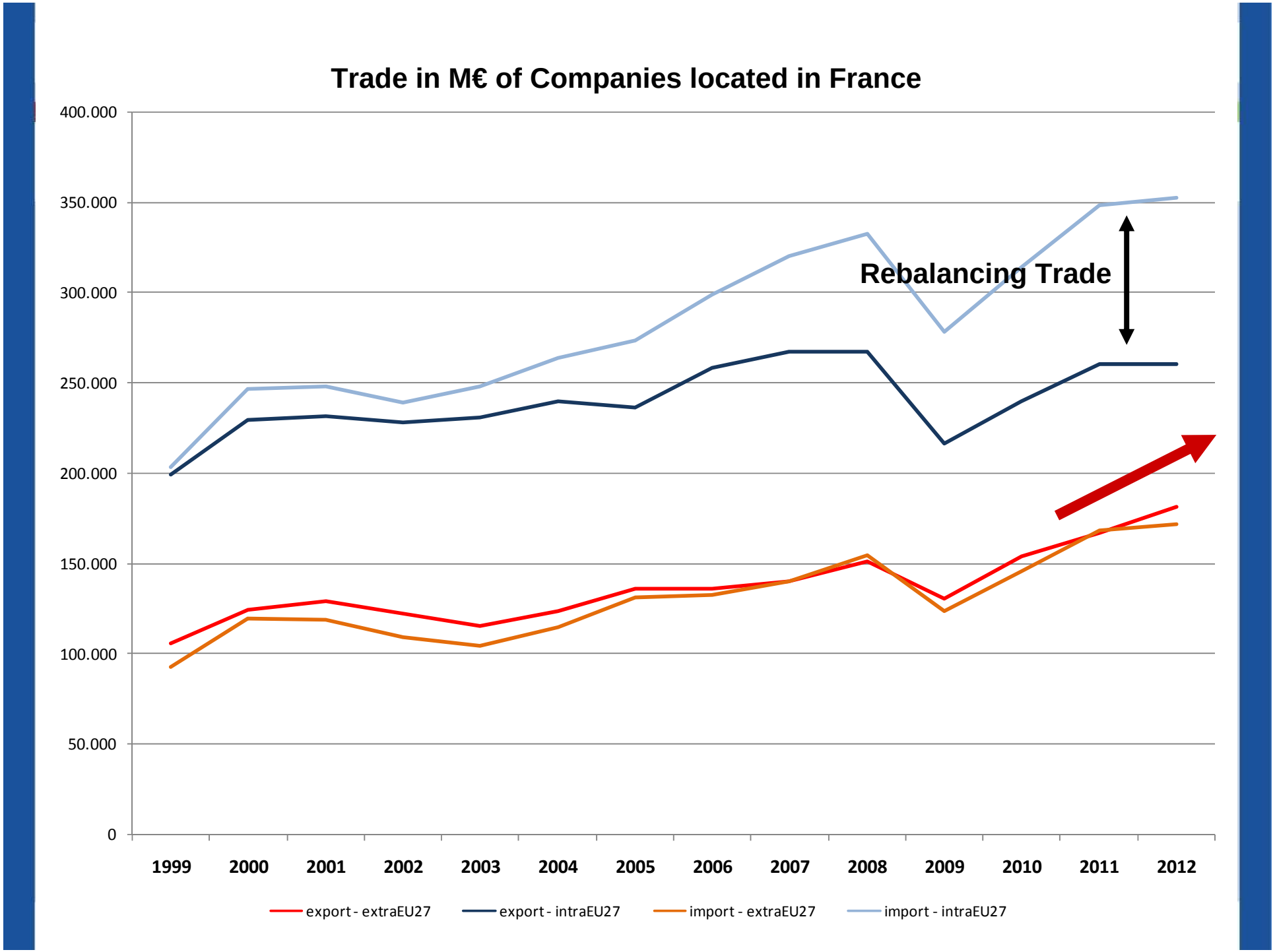
GDP Growth annual average rate (Units: %)

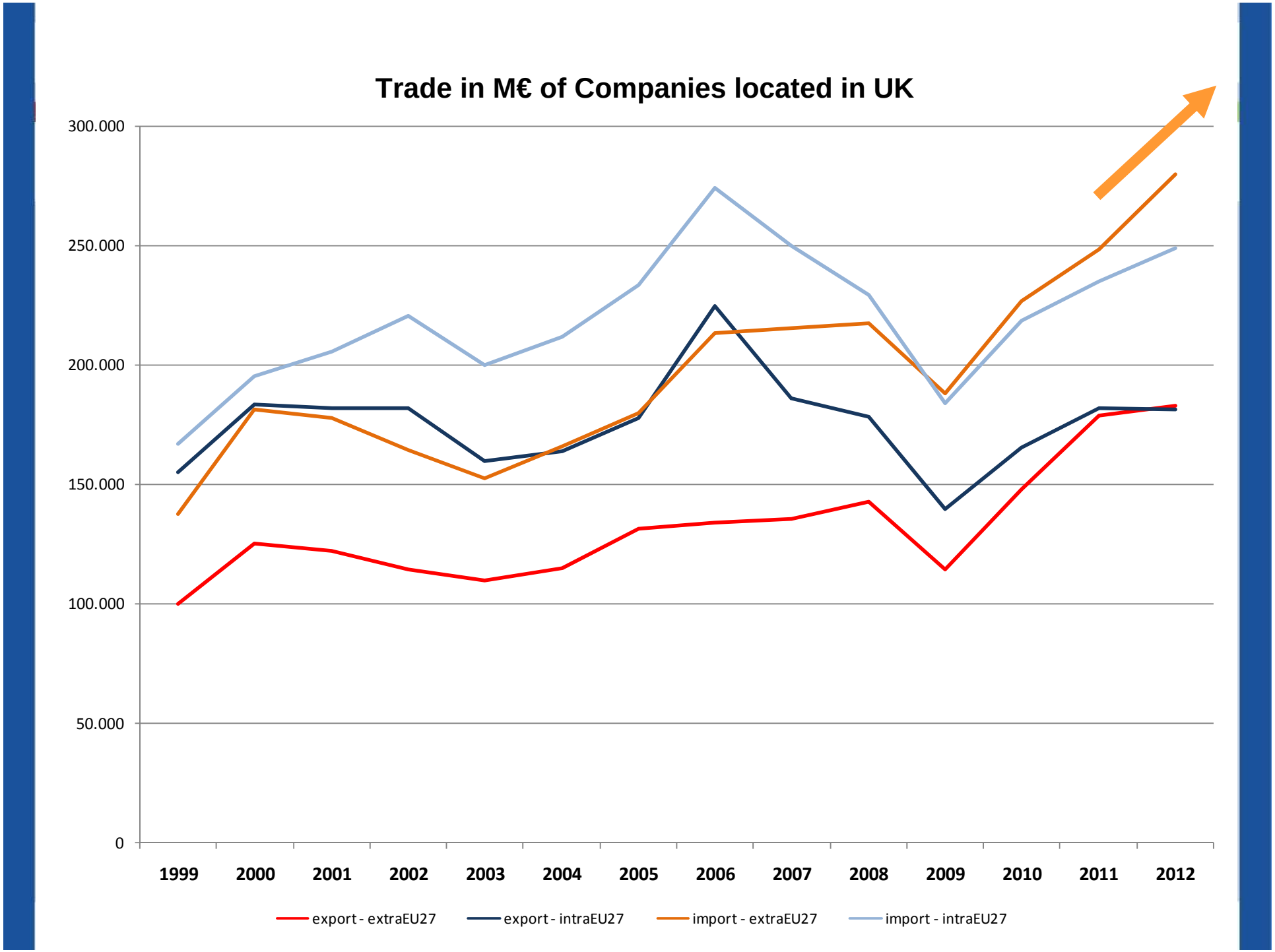
Results obtained by IMF

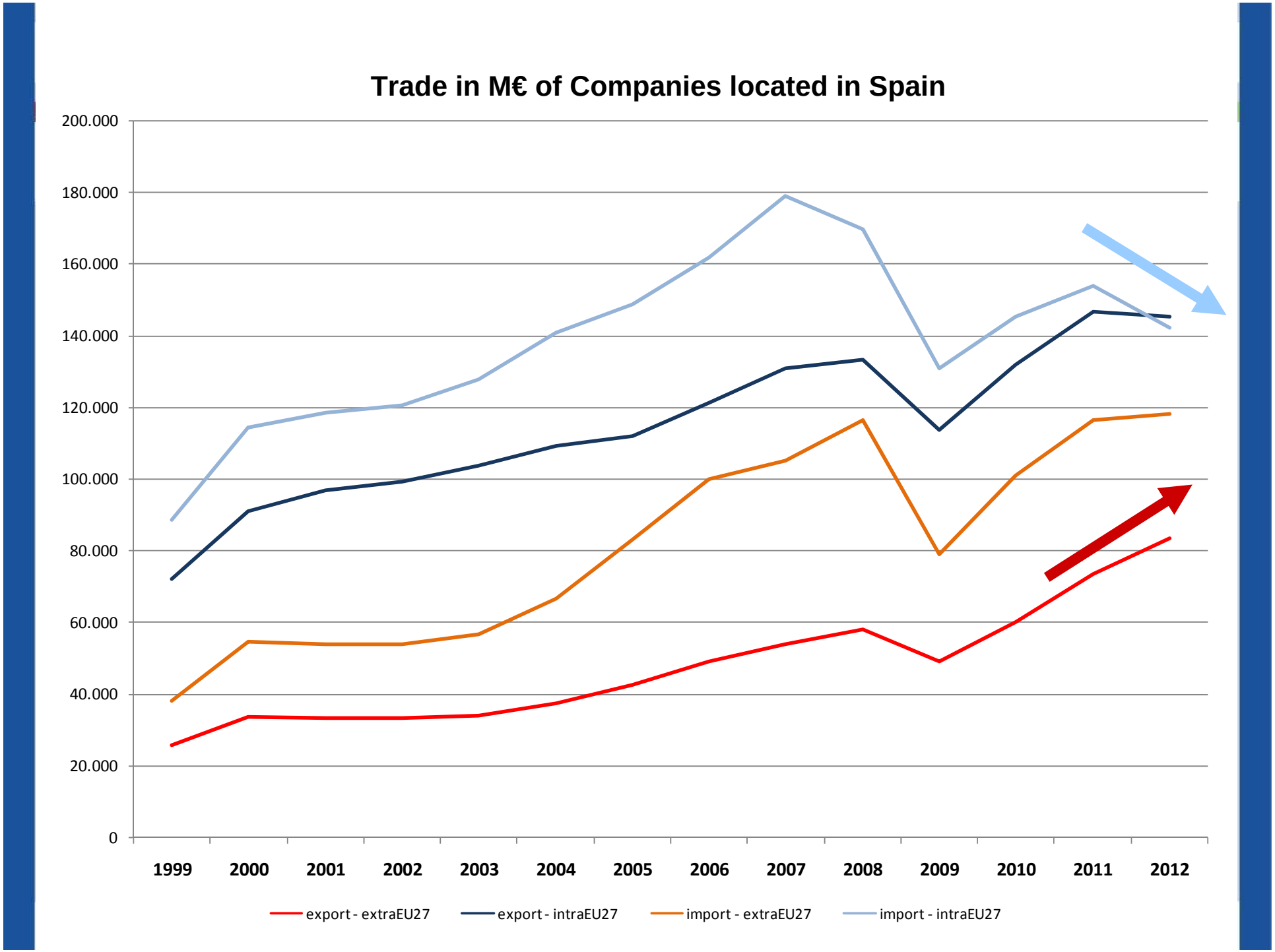
- -1,6% - 0%
- 0% - 0,6%
- 0,6% - 1%
- 1% - 1,6%
- 1,6% - 3,6%
- No data (ESPON space)
- No data (No ESPON space)

2008-2013: Opening to Global Markets

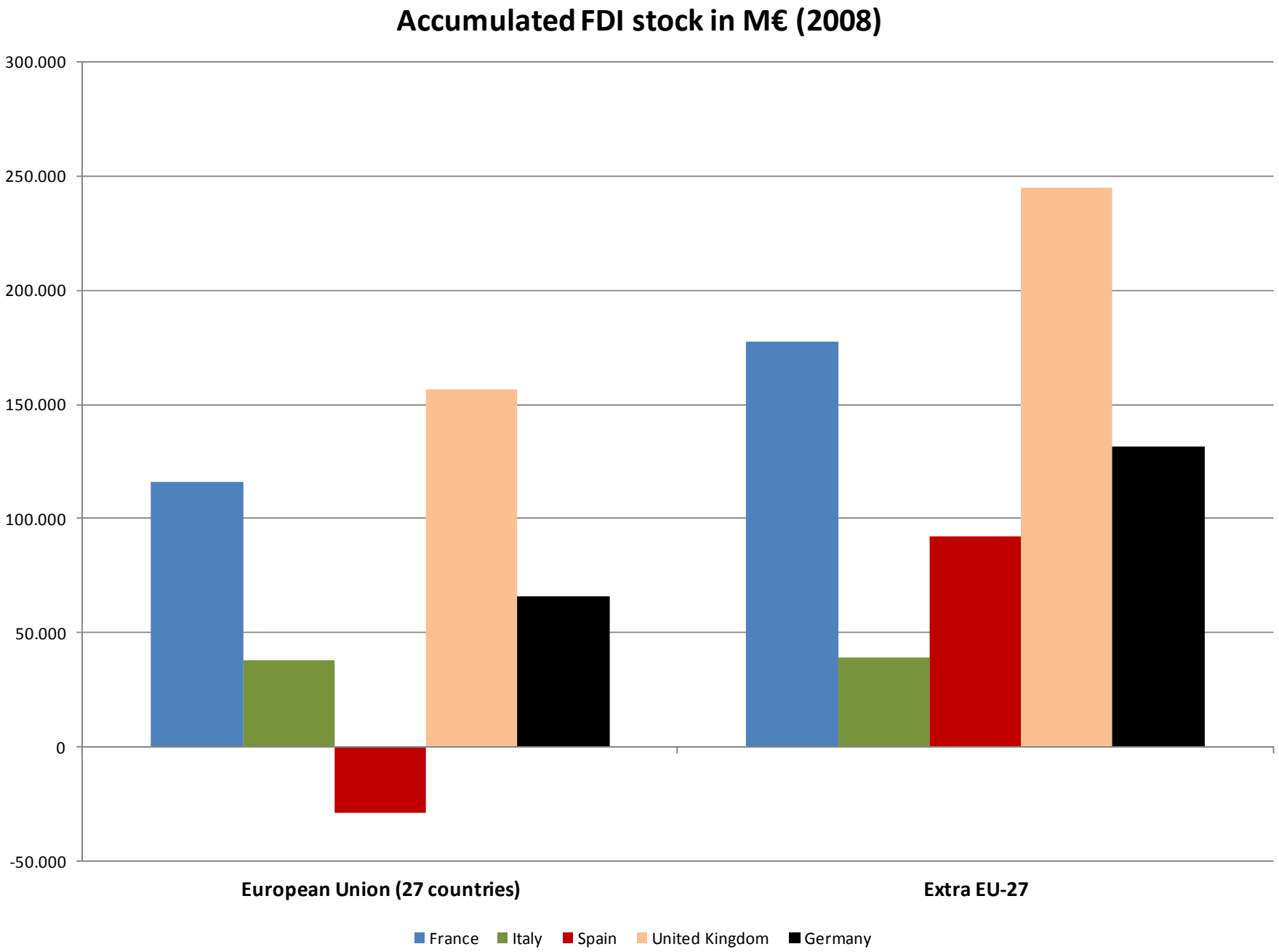



Trade in M€ of Companies located in France
400.000
350.000
300.000
250.000
200.000
150.000
100.000
50.000
0
Rebalancing Trade
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
export - extraEU27
export - intraEU27
import - extraEU27
import - intraEU27

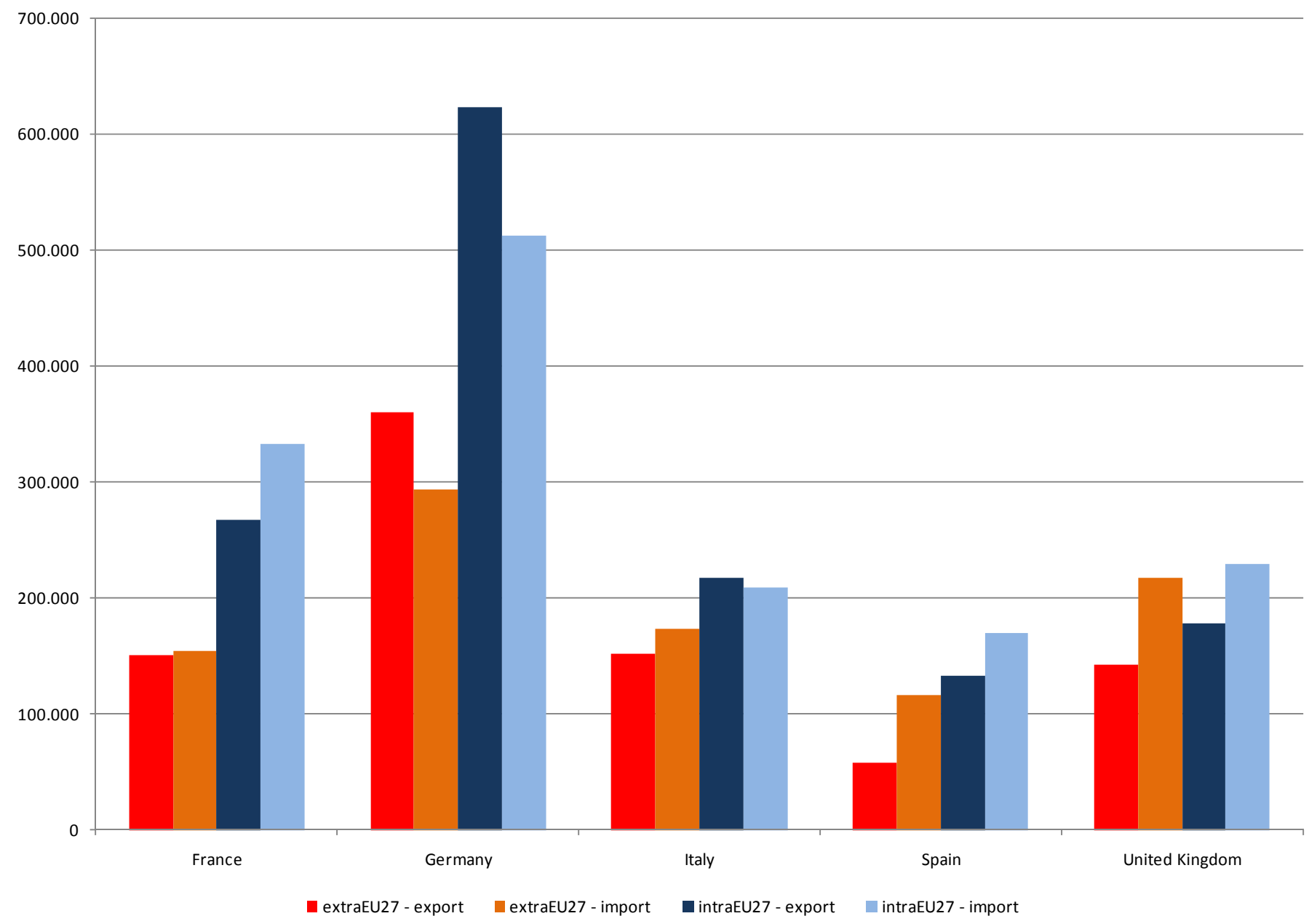

Trade in M€ of Companies located in UK
300.000
250.000
200.000
150.000
100.000
50.000
0
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
export - extraEU27
export - intraEU27
import - extraEU27
import - intraEU27


Trade in M€ of Companies located in Spain
200.000
180.000
160.000
140.000
120.000
100.000
80.000
60.000
40.000
20.000
0
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
export - extraEU27
export - intraEU27
import - extraEU27
import - intraEU27

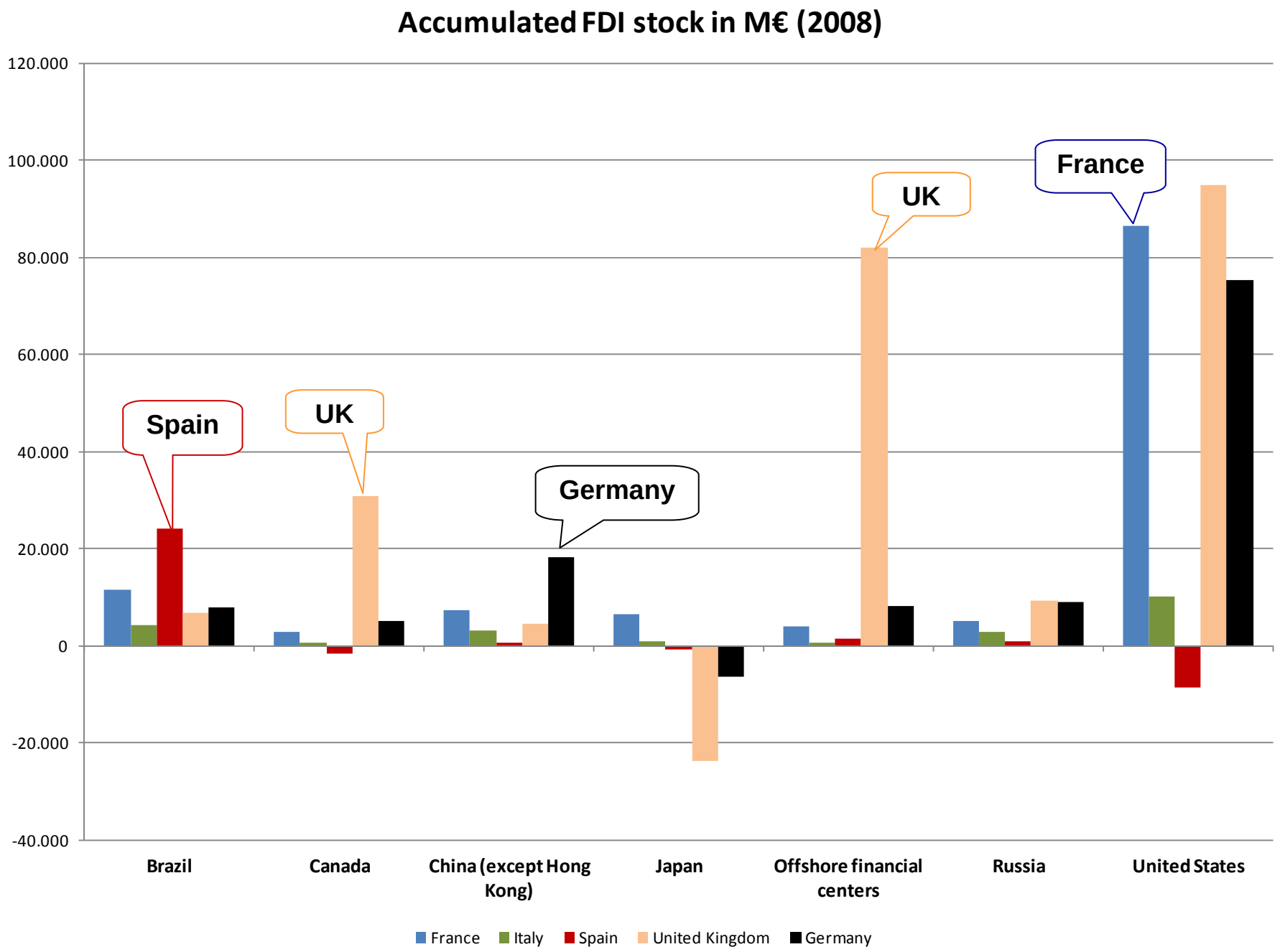
Increasing Globalisation of European Economies



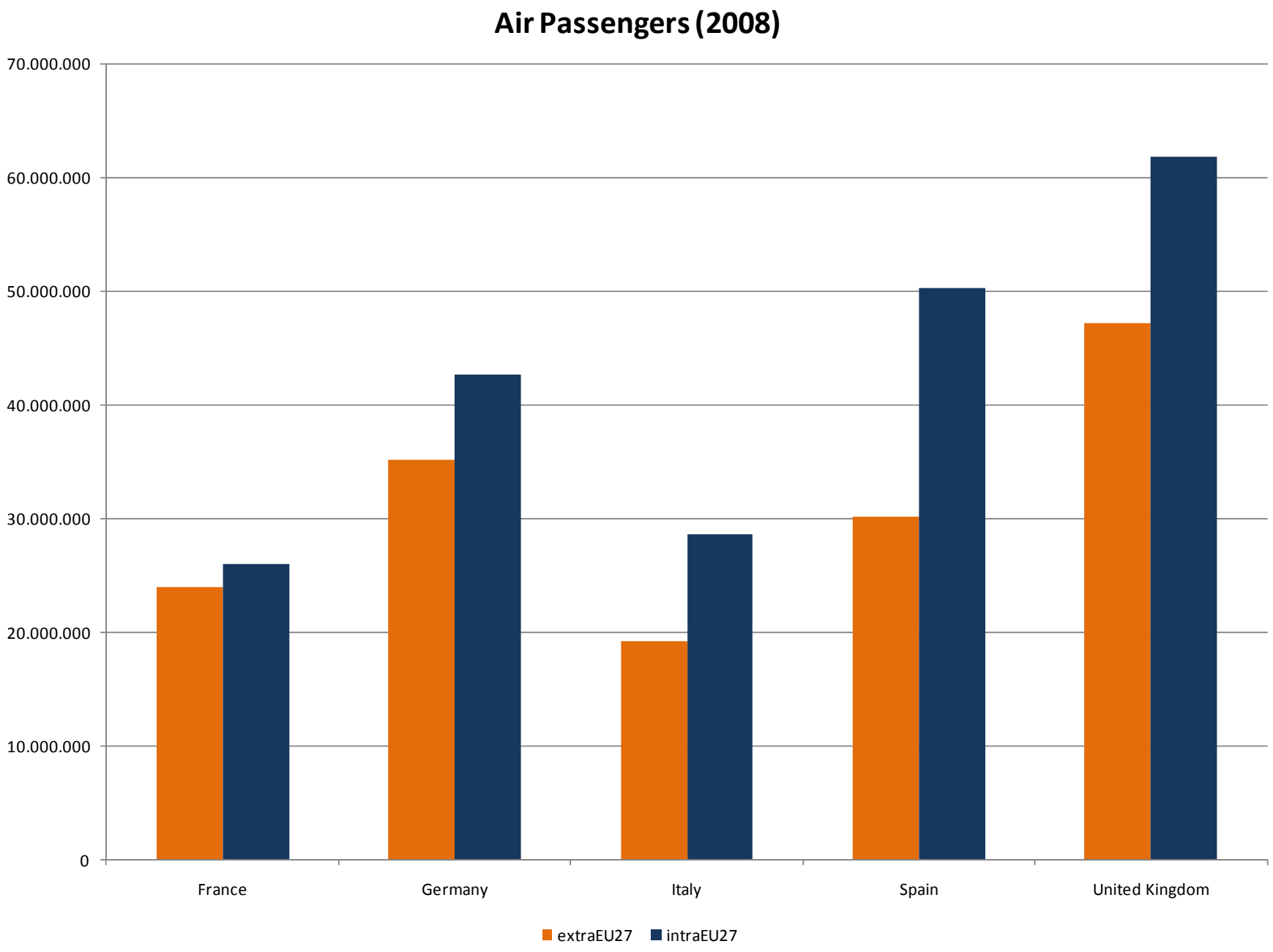
Increasing Globalisation of European Economies



Global Specialisation for EU Economies



Increasing Globalisation of European Economies



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Baseline Scenario for Europe

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Baseline 2030...

- More stable population. Depopulation of Eastern European rural regions
- Aging in most regions
- Continuous East-West labor-related migrations.
- Average economic growth at a moderate, not marginal, level
- Divergent economies, with higher productivity gaps
- More jobs being created everywhere, with lower salaries
- Marginal economic growth is not always related to productivity gains

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Baseline 2030

- Reindustrialisation of the economy
- Technological innovation concentrated only in some sectors and regions.
- Increasing dependency of more expensive energy
- Limited cross-border territorial integration
- Increasing road share
- Polarised development in global transportation nodes
- Expansive land consumption, and more hybrid urban-rural geographies
- Reduction on GHG in more advanced industrial economies

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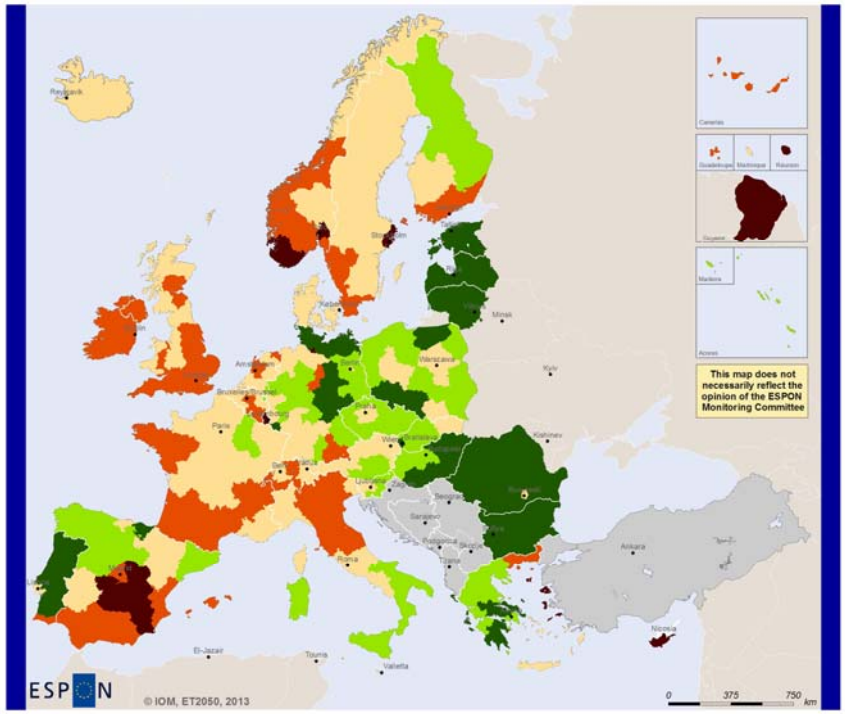
Agregated Results	Baseline 2030
Total Population in 2030 (in millions; *514 million in 2010*)	530.2
Total Migrations 2010-2030 (cumulated number of migrants in millions)	37.9
Economic Growth (average yearly increase 2010-2030)	+1.89%
Regional Divergence (GINI coefficient in 2030; *26.1 in 2008*)	28.5
Total Employment (average yearly increase 2010-2030)	+1.59%
Manufacturing Employment (average yearly increase 2010-2030)	+1.38%
Service Employment (average yearly increase 2010-2030)	+1.63%
Total transport demand for passengers (total pax·km increase 2010-2030 in %)	+39.0%
Total travel cost (total euros increase 2010-2030 in %)	+39.3%
Total time spent travelling (total hours increase 2010-2030 in %)	+41.0%
Total CO2 due to transport (total tones increase 2010-2030 in %)	-25.2%
Total CO2 (total tones increase 2010-2030 in %)	-28.9%

Scenarios 2030: Population

Total Population 2010 - 2030 (Baseline)

Measured as annual average population growth rate along the period



Population relative change (Units: %)

Results obtained by MULTIPOLES forecast model

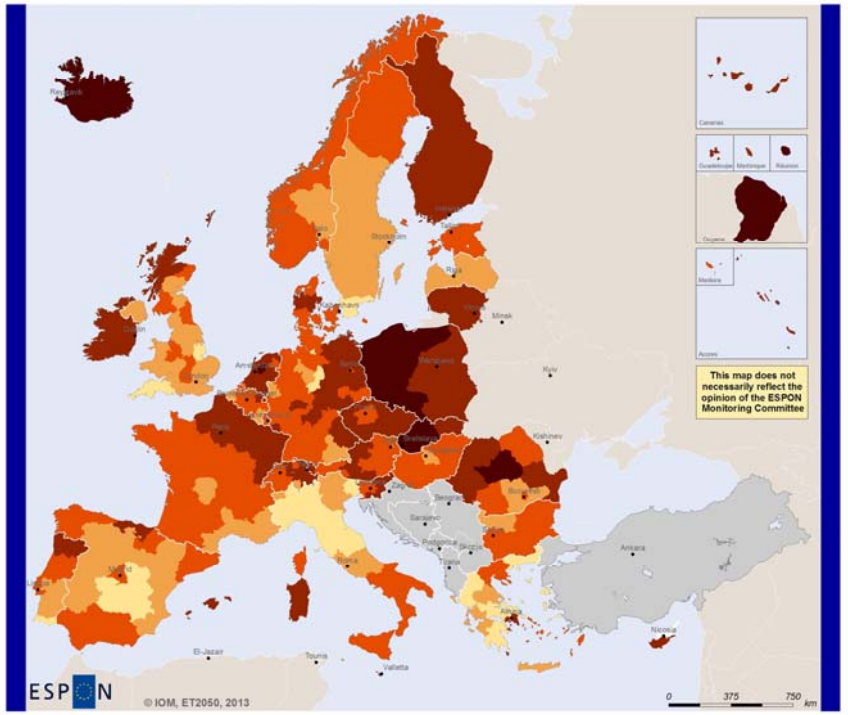
- < -0,5%
- -0,5% - 0%
- 0% - 0,5%
- 0,5% - 1%
- > 1%
- No data (ESPON space)
- No data (No ESPON space)

European population growth will tend towards stabilisation. Total population (ESPON Space) will grow from 514 million in 2010 to 530 million in 2030.

MULTIPOLES a cohort-component population dynamics model. It is used for the simulations of complex hierarchical multiregional, multi-country population systems; for analysing impact of various scenarios concerning migration, fertility, and mortality.

Ageing 2010 - 2030 (Baseline)

Measured as annual ageing increase rate



Old-Age Dependency Rate 2010 - 2030 increase (Units: %)

Results obtained by MULTIPOLES forecast model

- < 1%
- 1% - 2%
- 2% - 2.5%
- 2.5 - 3%
- > 3%
- No data (ESPON space)
- No data (No ESPON space)

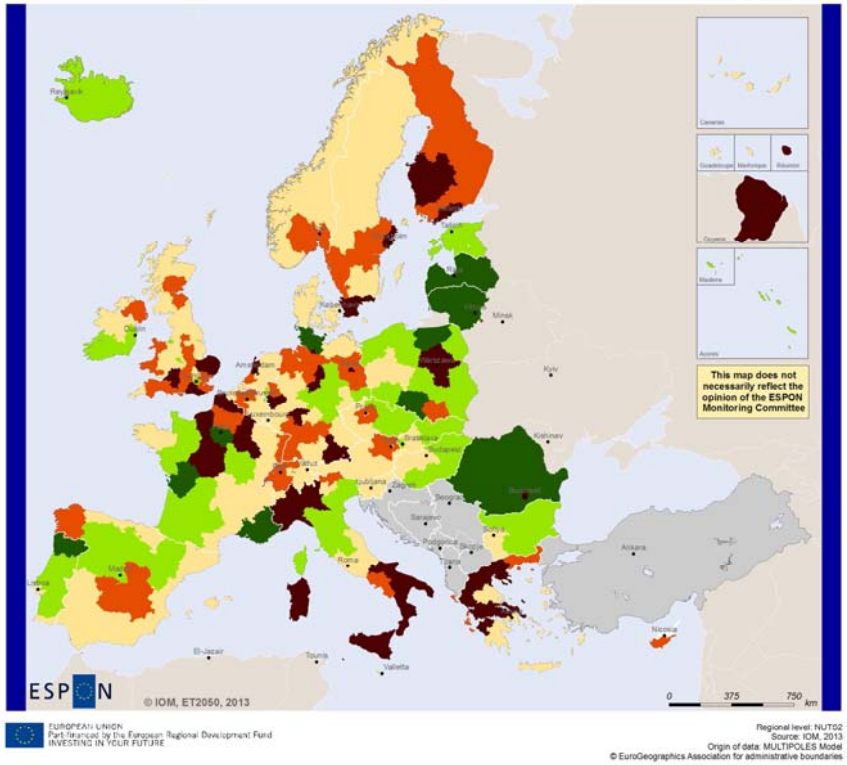
Ageing grows fast across Europe. Percentage of population older than 65 years increases in Europe from 25% to 40% (210M of elderly).

MULTIPOLES a cohort-component population dynamics model that considers population age groups in 5 years, also for migrants.
The Old-Age Dependency Rate is measured:
ODR = Population > 64 / population 16 - 64.

Baseline 2030: Net Migration

Net Migration 2010 - 2030 (Baseline)

Measured as annual net migration along the period



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Regional level: NUTS2
Source: IOM, 2013
Origin of data: MULTIPOLES Model
© EuroGeographics Association for administrative boundaries

Annual Net Migration (Units: Persons)

Results obtained by MULTIPOLES forecast model

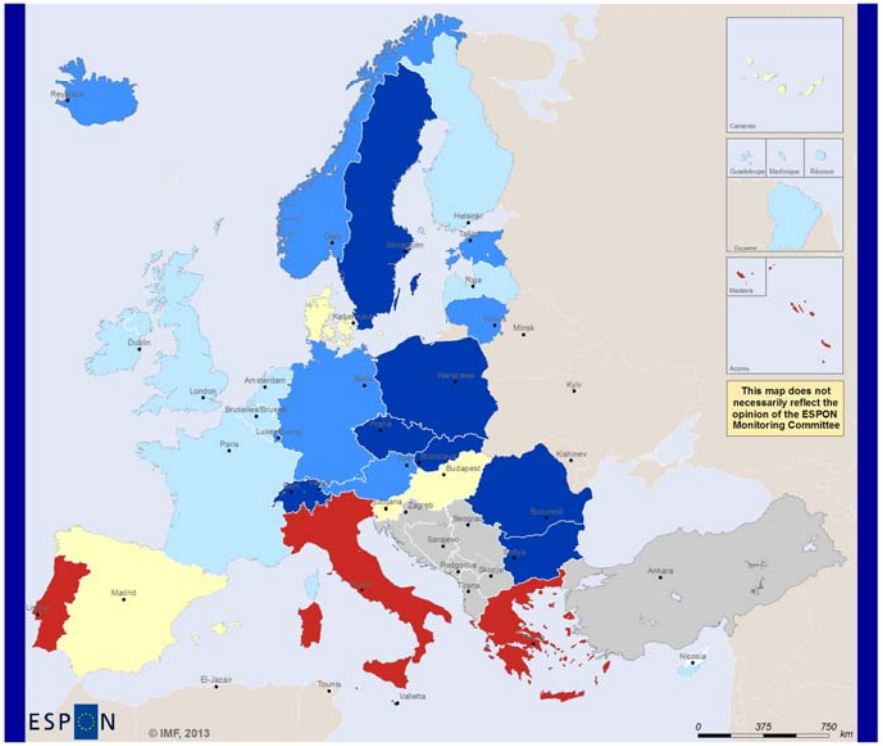
- < -5000
- -5000 - 0
- 0 - 5000
- 5000 - 10000
- > 10000
- No data (ESPON space)
- No data (No ESPON space)

East-West migration increases, as well as from rural to large metropolitan regions. Total migration increases up to 20 millions.
MULTIPOLES a cohort-component population dynamics model projection of migration flows are based on labour markets assumptions. Residential tourism of Northern Europeans retirees, for instance, in Southern regions, is not considered

Baseline 2030: Economic Growth

GDP Growth 2008 - 2017, 10 years period (Source: IMF 2013)

Measured as annual average GDP growth rate along the period



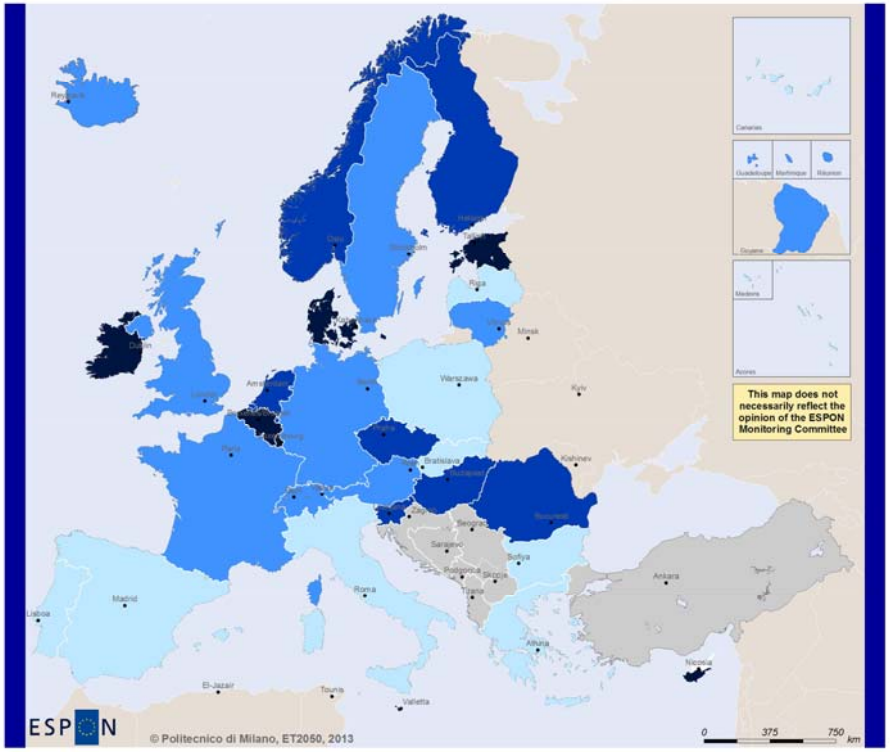
GDP Growth annual average rate (Units: %)

Results obtained by IMF

- -1,6% - 0%
- 0% - 0,6%
- 0,6% - 1%
- 1% - 1,6%
- 1,6% - 3,6%
- No data (ESPON space)
- No data (No ESPON space)

GDP Growth 2010 - 2030, 20 years period

Measured as annual average GDP growth rate along the period



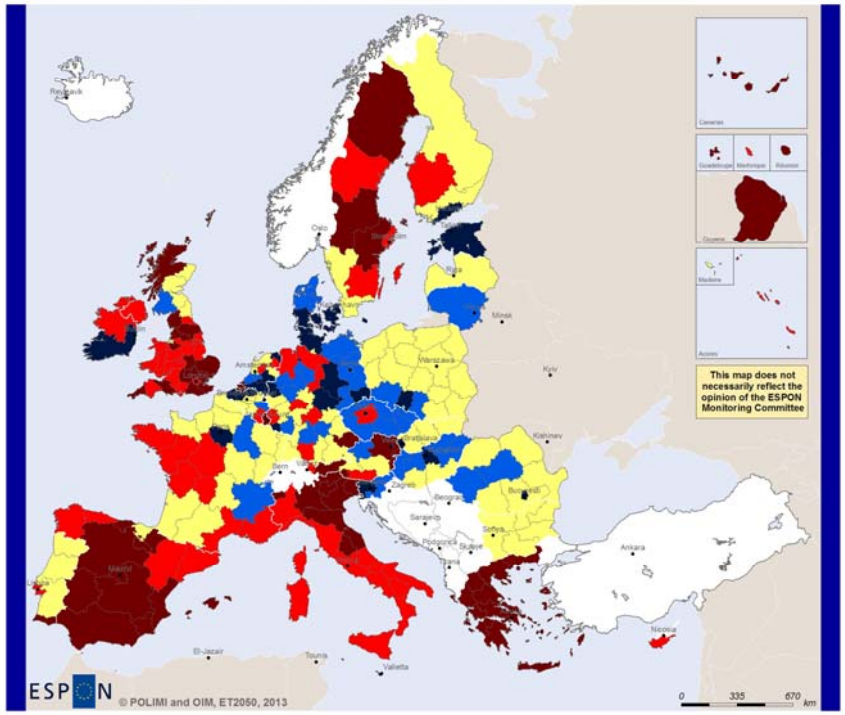
GDP Growth annual average rate (Units: %)

Results obtained by MASST3 forecast model

- 0,32% - 1,83%
- 1,83% - 2,28%
- 2,28% - 2,63%
- 2,63% - 3,81%
- No data (ESPON space)
- No data (No ESPON space)

Baseline 2030: Growth per capita

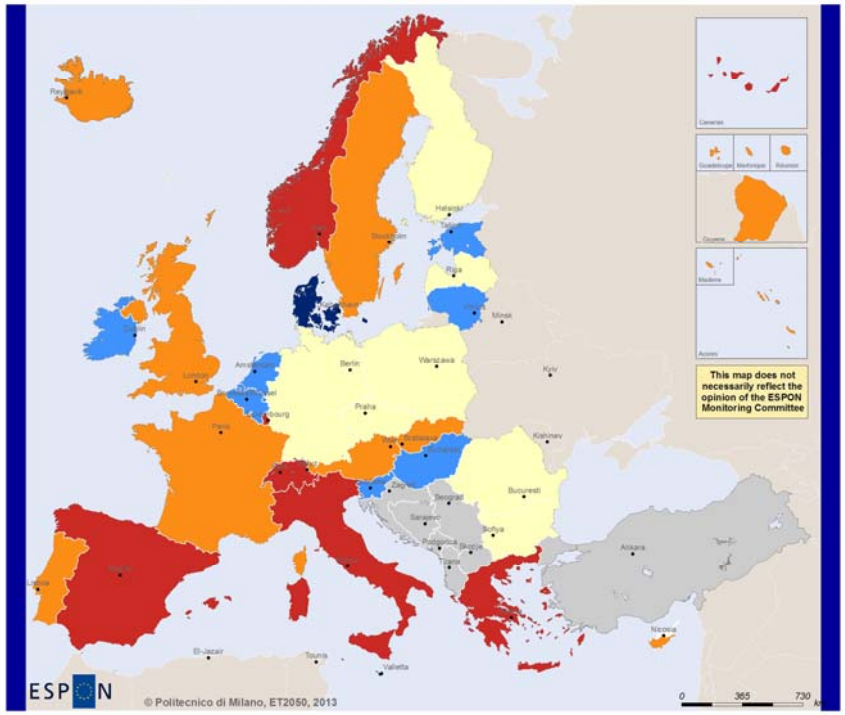
Relative change in GDP per capita from 2008 to 2030 (Baseline)
Measured in percentage (%) to the EU27 average GDP growth



Relative change in GDP per capita growth in relation to EU27 average
Results obteined by MASST (Economy) and MULTIPOLES (Demography) forecast models

- < -15%
- -15% - -5%
- -5% - 5%
- 5% - 15%
- > 15%

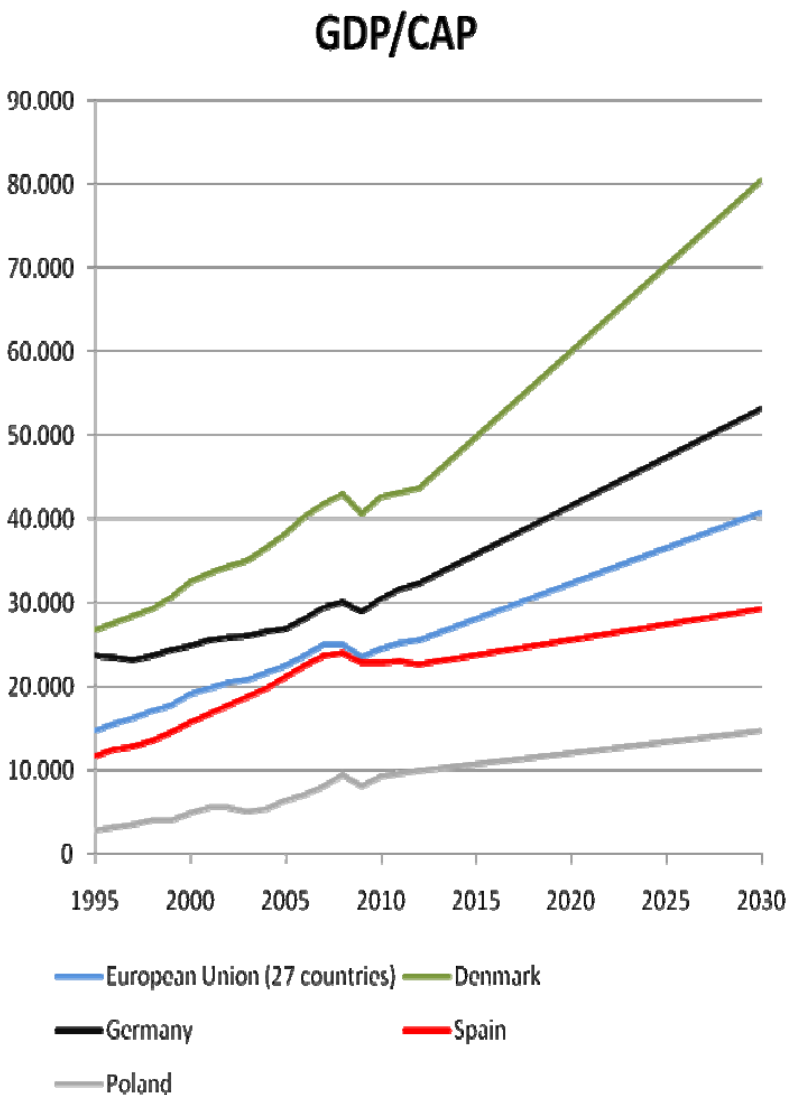
Relative change in GDP per capita from 2008 to 2030 (Baseline)
Measured in percentage to EU31 average GDP growth

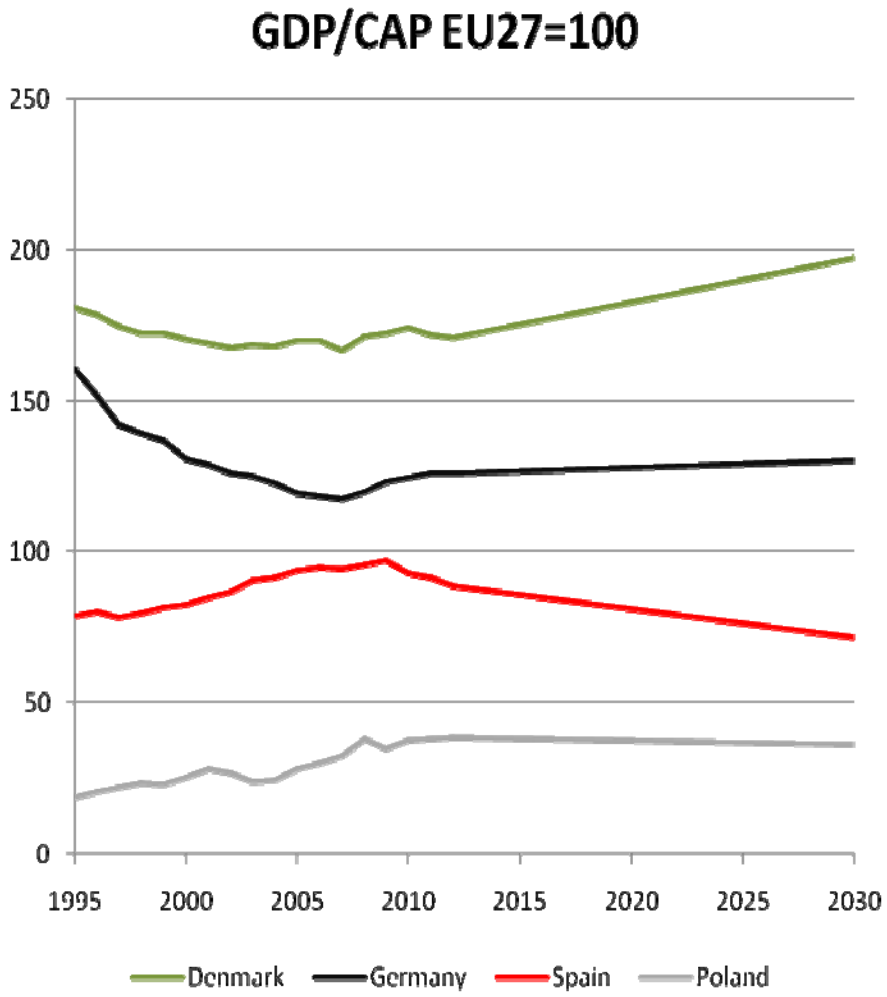


Relative change in GDP per capita growth in relation to EU31 average (Units: %)
Results obtained by MASST3 forecast model

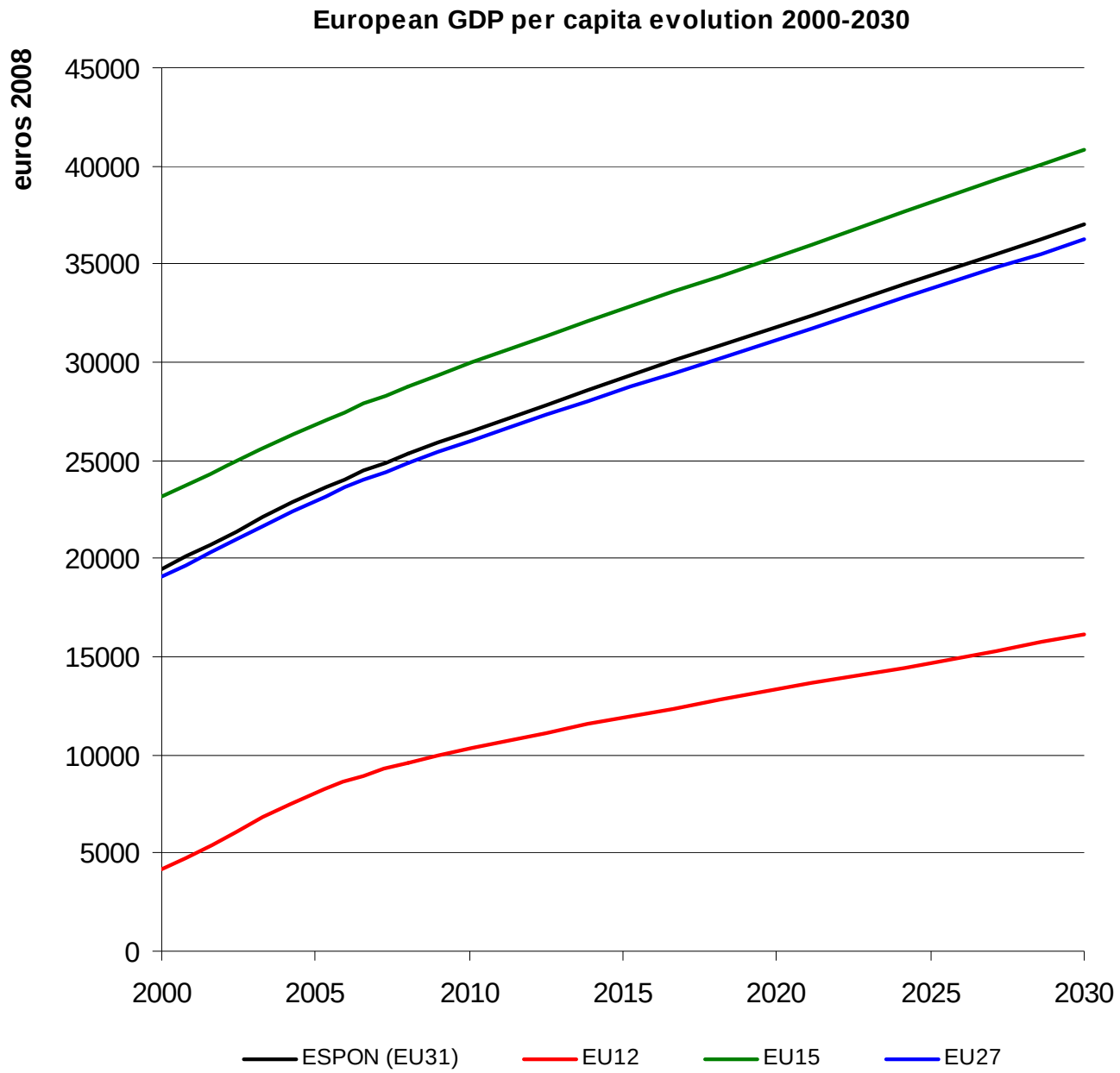
- -49% - -10%
- -9% - 0%
- 1% - 10%
- 11% - 20%
- 21% - 41%
- No data (ESPON space)
- No data (No ESPON space)

End of the Economic Convergence process





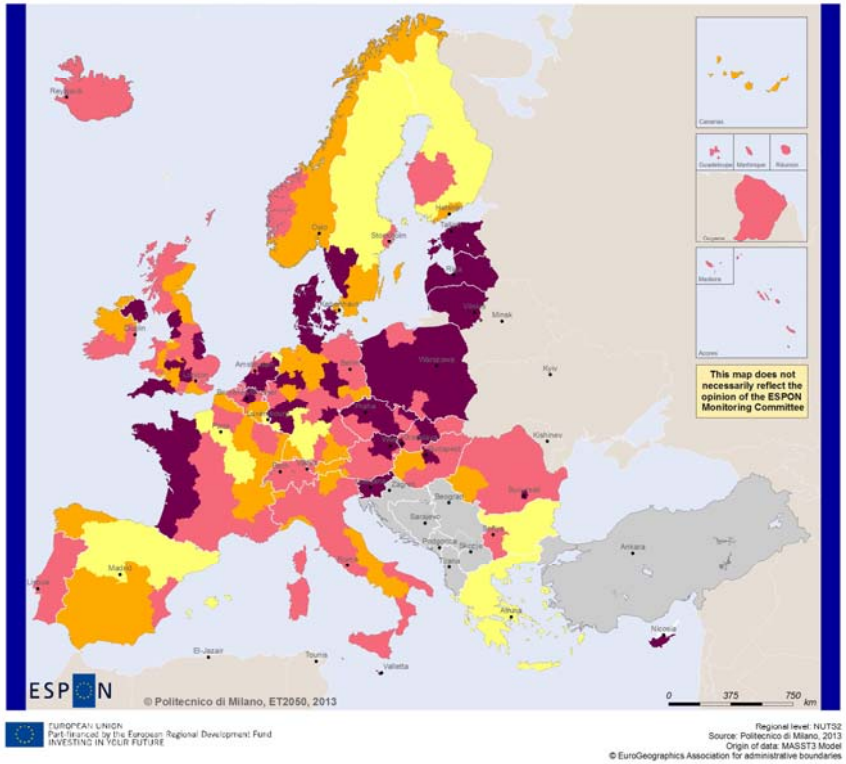
End of the Economic Convergence process?



Baseline 2030: Employment

Employment 2010 - 2030 (Baseline)

Measured as annual average employment growth rate



Employment growth annual average rate (Units: %)

Results obtained by MASST3 forecast model

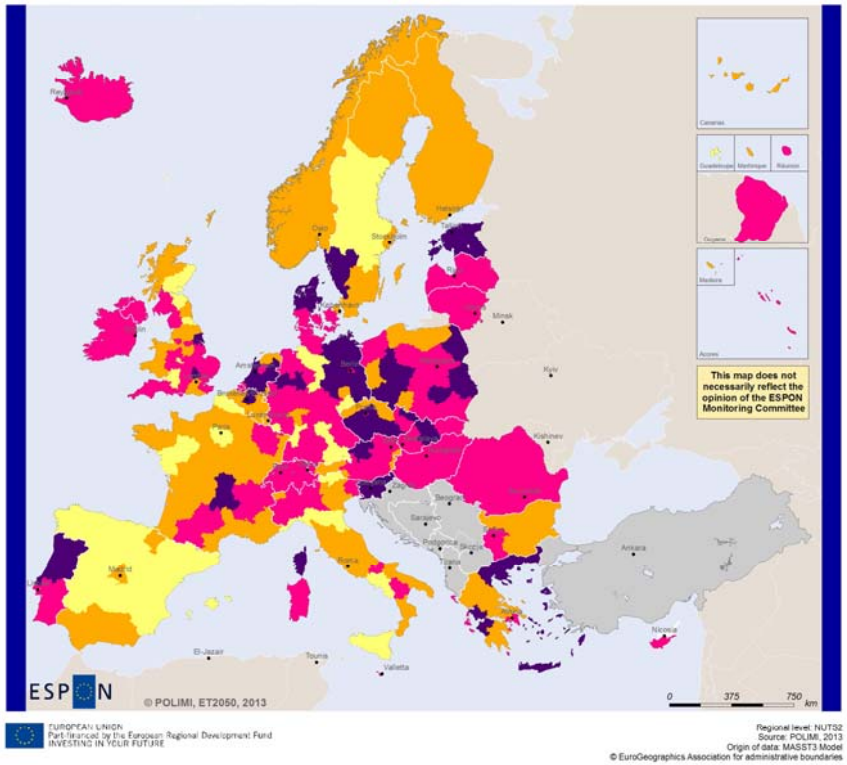
- < 1%
- 1% - 1,5%
- 1,5% - 2%
- > 2%
- No data (ESPON space)
- No data (No ESPON space)

Employment grows at a sustained rate in Europe, meaning that large part of the recovery from the crisis comes from job creation and lower salaries, instead of productivity gains. (ESPON Space annual average employment growth rate 1.59%)

MASST3 is an econometric, macroeconomic, sectoral, social and territorial model. It has been upgraded to explicitly take into account the impact of the current economic crisis.

Service and manufacturing employment 2010 - 2030 (Baseline)

Measured as annual average employment growth rate related to EU average growth rate



Service and manufacturing employment growth

Results obtained by MASST3 forecast model

- Both rates below to EU average
- Manufacturing employment growth rate over to EU average
- Service employment growth rate over to EU average
- Both rates over to EU average
- No data (ESPON space)
- No data (No ESPON space)

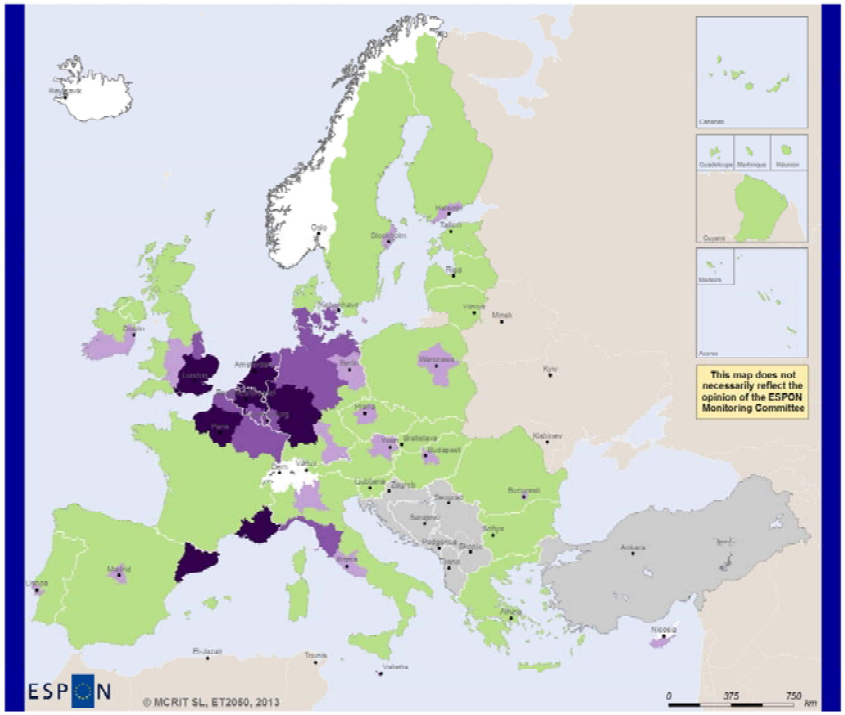
Manufacturing employment grows at similar rates that services, in a reindustrialisation process. (ESPON space annual average of manufacturing employment growth is 1.49% and annual average of services employment growth is 1.69%).

MASST3 is an econometric, macroeconomic, sectoral, social and territorial model. It has been upgraded to explicitly take into account the impact of the current economic crisis.

Baseline 2030: Global and European Accessibility

Global Accessibility 2010 - 2030 (Baseline)

Measured as potential intercontinental airplane seats and containers in relation EU average



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Regional level: NUTS2
Source: MCRIT, 2013
Origin of data: MCRIT
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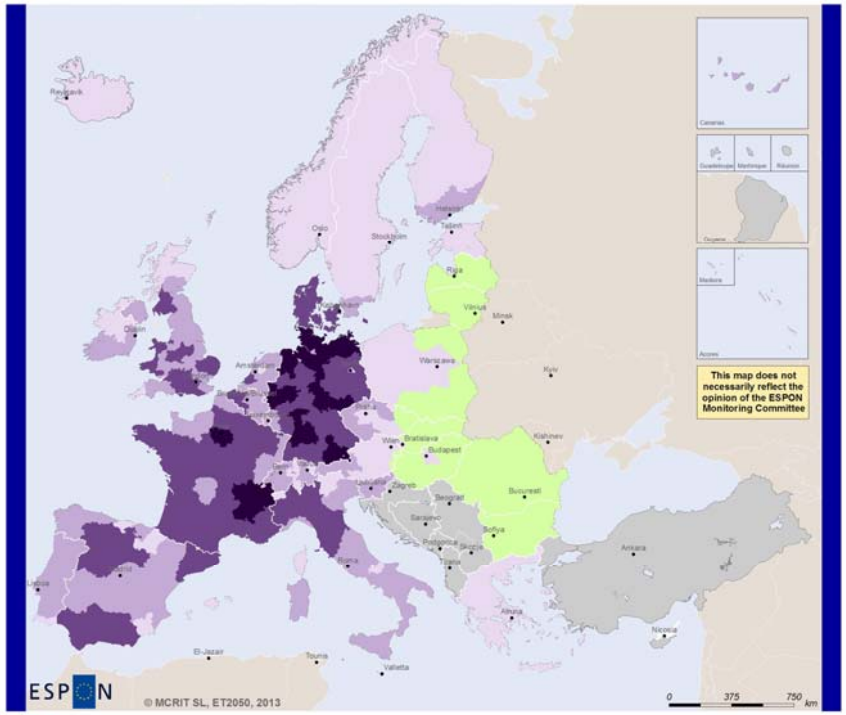
Passengers and Freight Global Accessibility

- Passengers and Freight accessibility are expected to increase below EU average
- Passengers accessibility is expected to increase over EU average
- Freight accessibility is expected to increase over EU average
- Passengers and Freight accessibility are expected to increase over EU average
- No data (ESPON space)
- No data (No ESPON space)

Global accessibility will increase around transport nodes: intercontinental airports and freight ports.

European Accessibility 2010 - 2030 (Baseline)

Measured as change in accessible population weighed by shortest access time



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Regional level: NUTS2
Source: MCRIT, 2013
Origin of data: MCRIT
© EuroGeographics Association for administrative boundaries

Absolute variation in accessibility 2010-2030 (Units: Millions Equivalent population)

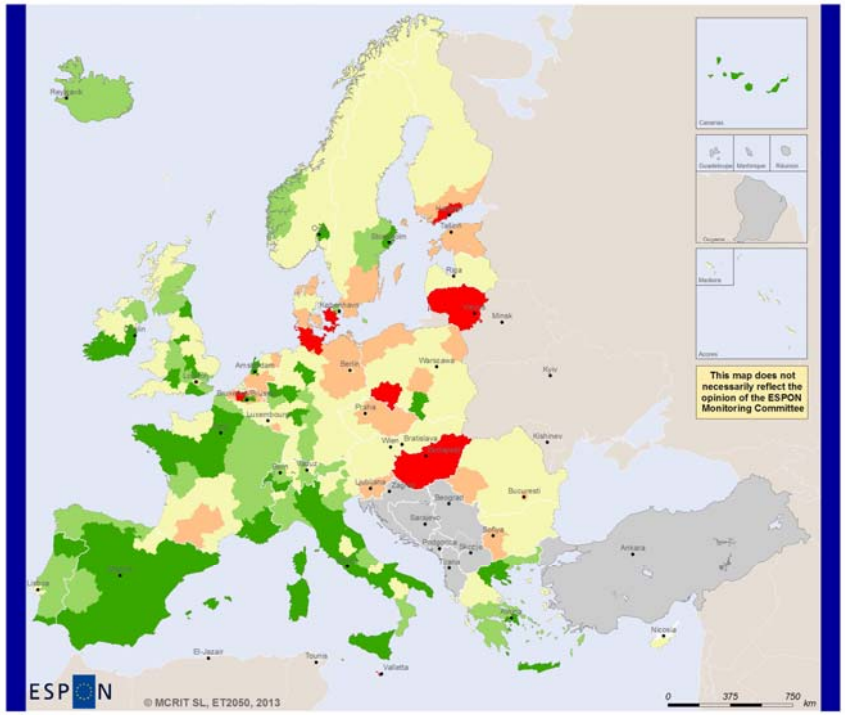
- < - 0
- 1 - 5
- 5 - 25
- 25 - 50
- > 50
- No data (ESPON space)
- No data (No ESPON space)

Accessibility changes are very much influenced by population changes, because of the relative homogeneous transport endowment across Europe, and despite the relatively higher investments on infrastructure planned in Eastern European regions.
The accessibility in each NUTS3 is measured as the sum of the population of all other NUTS3 weighed by the shortest multimodal access time. NUTS3 population is attached to the capital city. Population in 2030 by MULTIPOLES-MASST models and shortest multimodal access by MOSAIC model.

Baseline 2030: CO2 emissions

CO2 Transport Emissions 2010 - 2030 (Baseline)

Measured as saving potential emissions due to transport



CO2 Transport emissions (Units: Millions of CO2 tonnes saved)

Results obtained by MOSAIC Model

- < - 100
- -100 - -50
- -50 - 0
- 0 - 50
- > 50
- No data (ESPON space)
- No data (No ESPON space)

Reduction of 16% of Transport CO2 emissions. The combined impact of economic crisis with reduced GDP growth, and the use of more environmentally friendly energy sources leads to a net reduction of CO2 emissions specially in more industrialised and populated regions.

Results are based on assumptions based on transport traffics forecasted by MOSAIC as well as in other economic sectors.

ESPON

European Territorial Scenarios 2050

Exploratory Scenarios 2030

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According to Project Specifications:

This scenario provides an image of the European territory in which economic and population growth as well as public investments are mainly stimulated to take place within main corridors. **Europe of the Flows is characterised by strong connections between cities and transport nodes that structure the European territory**. Political focus lies on issues such as enhancing connections and long distance networks and global integration

SPSP / Infographic Group United Kingdom view by Alessandro Augiri

Flows

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According to Project Specifications:

This scenario provides an image of the European territory in which economic and population growth as well as public investments are mainly stimulated to take place within existing cities; cities that have a role as driving forces in the global, national and/or regional level. **Europe of the Cities is characterised by economically strong and compact cities that structure the European territory.** Political focus lies on issues such as intensified use of urban space, strong preservation of open space, reduction of long-distance traffic

SPSP / Infographic Group Netherlands // Paul van Hemert

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According to Project Specifications:

This scenario provides an image of the European territory in which economic and population growth as well as public investments mainly take place on the basis of specific regional identities and strengths. **Europe of the Regions is characterised by strong urban and rural territories that form a mosaic of different regions and types of territories with strong identities**. Political focus lies on issues such as regional self-reliance, small-scale development and landscape protection.

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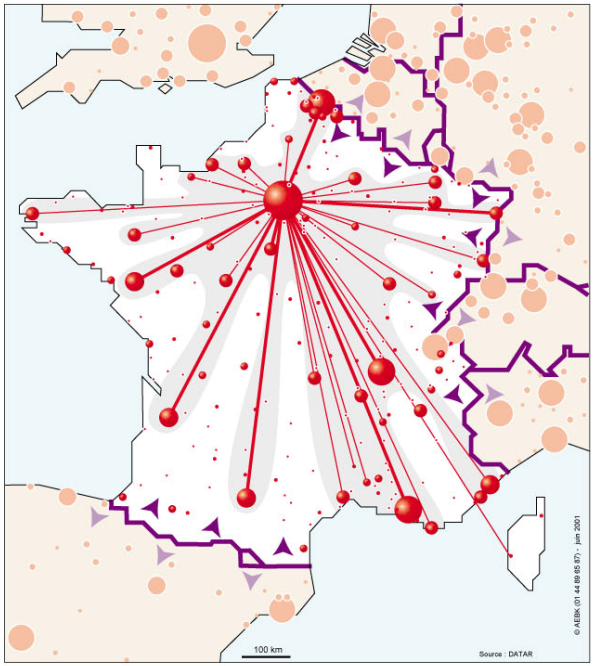
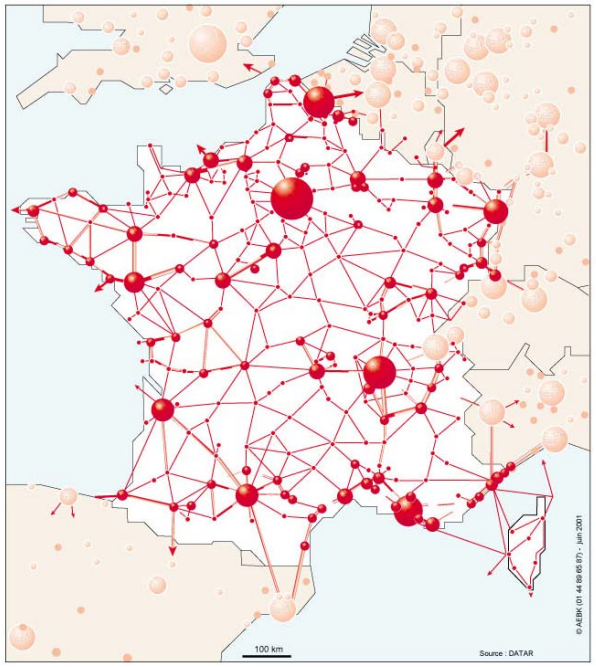
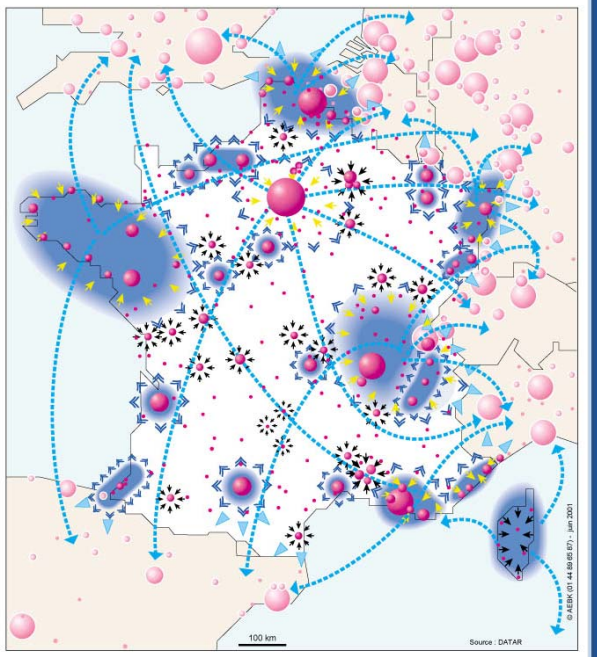
Scenarios France 2020 (DATAR, 2002)







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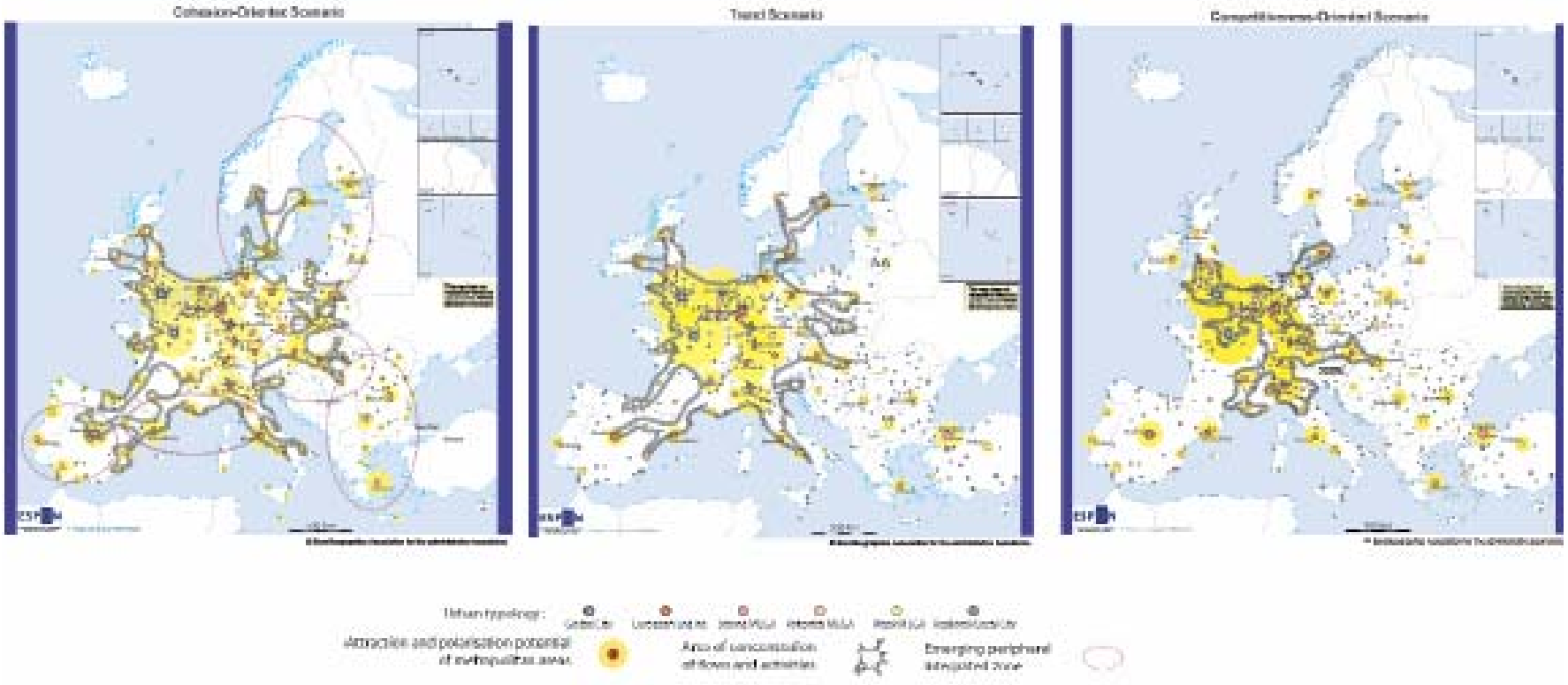
Scenarios for Europe ESPON 3.2 (2006)



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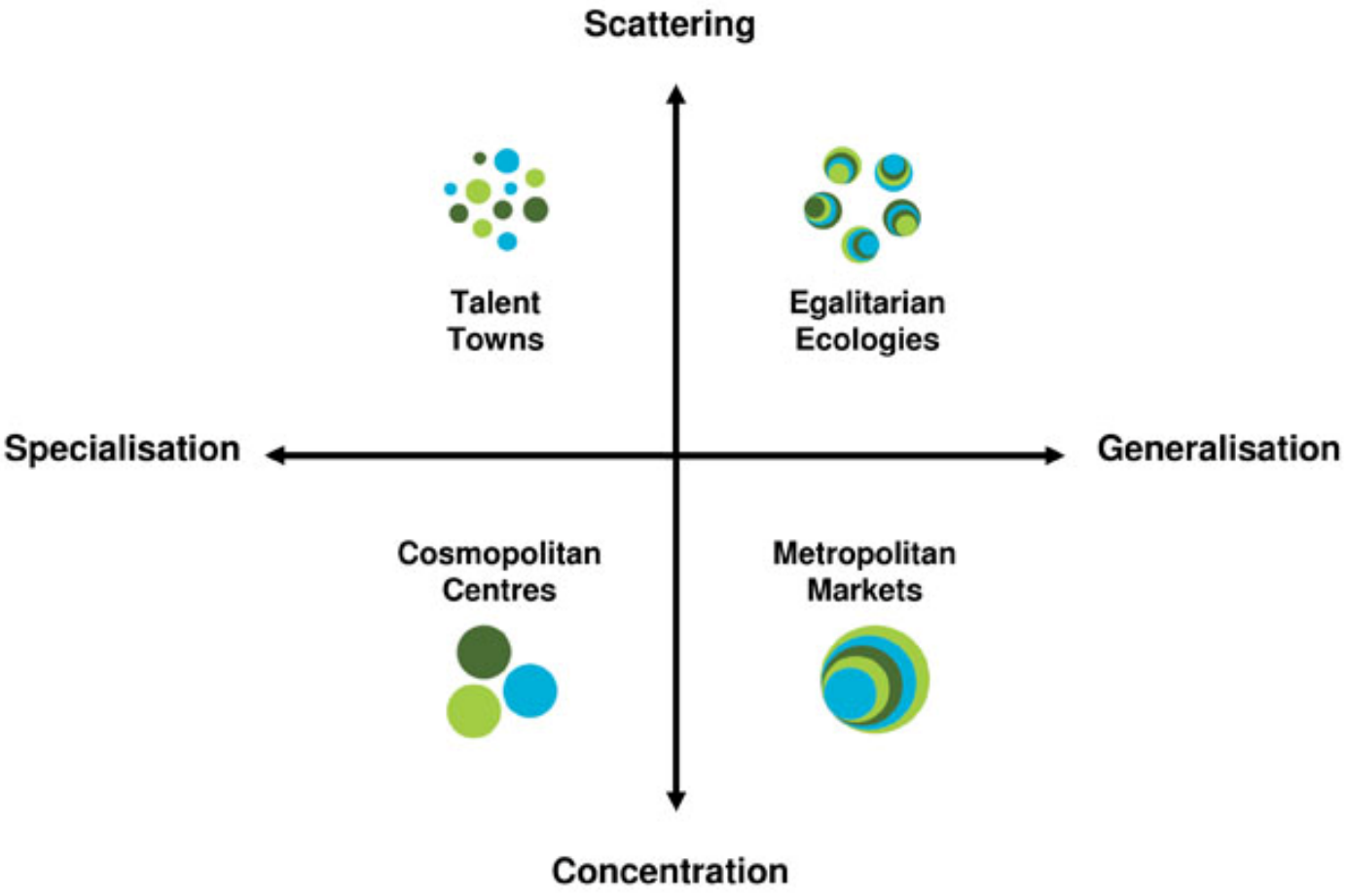
Scenarios Netherlands 2040 (SPB 2010)



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Scenario Study	Scenario Territorial Orientations			
ET2050 - Project Specifications	A Europe of Flows Promoting MEGAS	B Europe of Cities Promotion of Cities	C Europe of Regions Promotion of Regions	VISION
ET2050 - FIR	Global Flows	Creative Cities	Balanced Regions	VISION
ESPON 3.2	Pro-Competitivess		Pro-Cohesion	
Netherlands 2040	Talent Towns	Metropolitan markets	Egalitarian Ecologies	
France 2020	Archipelago exploded	Centralism renovated	Local differentiated	Networked polycentrism
Territoires 2040	Postpolisation	Hyperpolisation	Depolisation	Regiopolisation
PLUREL 2025	Fragmentation and High-tech		Self-reliance and Sustainability	

Scenarios 2030: Main Assumptions

	A Scenario (Promoting MEGAS)	B Scenario (Promoting Cities)	C Scenario (Promoting Regions)	BASELINE
Demographic Policies	Openness to migrants from outside Europe	Relative openness.	More strict immigration policies. Public support to natality and families.	Continuation of actual trends
Fertility	1,5 in 2030	1,66 in 2030	1,8 in 2030	1,66 in 2030
Mortality	For the initial 5-year period, between 2010 and 2015, mortality rates are assumed as the ones proposed by the "Limited Social Europe" (LSE) scenario for the 2015-2020 period (in the ESPON DEMIFER study). After 2015, life expectancy is linearly increased until the values of 85 years for men and 90 years for women in 2050.			
ExtraEU Migration	Total immigration increases at a rate of 3-7% every 5 years, substantially faster than in the Baseline	Total immigration increases at a rate of 2-4.3% every 5 years, still faster than in the Baseline.	Total immigration decreases at a rate of 2% every 5 years	Total immigration increases at a rate of 2% every 5 years, with the increase being delayed by 5 years in the most crises-hit countries (CY, GR, IT, ES, PT, IE)
IntraEU Migration between countries	Flows tend to move from all over in Europe towards largest metropolises integrated in the global economy (regions type A)	Flows tend to move from rural and sparsely populated areas towards other areas in Europe (regions type B)	Flow from rural and sparsely populated areas towards other areas significantly decreases (regions type C)	Emigrating rates are kept constant as in pre-crisis times for leading economies in Europe (based on MIMOSA and IMEM studies), and are significantly increased for least performing economies
Monetary policies	In Western European countries, stability of interest rates, ULC, exchange rates, inflation; Progressive convergence of Eastern EU towards Western European Countries values Decrease of interest on bonds: end of speculation periods			
Fiscal policies	Slow tendency towards stability pact: 60% of Debt/GDP. Decrease of public expenditure growth rate especially in vicious countries.	Debt/GDP remains constant	Slow divergence from stability pact. Slight increase of public expenditure growth rate	Increase of tax rates in the Western and Eastern Countries. Debt/GDP remains constant
Macro-economic framework	The crisis ends in 2015			

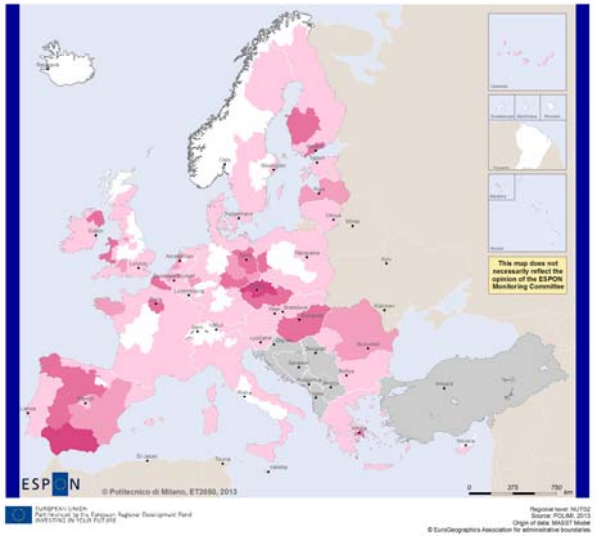
Scenarios 2030: Main Results Agregated

Transport Infrastructure Policies	€ 1.630 billion (2013-2030) in transport investment, 0.60% of EU GDP. 50% of transport budget in new infrastructure provision. Modal allocation of investment in TENs, substantially increased for air and ports, substantially decreased for rail Investments in long-distance infrastructure (mostly in regions type A) are 20% of total transport budget (€ 330 billion 2013-2030). *30% for short distance.*	€ 2.290 billion (2013-2030) in transport investment, 0.85% of EU GDP. 60% of transport budget in new infrastructure provision. Modal allocation of investment in TENs, increasingly rail based. Investments in long-distance infrastructure (mostly on regions type B) are 18% of total transport budget (€ 470 billion 2013-2030). *42% for short-distance.*	€ 1.790 billion (2013-2030) in transport investment, 0.67% of EU GDP. 45% of transport budget in new infrastructure provision, 25% allocated in TENs (€ 160 billion). Investments in short-distance infrastructure (mostly in regions type C) are 34% of total transport budget (€ 160 billion 2013-2030). *11% for long-distance.*	From 1.04% of EU GDP in transport investment to 0.73%. New transport provision from 70% to 53% of total transport investment. Network maintenance from 30% to 45%. Investments in long-distance infrastructure, from 28% (€ 610 billion 1995-2012) to 17% (€ 330 billion 2013-2030).
Transport Market Regulation Policies	0,07% of EU GDP yearly in smart ITS infrastructure equipment -10% vehicle emission factors respect to Baseline, due to environmental regulation Pricing in those motorways were there are no tolls today Increased efficiency of	0,02% of EU GDP yearly in smart ITS infrastructure equipment More 10% average rail speed due to enhanced management -10% vehicle emission factors respect to Baseline, due to environmental regulation High development of	0,04% of EU GDP yearly in smart ITS infrastructure equipment +5% average rail speed due to enhanced management - 5% average road speeds due to regulation -20% vehicle emission factors respect to Baseline, due to environmental	0,02% of EU GDP yearly in smart ITS infrastructure equipment Car emission factors in 2030 a 30% lower than in 2010, with development of new technologies and driven by Euro Standard regulations Fossil fuels remain important. Emissions reduced but targets are not

Scenarios 2030: Cohesion Policies

Cohesion funds expenditures in labour market 2030 (Scenario A)

Measured as millions of euros



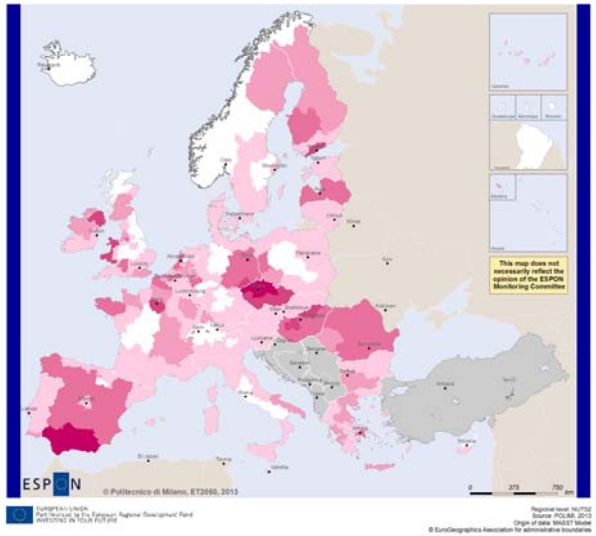
Cohesion funds expenditures in labour market (Units: M€)

Results obtained by MASST forecast model

- < 15
- 15 - 30
- 30 - 90
- 90 - 180
- No data (ESPON space)
- No data (No ESPON space)

Cohesion funds expenditures in labour market 2030 (Scenario B)

Measured as millions of euros



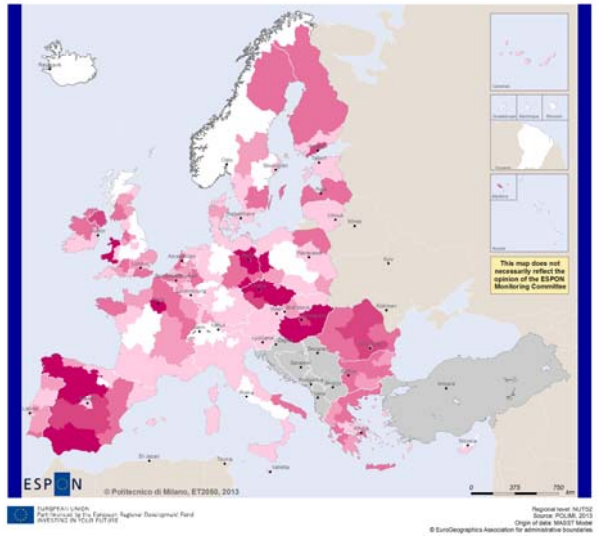
Cohesion funds expenditures in labour market (Units: M€)

Results obtained by MASST forecast model

- < 15
- 15 - 30
- 30 - 90
- 90 - 180
- > 180
- No data (ESPON space)
- No data (No ESPON space)

Cohesion funds expenditures in labour market 2030 (Scenario C)

Measured as millions of euros



Cohesion funds expenditures in labour market (Units: M€)

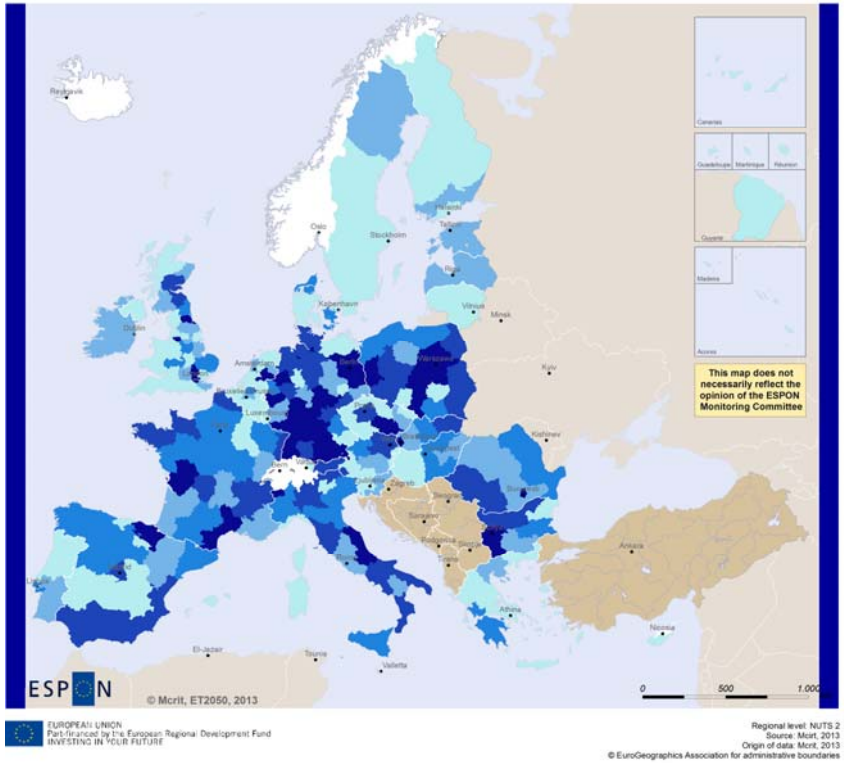
Results obtained by MASST forecast model

- < 15
- 15 - 30
- 30 - 90
- 90 - 180
- > 180
- No data (ESPON space)
- No data (No ESPON space)

Scenarios 2030: Transport Policies

European Transport Investments 2013 - 2030

Measured as Investment per area (millions €/km2)



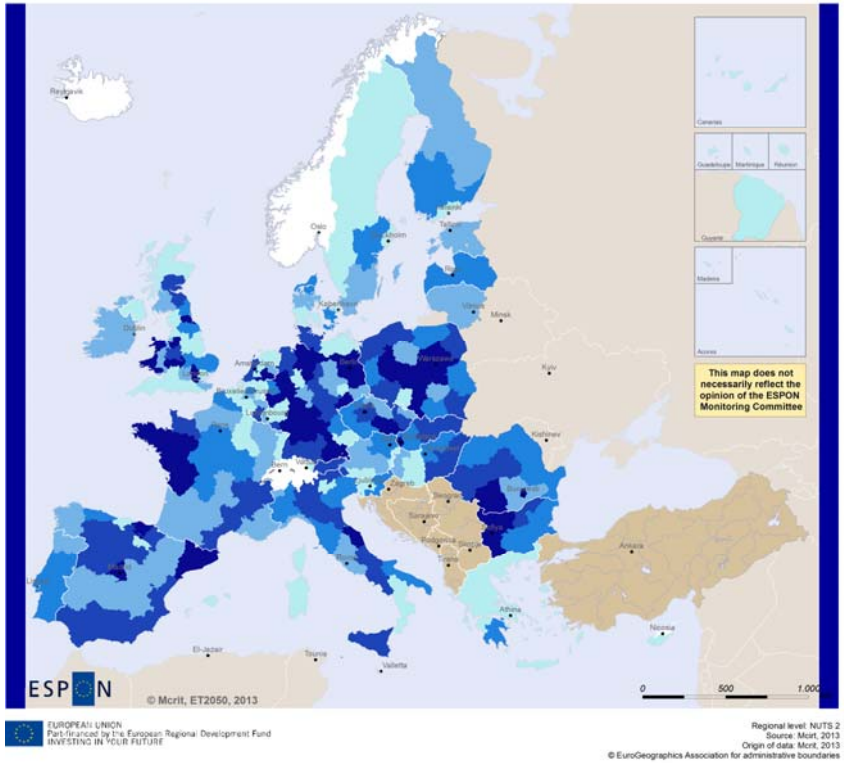
SCENARIO A 2030. Transport Investments in TENs (maintenance excluded)

Budget allocated to each NUTS2 represented in Million Euros per km2. Accumulated 2013-2030

- 0,00
- 0,01 - 0,05
- 0,06 - 0,09
- 0,10 - 0,19
- 0,20 - 4,57

European Transport Investments 2013 - 2030

Measured as Investment per area (millions €/km2)



BASELINE 2030. Transport Investments in TENs (maintenance excluded)

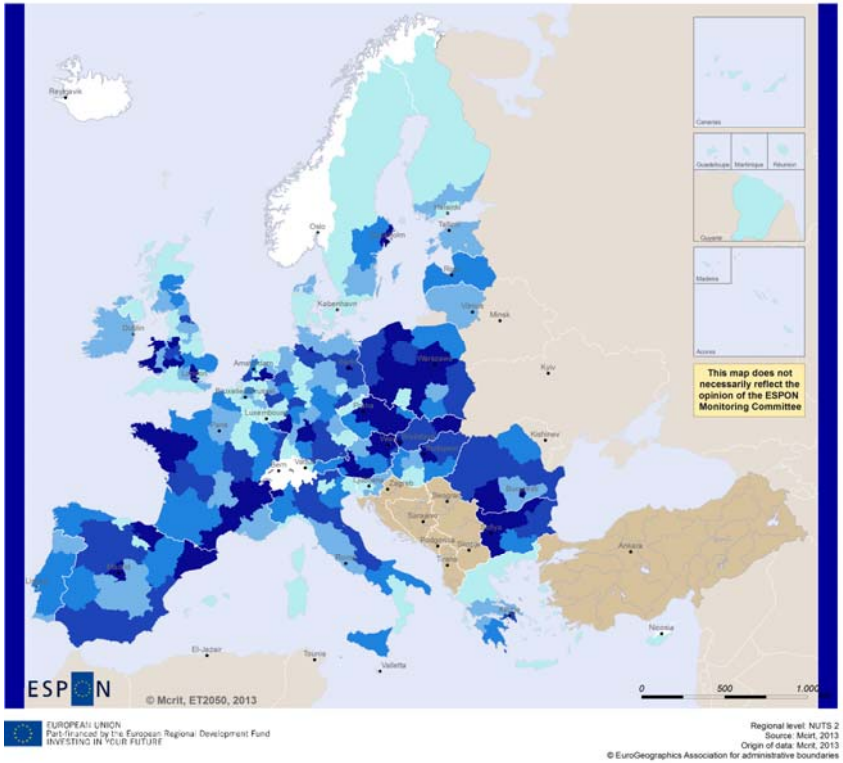
Budget allocated to each NUTS2 represented in Million Euros per km2. Accumulated 2013-2030

- 0,00
- 0,01 - 0,03
- 0,04 - 0,08
- 0,09 - 0,17
- 0,18 - 4,73

Scenarios 2030: Transport Policies

European Transport Investments 2013 - 2030

Measured as Investment per area (millions €/km2)



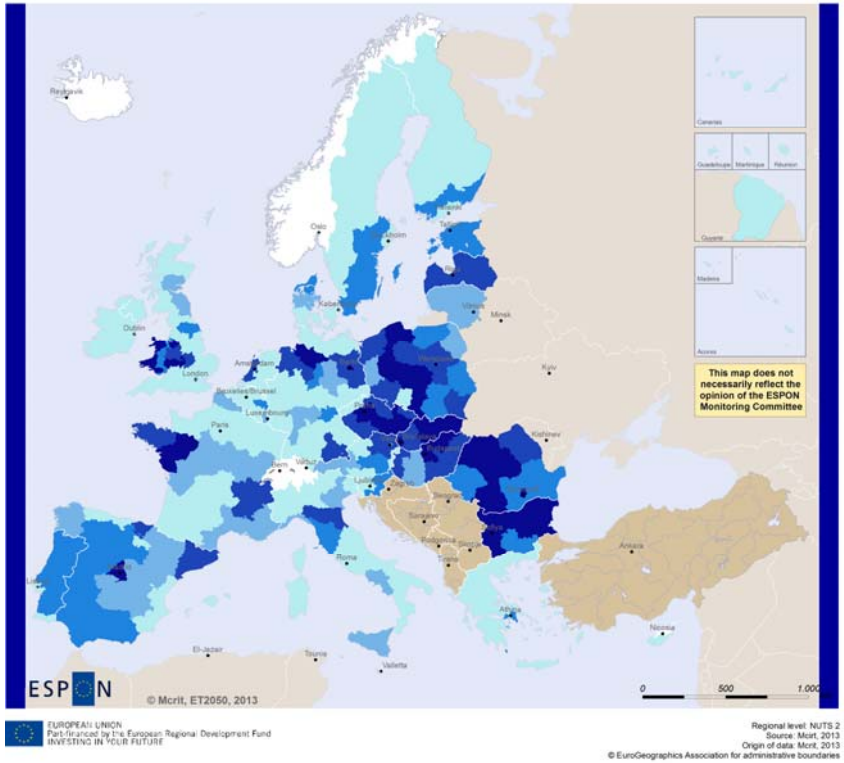
SCENARIO B 2030. Transport Investments in TENs (maintenance excluded)

Budget allocated to each NUTS2 represented in Million Euros per km2. Accumulated 2013-2030

- 0,00
- 0,01 - 0,05
- 0,06 - 0,11
- 0,12 - 0,21
- 0,22 - 6,17

European Transport Investments 2013 - 2030

Measured as Investment per area (millions €/km2)



SCENARIO C 2030. Transport Investments in TENs (maintenance excluded)

Budget allocated to each NUTS2 represented in Million Euros per km2. Accumulated 2013-2030

- 0,00
- 0,01 - 0,02
- 0,03 - 0,09
- 0,10 - 0,23
- 0,24 - 2,95

Scenarios 2030: Main Results Agregated

	A Scenario (Promoting MEGAS)	B Scenario (Promoting Cities)	C Scenario (Promoting Regions)	BASELINE
Total EU31 Population in 2030 (in millions; *514 million in 2010*)	527.7	530.8	531.6	530.2
Total Migrations 2010-2030 (cumulated number of migrants in millions)	39.6	38.8	37.2	37.9
Economic Growth (average yearly increase 2010-2030)	+2.22%	+2.31%	+1.82%	+1.89%
Regional Divergence (GINI coefficient in 2030; *26.1 in 2008*)	28.0	28.2	28.3	28.5
Total Employment (average yearly increase 2010-2030)	+1,92%	+1,96%	+1,55%	+1.59%
Manufacturing Employment (average yearly increase 2010-2030)	+2,12%	+1,66%	+1,08%	+1.38%
Service Employment (average yearly increase 2010-2030)	+1,86%	+2,04%	+1,67%	+1.63%
Total transport demand for passengers (total pax·km increase 2010-2030 in %)	+34.3%	+34.8%	+31.6%	+39.0%
Total travel cost (total euros increase 2010-2030 in %)	+29.7%	+34.9%	+29.0%	+39.3%
Total time spent travelling (total hours increase 2010-2030 in %)	+23.3%	+34.5%	+32.1%	+41.0%
Total CO2 due to transport (total tones increase 2010-2030 in %)	-40.3%	-58.4%	-35.4%	-25.2%
Total CO2 (total tones increase 2010-2030 in %)	N/A	N/A	N/A	-28.9%

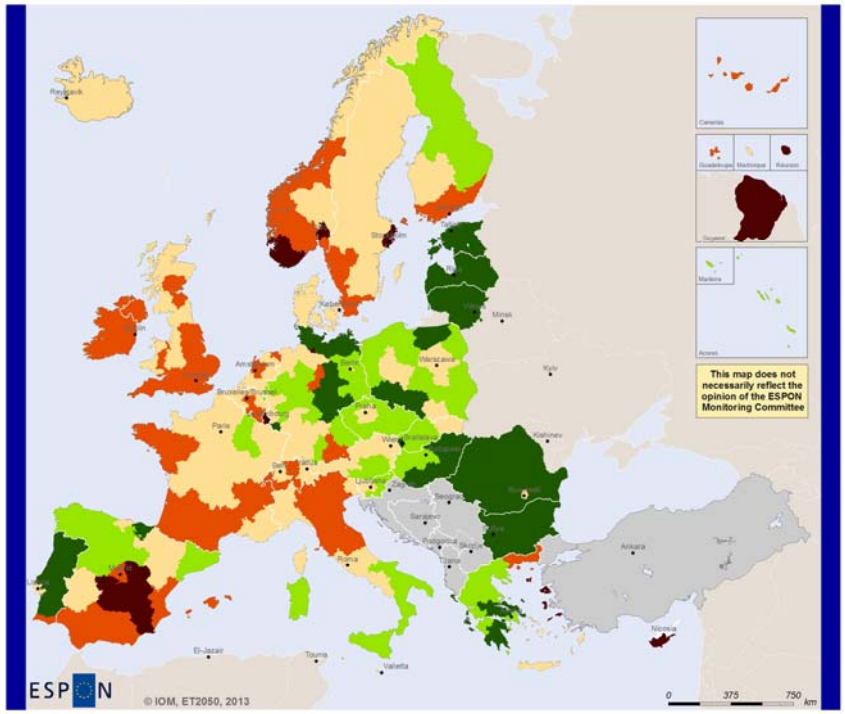
Scenarios 2030: Main Results Agregated

	A Scenario (Promoting MEGAS)	B Scenario (Promoting Cities)	C Scenario (Promoting Regions)	BASELINE
Population (total demographics)				
Society (inequities)				
Economy (economic performance)				
Technology (innovation)				
Energy (total consumption)				
Transport (total traffics)				
Land-Uses (artificial land occupation)				
Environment (climate change progression)				
Governance (participative governance)				

Scenarios 2030: Total Population

Total Population 2010 - 2030 (Baseline)

Measured as annual average population growth rate along the period



Population relative change (Units: %)

Results obtained by MULTIPOLES forecast model

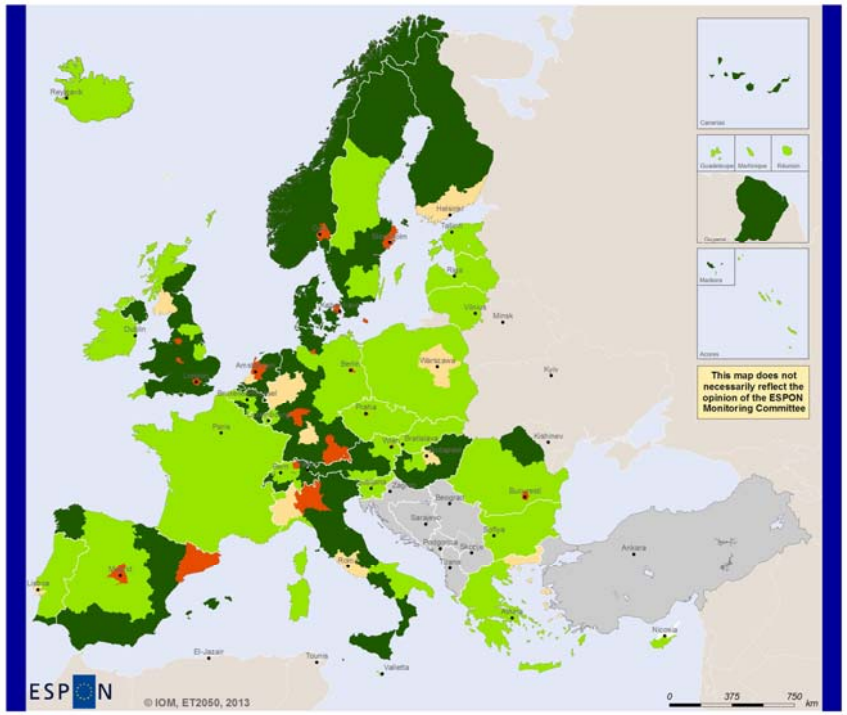
- < -0,5%
- -0,5% - 0%
- 0% - 0,5%
- 0,5% - 1%
- > 1%
- No data (ESPON space)
- No data (No ESPON space)

European population growth will tend towards stabilisation. Total population (ESPON Space) will grow from 514 million in 2010 to 530 million in 2030.

MULTIPOLES a cohort-component population dynamics model. It is used for the simulations of complex hierarchical multiregional, multi-country population systems; for analysing impact of various scenarios concerning migration, fertility, and mortality.

Total Population 2030 (Scenario A)

Measured as population relative difference respect to Baseline



Total Population 2030, relative change Population Scenario A / Population Baseline (Units: %)

Results obtained by MULTIPOLES forecast model

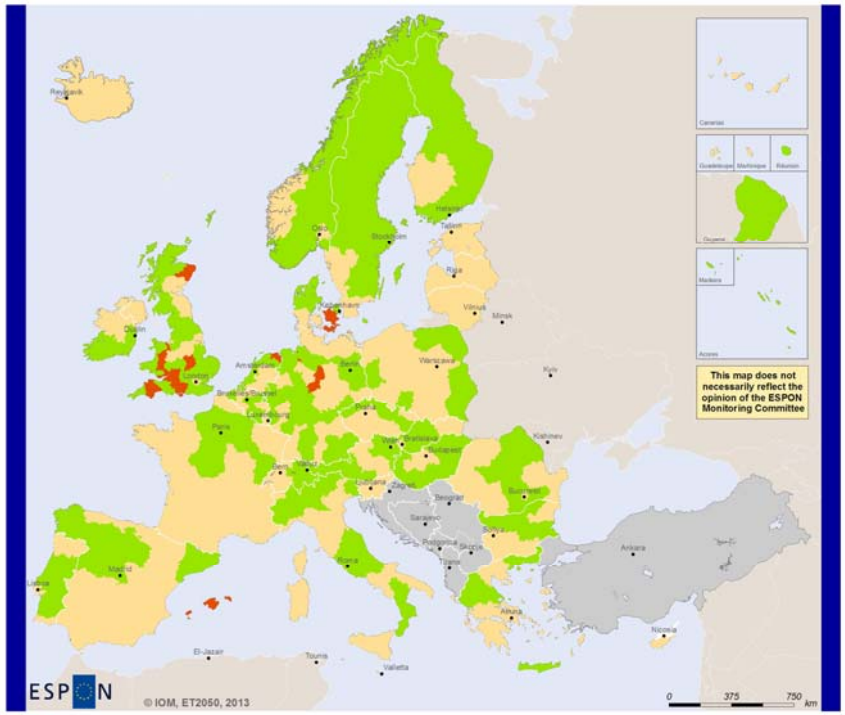
- < -2%
- -2% - 0%
- 0% - 2%
- > 2%
- No data (ESPON space)
- No data (No ESPON space)

MULTIPOLES a cohort-component population dynamics model. It is used for the simulations of complex hierarchical multiregional, multi-country population systems; for analysing impact of various scenarios concerning migration, fertility, and mortality.

Scenarios 2030: Total Population

Total Population 2030 (Scenario B)

Measured as population relative difference respect to Baseline



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Total Population 2030, relative change Population Scenario B/ Population Baseline (Units: %)

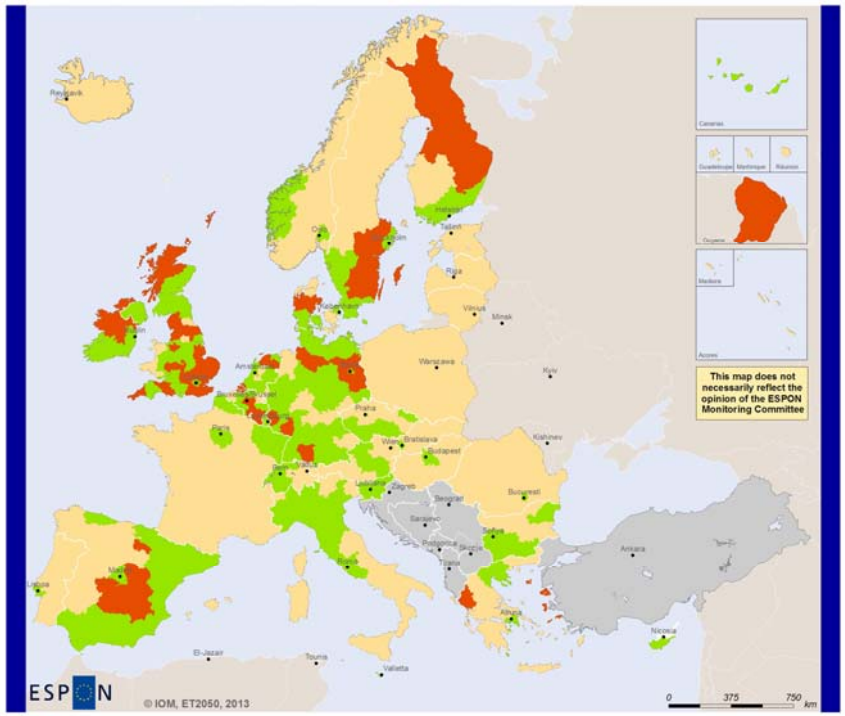
Results obtained by MULTIPOLES forecast model

- < 0%
- 0% - 2%
- > 2%
- No data (ESPON space)
- No data (No ESPON space)

MULTIPOLES a cohort-component population dynamics model. It is used for the simulations of complex hierarchical multiregional, multi-country population systems; for analysing impact of various scenarios concerning migration, fertility, and mortality.

Total Population 2030 (Scenario C)

Measured as population relative difference respect to Baseline



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Regional level: NUTS2
Source: IOM, 2013
Origin of data: MULTIPOLES Model
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Total Population 2030, relative change Population Scenario C / Population Baseline (Units: %)

Results obtained by MULTIPOLES forecast model

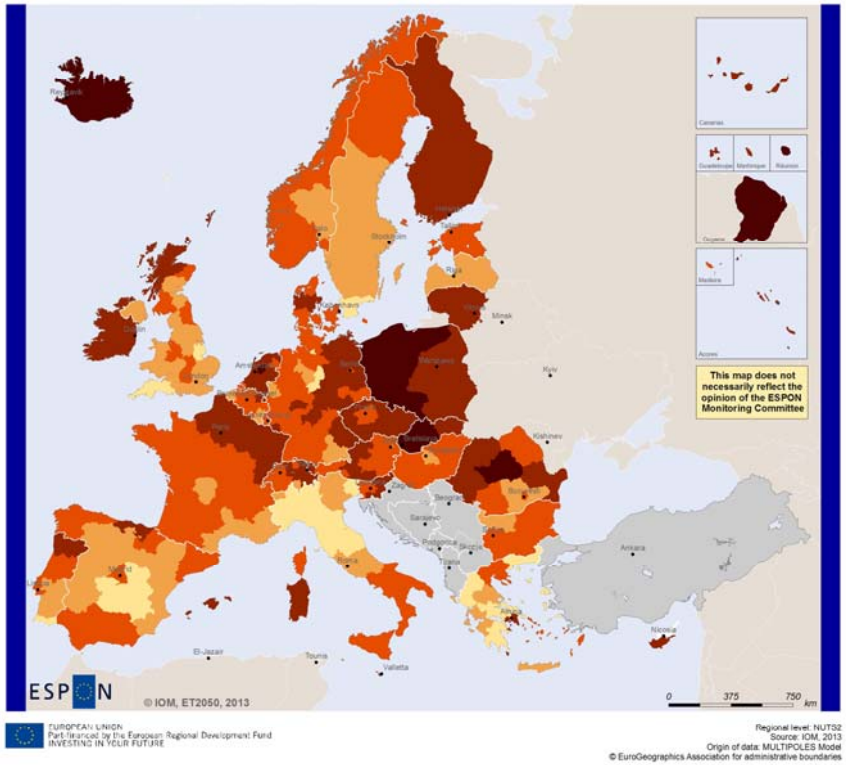
- < -2%
- -2% - 0%
- 0% - 2%
- > 2%
- No data (ESPON space)
- No data (No ESPON space)

MULTIPOLES a cohort-component population dynamics model. It is used for the simulations of complex hierarchical multiregional, multi-country population systems; for analysing impact of various scenarios concerning migration, fertility, and mortality.

Scenarios 2030: Aging

Ageing 2010 - 2030 (Baseline)

Measured as annual ageing increase rate



Old-Age Dependency Rate 2010 - 2030 increase (Units: %)

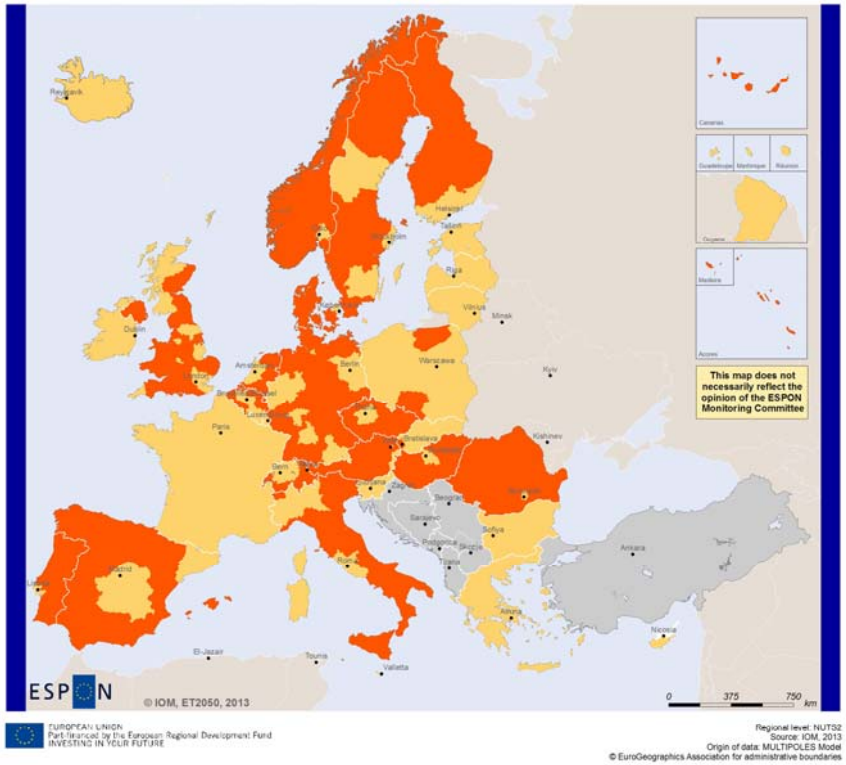
Results obtained by MULTIPOLES forecast model

- < 1%
- 1% - 2%
- 2% - 2.5%
- 2.5 - 3%
- > 3%
- No data (ESPON space)
- No data (No ESPON space)

Ageing grows fast across Europe. Percentage of population older than 65 years increases in Europe from 25% to 40% (210M of elderly).
MULTIPOLES a cohort-component population dynamics model that considers population age groups in 5 years, also for migrants.
The Old-Age Dependency Rate is measured:
ODR = Population > 64 / population 16 - 64.

Ageing 2010 - 2030 (Scenario A)

Measured as Old-Age Dependency Rate along the period respect to Baseline



Old-Age Dependency Rate 2030, relative change ODR Scenario A / ODR Baseline (Units: %)

Results obtained by MULTIPOLES forecast model

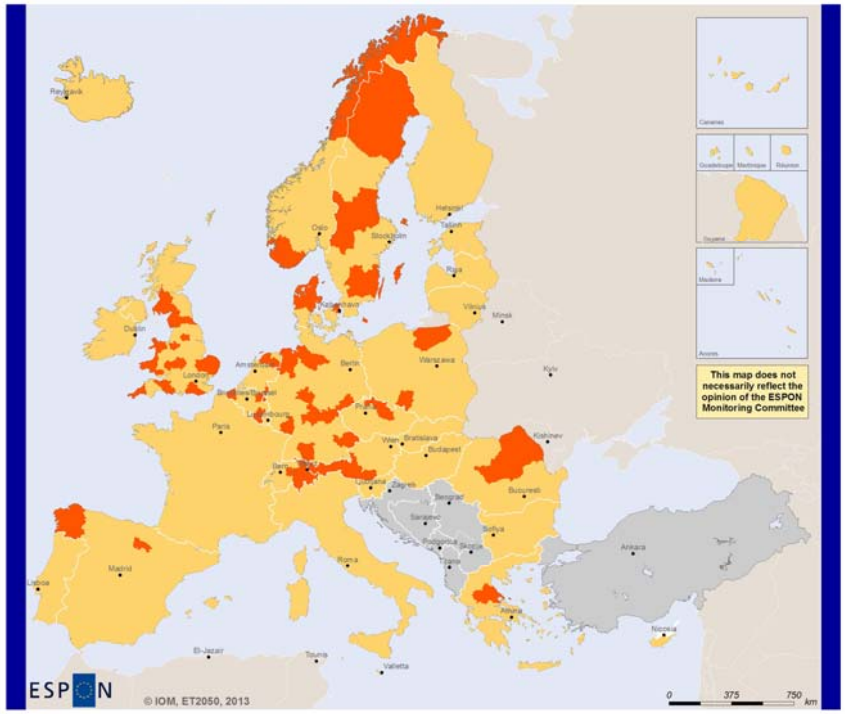
- 94% - 100%
- 100% - 103%
- No data (ESPON space)
- No data (No ESPON space)

MULTIPOLES a cohort-component population dynamics model that considers population age groups in 5 years, also for migrants.
The Old-Age Dependency Rate is measured:
ODR = Population > 64 / population 16 - 64.

Scenarios 2030: Ageing

Ageing 2030 (Scenario B)

Measured as Old-Age Dependency Rate along the period respect to Baseline



Old-Age Dependency Rate 2030, relative change ODR Scenario B / ODR Baseline (Units: %)

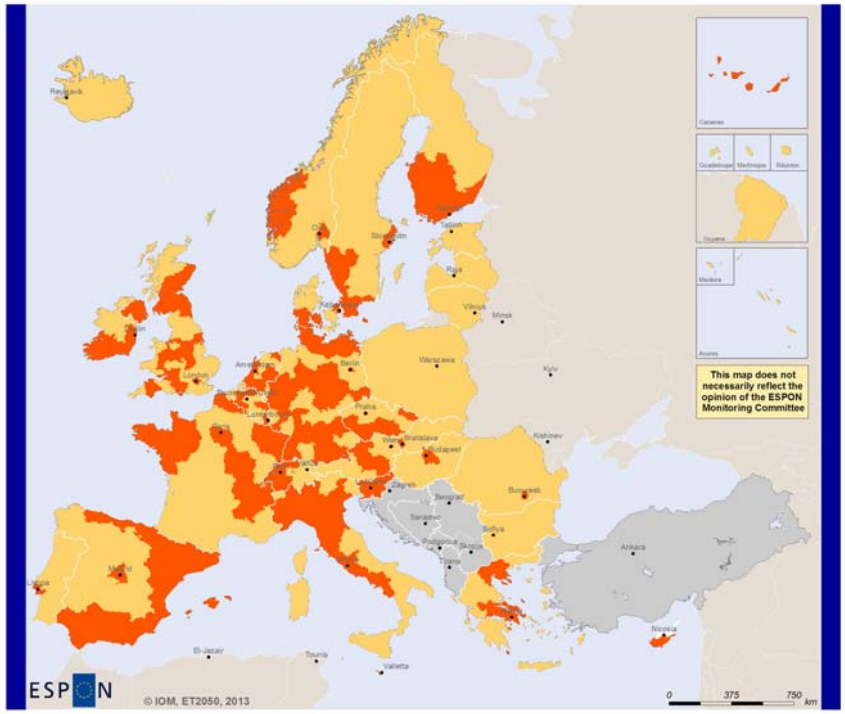
Results obtained by MULTIPOLES forecast model

- 98% - 100%
- 100% - 102%
- No data (ESPON space)
- No data (No ESPON space)

MULTIPOLES a cohort-component population dynamics model that considers population age groups in 5 years, also for migrants.
The Old-Age Dependency Rate is measured:
ODR = Population > 64 / population 16 - 64.

Ageing 2010 - 2030 (Scenario C)

Measured as Old-Age Dependency Rate along the period respect to Baseline



Old-Age Dependency Rate 2030, relative change ODR Scenario C / ODR Baseline (Units: %)

Results obtained by MULTIPOLES forecast model

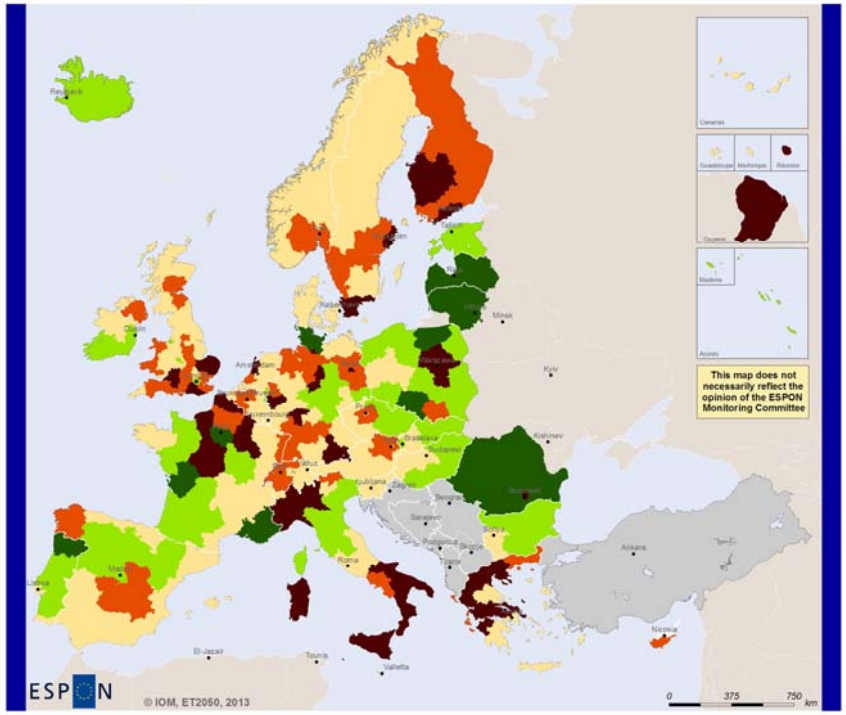
- 97% - 100%
- 100% - 103%
- No data (ESPON space)
- No data (No ESPON space)

MULTIPOLES a cohort-component population dynamics model that considers population age groups in 5 years, also for migrants.
The Old-Age Dependency Rate is measured:
ODR = Population > 64 / population 16 - 64.

Scenarios 2030: Net Migration

Net Migration 2010 - 2030 (Baseline)

Measured as annual net migration along the period



Annual Net Migration (Units: Persons)

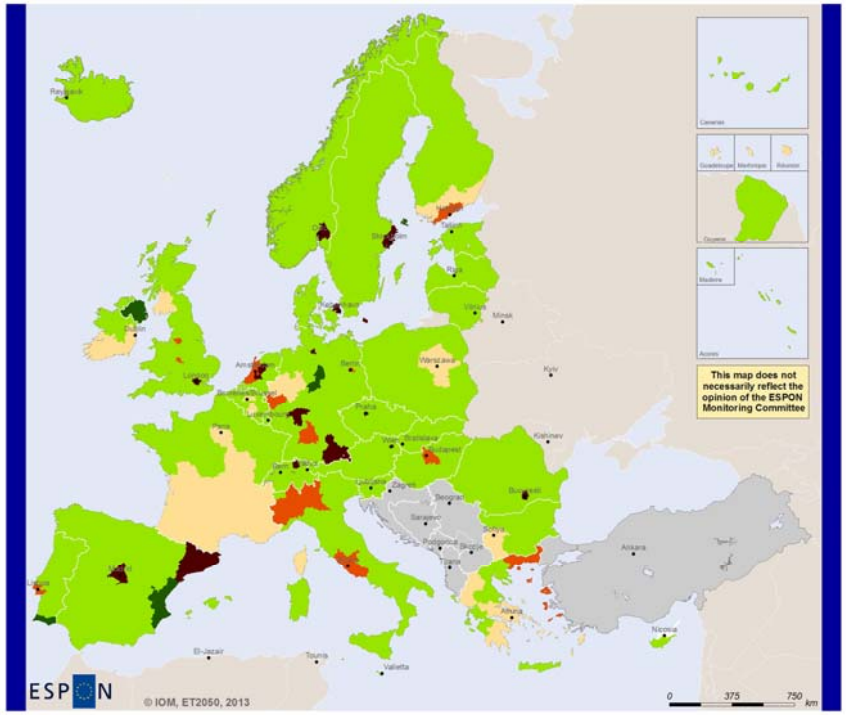
Results obtained by MULTIPOLES forecast model

- < -5000
- -5000 - 0
- 0 - 5000
- 5000 - 10000
- > 10000
- No data (ESPON space)
- No data (No ESPON space)

East-West migration increases, as well as from rural to large metropolitan regions. Total migration increases up to 20 millions.
MULTIPOLES a cohort-component population dynamics model projection of migration flows are based on labour markets assumptions. Residential tourism of Northern Europeans retirees, for instance, in Southern regions, is not considered

Migration 2010 - 2030 (Scenario A)

Measured as relative difference in total net migration respect to Baseline



Total Migration 2010 - 2030. (Migration Scenario A - Migration Baseline) / Pop2010 (Units: %)

Results obtained by MULTIPOLES forecast model

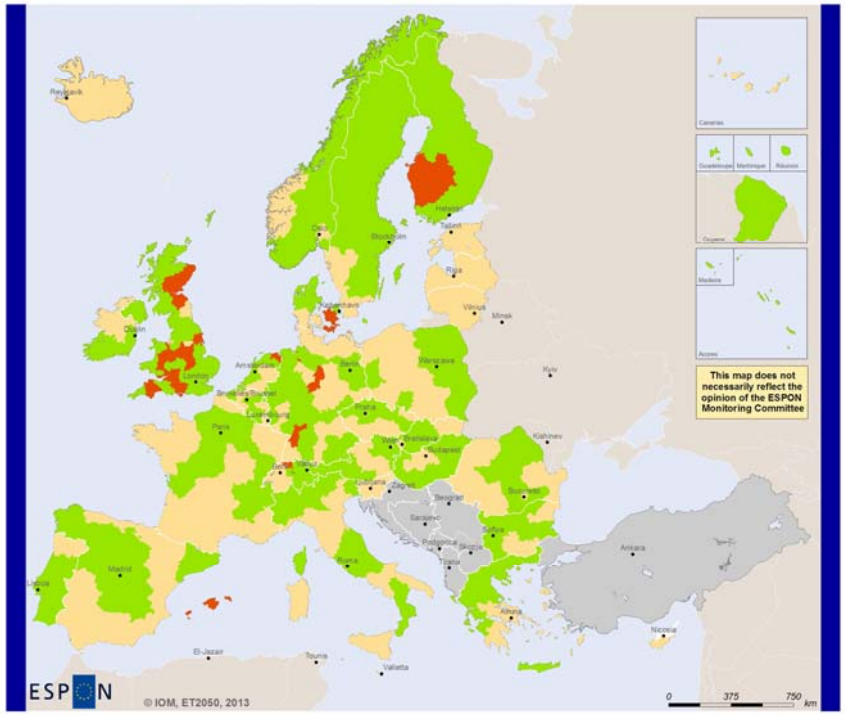
- < -1,5%
- -1,5% - 0%
- 0% - 1,5%
- 1,5% - 3%
- > 3%
- No data (ESPON space)
- No data (No ESPON space)

MULTIPOLES a cohort-component population dynamics model projection of migration flows are based on labour markets assumptions. Residential tourism of Northern Europeans retirees, for instance, in Southern regions, is not considered

Scenarios 2030: Net Migration

Total Migration 2010 - 2030 (Scenario B)

Measured as relative difference in total net migration respect to Baseline



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Total Migration 2010 - 2030. (Migration Scenario B - Migration Baseline) / Pop2010 (Units: %)

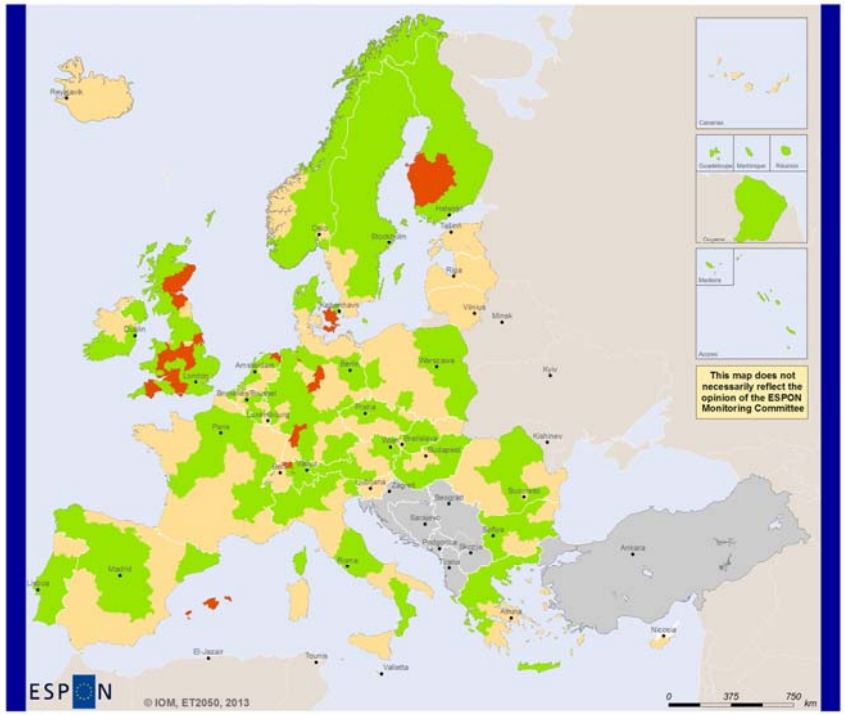
Results obtained by MULTIPOLES forecast model

- -1,5% - 0%
- 0% - 1,5%
- 1,5% - 3%
- No data (ESPON space)
- No data (No ESPON space)

MULTIPOLES a cohort-component population dynamics model projection of migration flows are based on labour markets assumptions. Residential tourism of Northern Europeans retirees, for instance, in Southern regions, is not considered

Total Migration 2010 - 2030 (Scenario B)

Measured as relative difference in total net migration respect to Baseline



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Regional level: NUTS2
Source: IOM, 2013
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Total Migration 2010 - 2030. (Migration Scenario B - Migration Baseline) / Pop2010 (Units: %)

Results obtained by MULTIPOLES forecast model

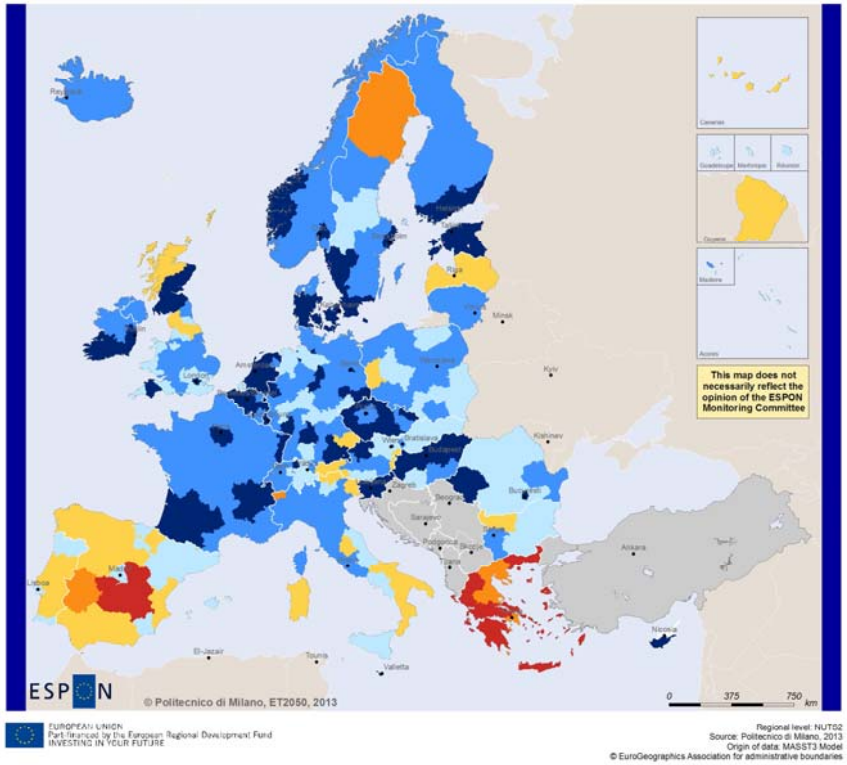
- -1,5% - 0%
- 0% - 1,5%
- 1,5% - 3%
- No data (ESPON space)
- No data (No ESPON space)

MULTIPOLES a cohort-component population dynamics model projection of migration flows are based on labour markets assumptions. Residential tourism of Northern Europeans retirees, for instance, in Southern regions, is not considered

Scenarios 2030: GDP Growth

GDP Growth 2010 - 2030 (Baseline)

Measured as annual average GDP growth rate along the period



GDP Growth annual average rate (Units: %)

Results obtained by MASST3 forecast model

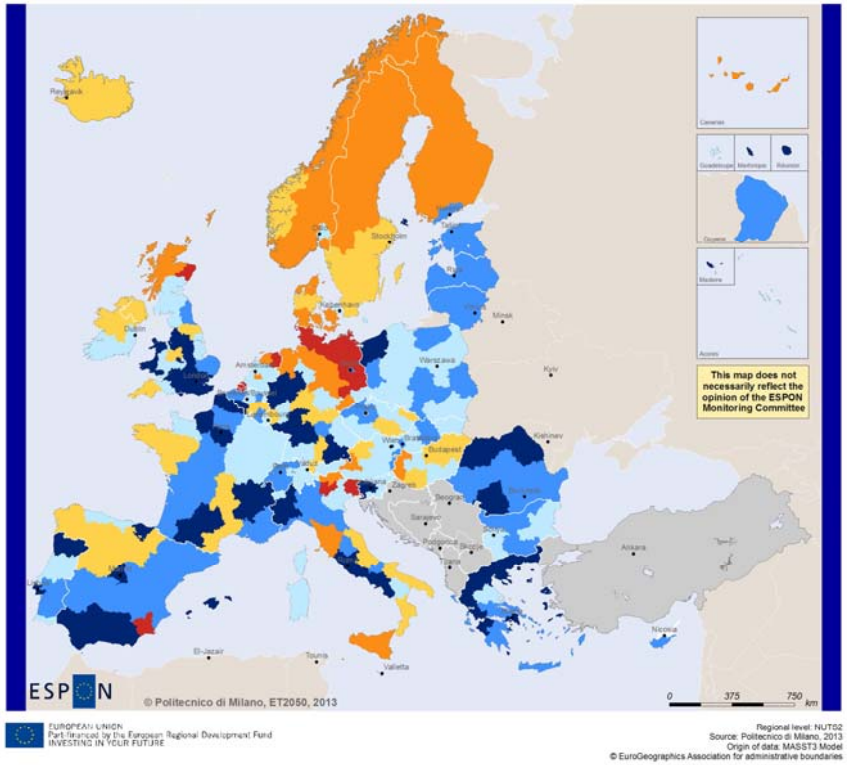
- < 0%
- 0% - 0,5%
- 0,5% - 1%
- 1% - 1,5%
- 1,5% - 2%
- > 2%
- No data (ESPON space)

Economic growth at very different speeds, leading to an increase in inter-regional economic disparities. Number of regions below to 1% of GDP growth: 45 (16%). ESPON Space annual average GDP growth rate:1.89%

MASST3 is an econometric, macroeconomic, sectoral, social and territorial model. It has been upgraded to explicitly take into account the impact of the current economic crisis.

GDP Growth 2030 (Scenario A)

Measured as relative difference in average GDP growth rate respect to Baseline



GDP Growth 2030, relative change GDP Scenario A - GDP Scenario Baseline (Units: %)

Results obtained by MASST3 forecast model

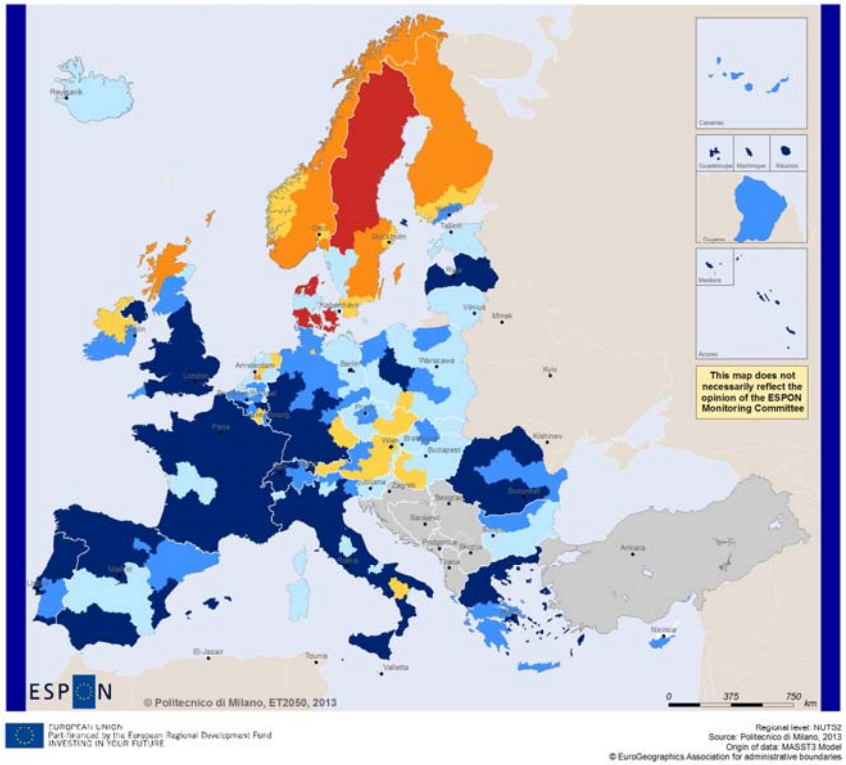
- < 0%
- 0% - 0,1%
- 0,1% - 0,2%
- 0,2% - 0,3%
- 0,3% - 0,4%
- > 0,4%
- No data (ESPON space)

MASST3 is an econometric, macroeconomic, sectoral, social and territorial model. It has been upgraded to explicitly take into account the impact of the current economic crisis.

Scenarios 2030: GDP Growth

GDP Growth 2030 (Scenario B)

Measured as relative difference in average GDP growth rate respect to Baseline



GDP Growth 2030, relative change GDP Scenario B - GDP Scenario Baseline (Units: %)

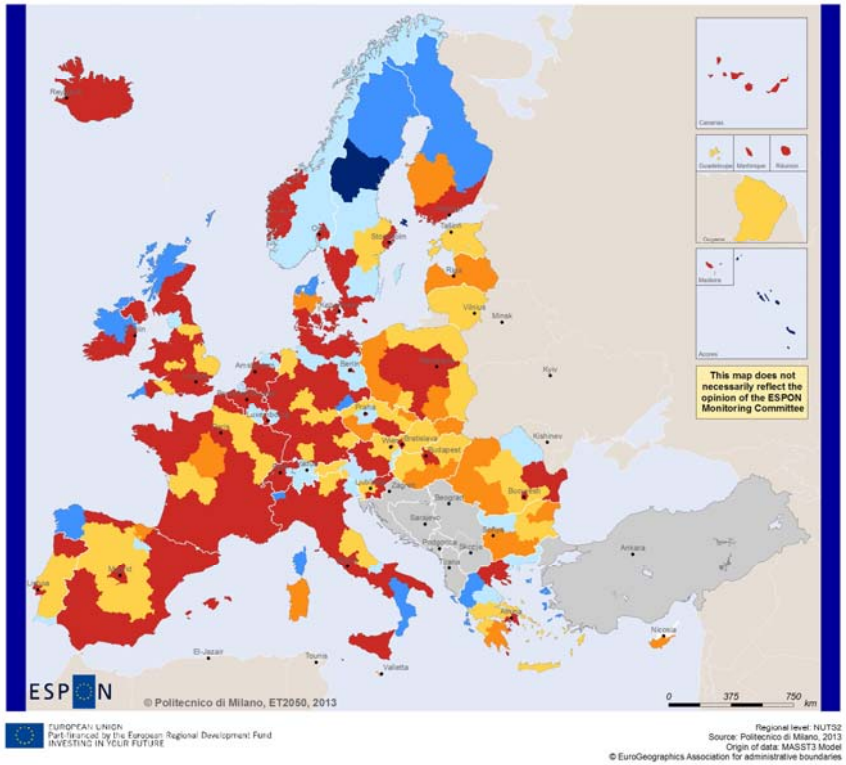
Results obtained by MASST3 forecast model

- < 0%
- 0% - 0,1%
- 0,1% - 0,2%
- 0,2% - 0,3%
- 0,3% - 0,4%
- > 0,4%
- No data (ESPON space)

MASST3 is an econometric, macroeconomic, sectoral, social and territorial model. It has been upgraded to explicitly take into account the impact of the current economic crisis.

GDP Growth 2030 (Scenario C)

Measured as relative difference in average GDP growth rate respect to Baseline



GDP Growth 2030, relative change GDP Scenario C - GDP Scenario Baseline (Units: %)

Results obtained by MASST3 forecast model

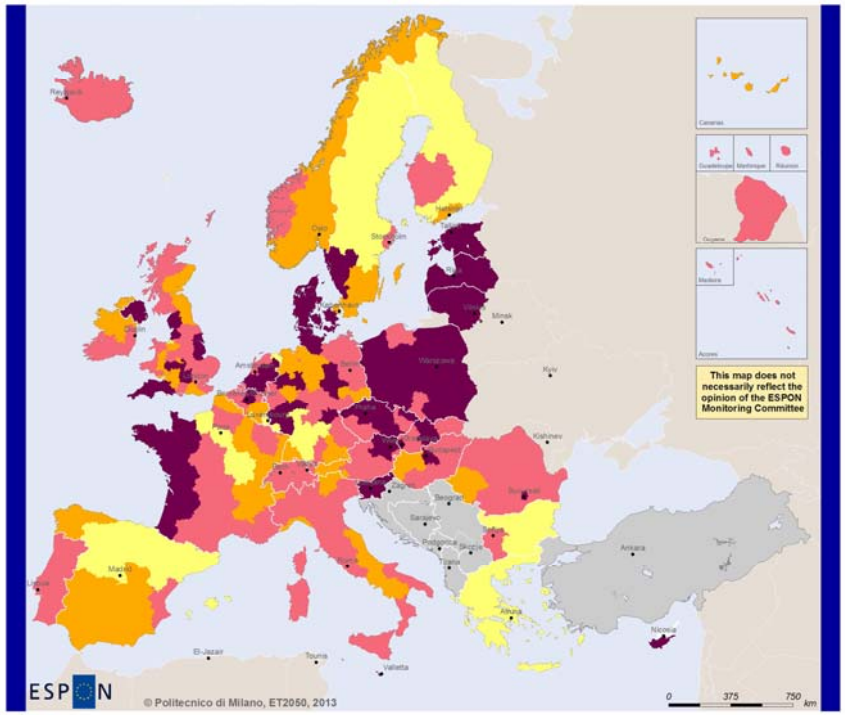
- < 0%
- 0%- 0,1%
- 0,1% - 0,2%
- 0,2% - 0,3%
- 0,3% - 0,4%
- > 0,4
- No data (ESPON space)

MASST3 is an econometric, macroeconomic, sectoral, social and territorial model. It has been upgraded to explicitly take into account the impact of the current economic crisis.

Scenarios 2030: Employment

Employment 2010 - 2030 (Baseline)

Measured as annual average employment growth rate



Employment growth annual average rate (Units: %)

Results obtained by MASST3 forecast model

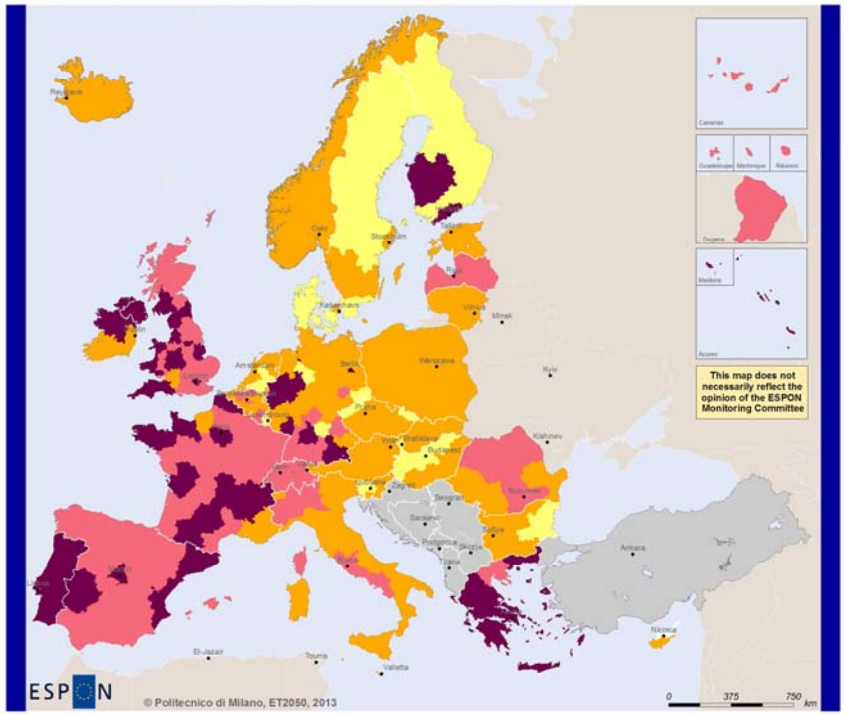
- < 1%
- 1% - 1,5%
- 1,5% - 2%
- > 2%
- No data (ESPON space)
- No data (No ESPON space)

Employment grows at a sustained rate in Europe, meaning that large part of the recovery from the crisis comes from job creation and lower salaries, instead of productivity gains. (ESPON Space annual average employment growth rate 1.59%)

MASST3 is an econometric, macroeconomic, sectoral, social and territorial model. It has been upgraded to explicitly take into account the impact of the current economic crisis.

Employment 2030 (Scenario A)

Measured as relative difference on average employment growth rate



Employment 2030: Scenario A Annual Growth - Baseline Annual Growth (Units: %)

Results obtained by MASST3 forecast model

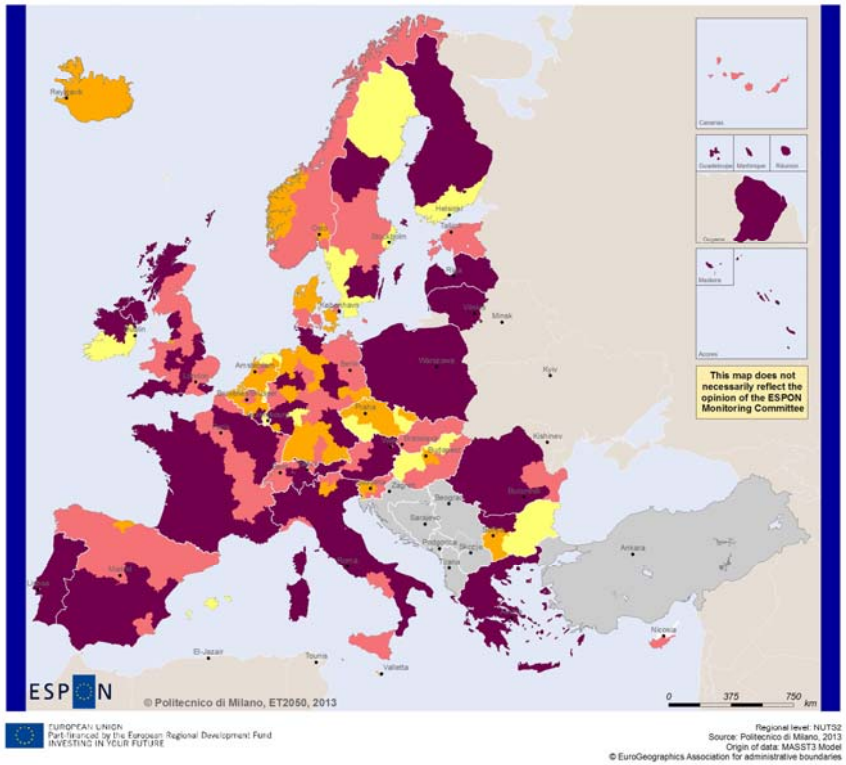
- < 0,2%
- 0,2% - 0,3%
- 0,3% - 0,4%
- > 0,4%
- No data (ESPON space)
- No data (No ESPON space)

MASST3 is an econometric, macroeconomic, sectoral, social and territorial model. It has been upgraded to explicitly take into account the impact of the current economic crisis.

Scenarios 2030: Employment

Employment 2030 (Scenario B)

Measured as relative difference on average employment growth rate



Employment 2030: Scenario B Annual Growth - Baseline Annual Growth (Units: %)

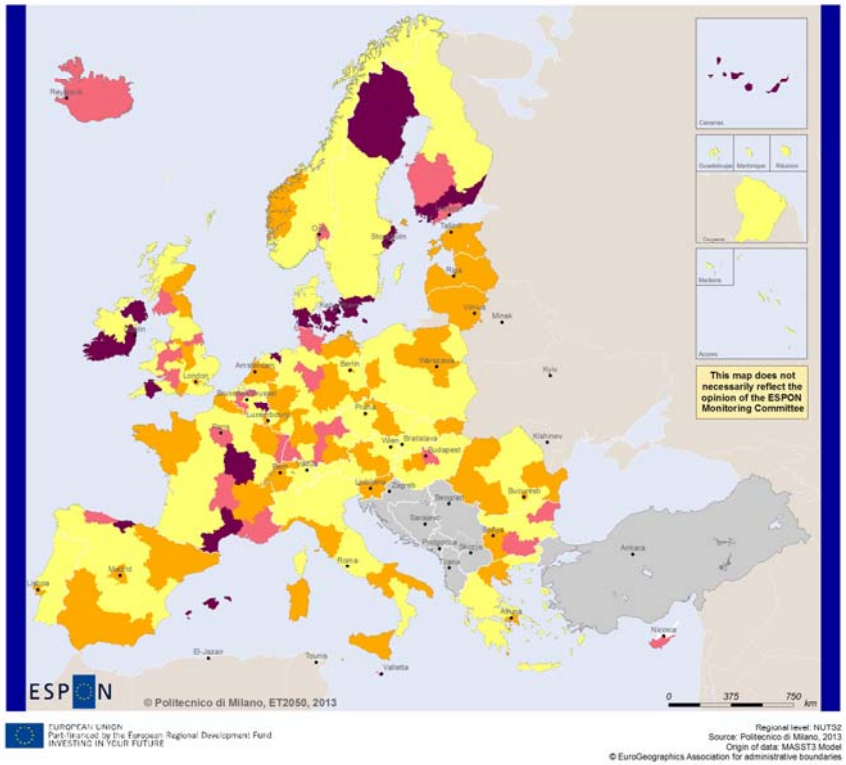
Results obtained by MASST3 forecast model

- < 0,2%
- 0,2% - 0,3%
- 0,3% - 0,4%
- > 0,4%
- No data (ESPON space)
- No data (No ESPON space)

MASST3 is an econometric, macroeconomic, sectoral, social and territorial model. It has been upgraded to explicitly take into account the impact of the current economic crisis.

Employment 2030 (Scenario C)

Measured as relative difference on average employment growth rate



Employment 2030: Scenario C Annual Growth - Baseline Annual Growth (Units: %)

Results obtained by MASST3 forecast model

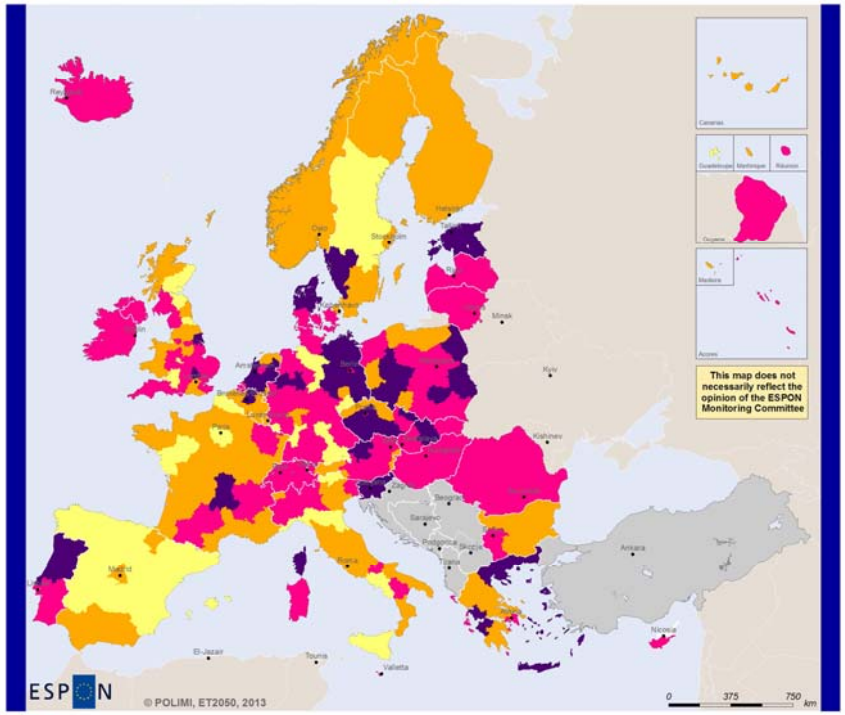
- < 0%
- 0% - 0,1%
- 0,1% - 0,2%
- > 0,2%
- No data (ESPON space)
- No data (No ESPON space)

MASST3 is an econometric, macroeconomic, sectoral, social and territorial model. It has been upgraded to explicitly take into account the impact of the current economic crisis.

Scenarios 2030: Employment in Manufacturing

Service and manufacturing employment 2010 - 2030 (Baseline)

Measured as annual average employment growth rate related to EU average growth rate



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Regional level: NUTS2
Source: POLIMI, 2013
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Service and manufacturing employment growth

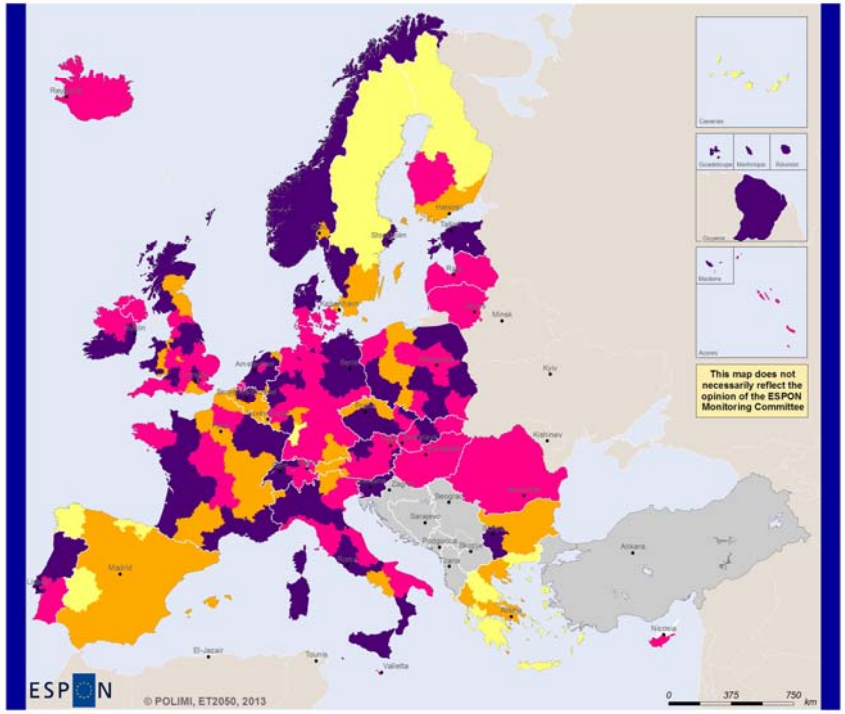
Results obtained by MASST3 forecast model

- Both rates below to EU average
- Manufacturing employment growth rate over to EU average
- Service employment growth rate over to EU average
- Both rates over to EU average
- No data (ESPON space)
- No data (No ESPON space)

Manufacturing employment grows at similar rates that services, in a reindustrialisation process. (ESPON space annual average of manufacturing employment growth is 1.49% and annual average of services employment growth is 1.69%).
MASST3 is an econometric, macroeconomic, sectoral, social and territorial model. It has been upgraded to explicitly take into account the impact of the current economic crisis.

Service and manufacturing employment 2010 - 2030 (Scenario A)

Measured as annual average employment growth rate related to EU average growth rate



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Regional level: NUTS2
Source: POLIMI, 2013
Origin of data: MASST3 Model
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Service and manufacturing employment growth

Results obtained by MASST3 forecast model

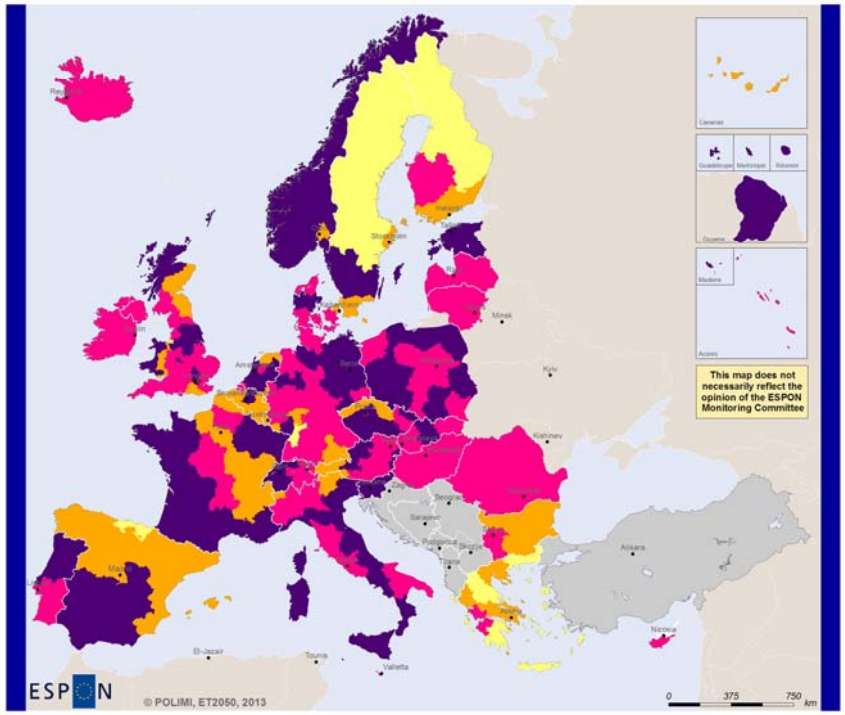
- Both rates below to EU average
- Manufacturing employment growth rate over to EU average
- Service employment growth rate over to EU average
- Both rates over to EU average
- No data (ESPON space)
- No data (No ESPON space)

MASST3 is an econometric, macroeconomic, sectoral, social and territorial model. It has been upgraded to explicitly take into account the impact of the current economic crisis.

Scenarios 2030: Employment in Manufacturing

Service and manufacturing employment 2010 - 2030 (Scenario B)

Measured as annual average employment growth rate related to EU average growth rate



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Source: POLIMI, 2013
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Service and manufacturing employment growth

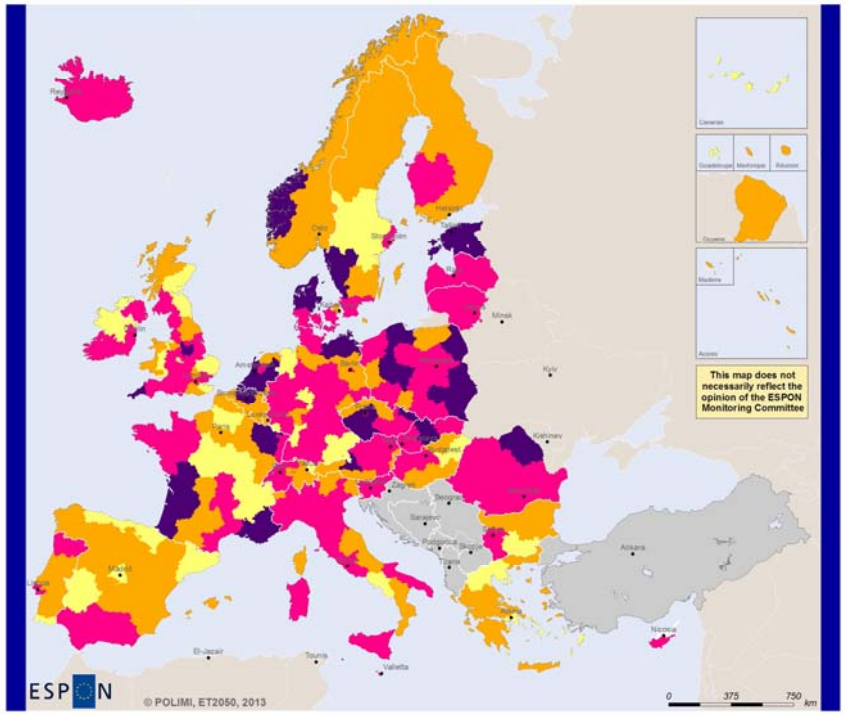
Results obtained by MASST3 forecast model

- Both rates below to EU average
- Manufacturing employment growth rate over to EU average
- Service employment growth rate over to EU average
- Both rates over to EU average
- No data (ESPON space)
- No data (No ESPON space)

MASST3 is an econometric, macroeconomic, sectoral, social and territorial model. It has been upgraded to explicitly take into account the impact of the current economic crisis.

Service and manufacturing employment 2010 - 2030 (Scenario C)

Measured as annual average employment growth rate related to EU average growth rate



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Regional level: NUTS2
Source: POLIMI, 2013
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Service and manufacturing employment growth

Results obtained by MASST3 forecast model

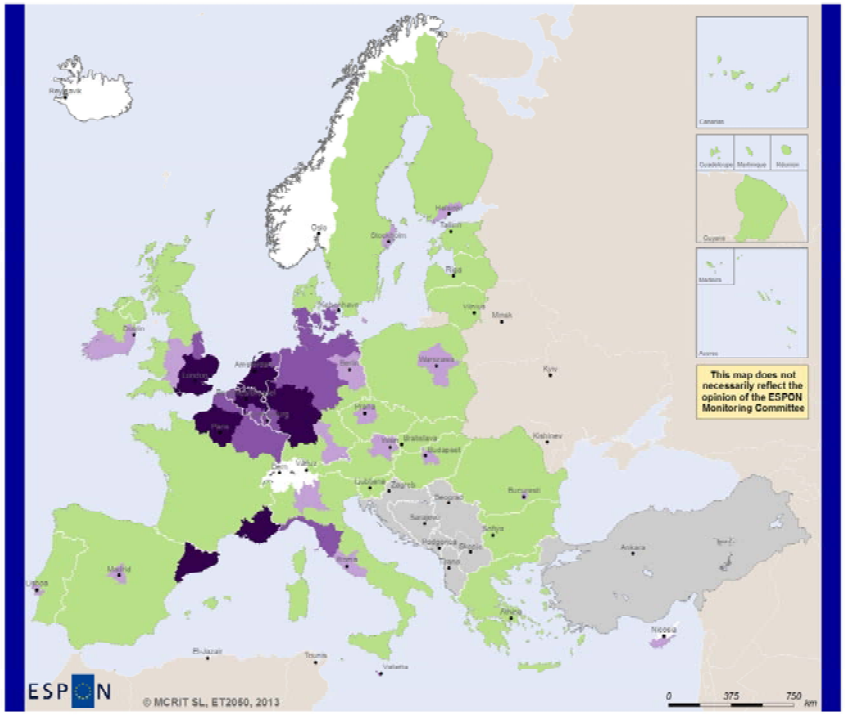
- Both rates below to EU average
- Manufacturing employment growth rate over to EU average
- Service employment growth rate over to EU average
- Both rates over to EU average
- No data (ESPON space)
- No data (No ESPON space)

MASST3 is an econometric, macroeconomic, sectoral, social and territorial model. It has been upgraded to explicitly take into account the impact of the current economic crisis.

Scenarios 2030: Global Accessibility

Global Accessibility 2010 - 2030 (Baseline)

Measured as potential intercontinental airplane seats and containers in relation EU average



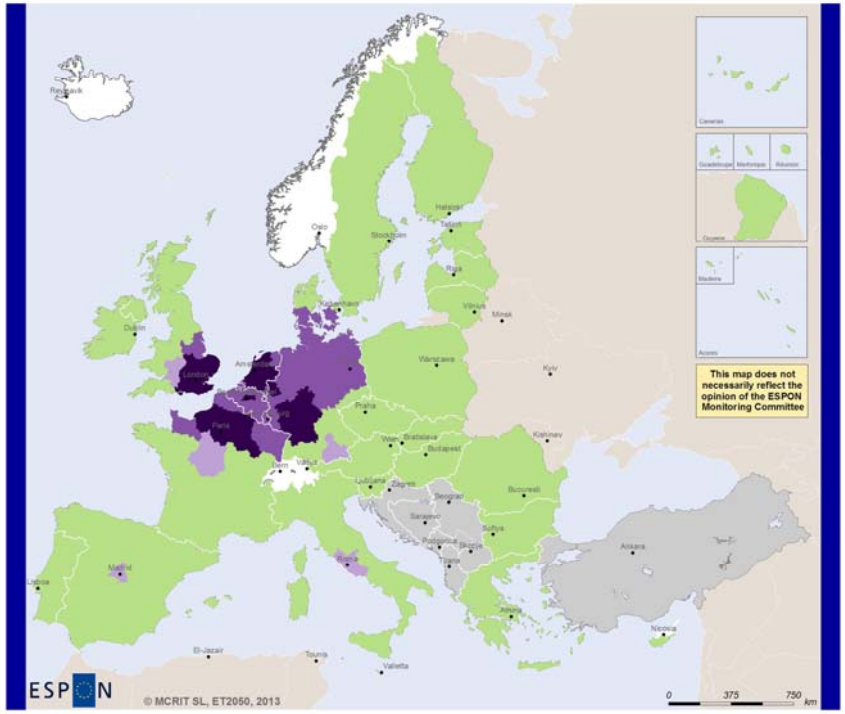
Passengers and Freight Global Accessibility

- Passengers and Freight accessibility are expected to increase below EU average
- Passengers accessibility is expected to increase over EU average
- Freight accessibility is expected to increase over EU average
- Passengers and Freight accessibility are expected to increase over EU average
- No data (ESPON space)
- No data (No ESPON space)

Global accessibility will increase around transport nodes: intercontinental airports and freight ports.

Global Accessibility 2010 - 2030 (Scenario A)

Measured as potential intercontinental airplane seats and containers in relation EU averag



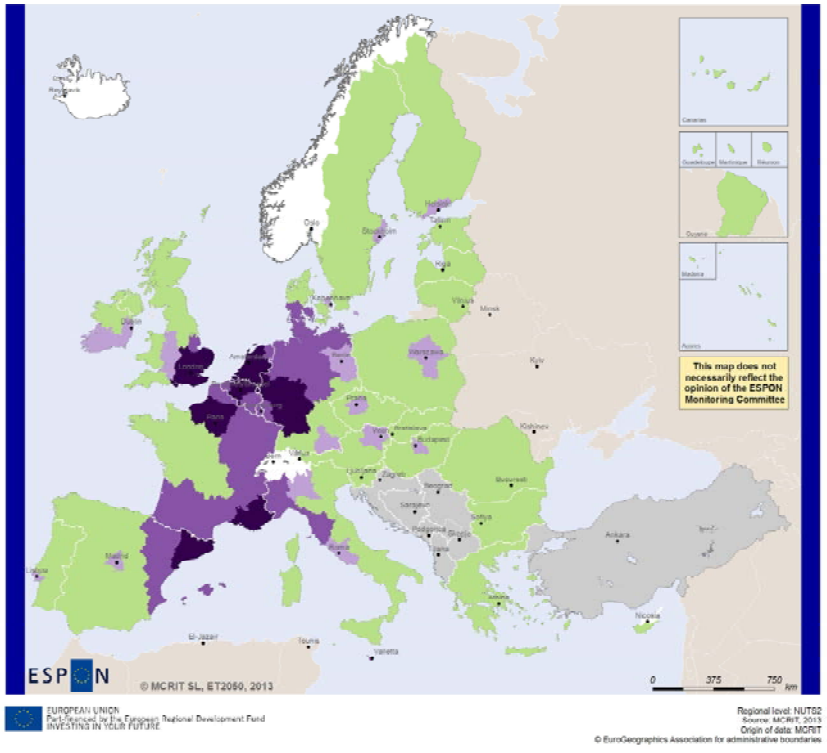
Passengers and Freight Global Accessibility

- Passengers and Freight accessibility are expected to increase below EU average
- Passengers accessibility is expected to increase over EU average
- Freight accessibility is expected to increase over EU average
- Passengers and Freight accessibility are expected to increase over EU average
- No data (ESPON space)
- No data (No ESPON space)

Scenarios 2030: Global Accessibility

Global Accessibility 2010 - 2030 (Scenario B)

Measured as potential intercontinental airplane seats and containers in relation EU average

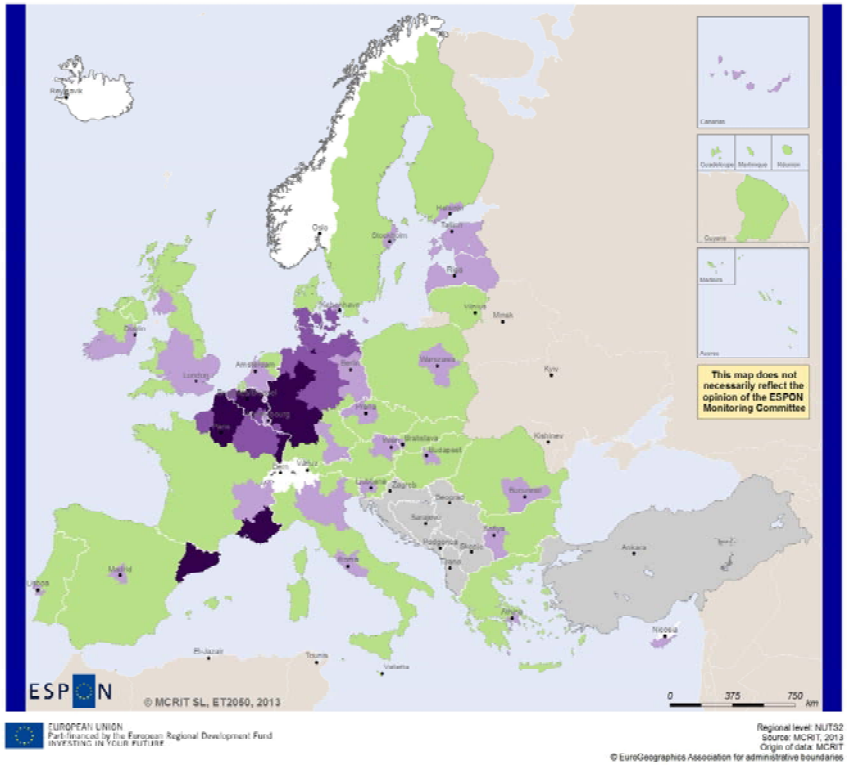


Passengers and Freight Global Accessibility

- Passengers and Freight accessibility are expected to increase below EU average
- Passengers accessibility is expected to increase over EU average
- Freight accessibility is expected to increase over EU average
- Passengers and Freight accessibility are expected to increase over EU average
- No data (ESPON space)
- No data (No ESPON space)

Global Accessibility 2010 - 2030 (Scenario C)

Measured as potential intercontinental airplane seats and containers in relation EU average



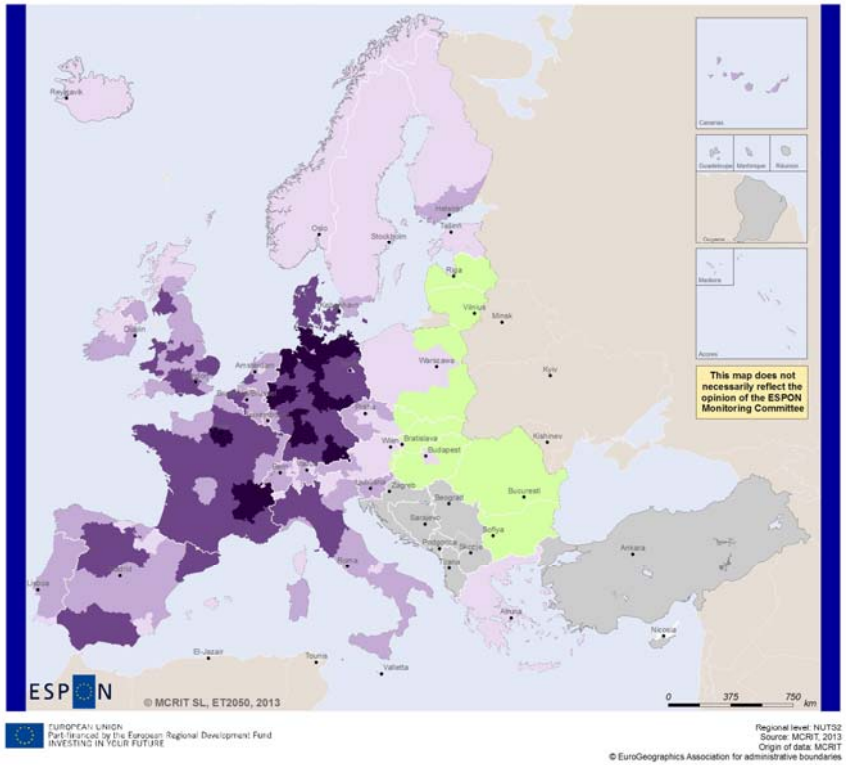
Passengers and Freight Global Accessibility

- Passengers and Freight accessibility are expected to increase below EU average
- Passengers accessibility is expected to increase over EU average
- Freight accessibility is expected to increase over EU average
- Passengers and Freight accessibility are expected to increase over EU average
- No data (ESPON space)
- No data (No ESPON space)

Scenarios 2030: European Accessibility

European Accessibility 2010 - 2030 (Baseline)

Measured as change in accessible population weighed by shortest access time



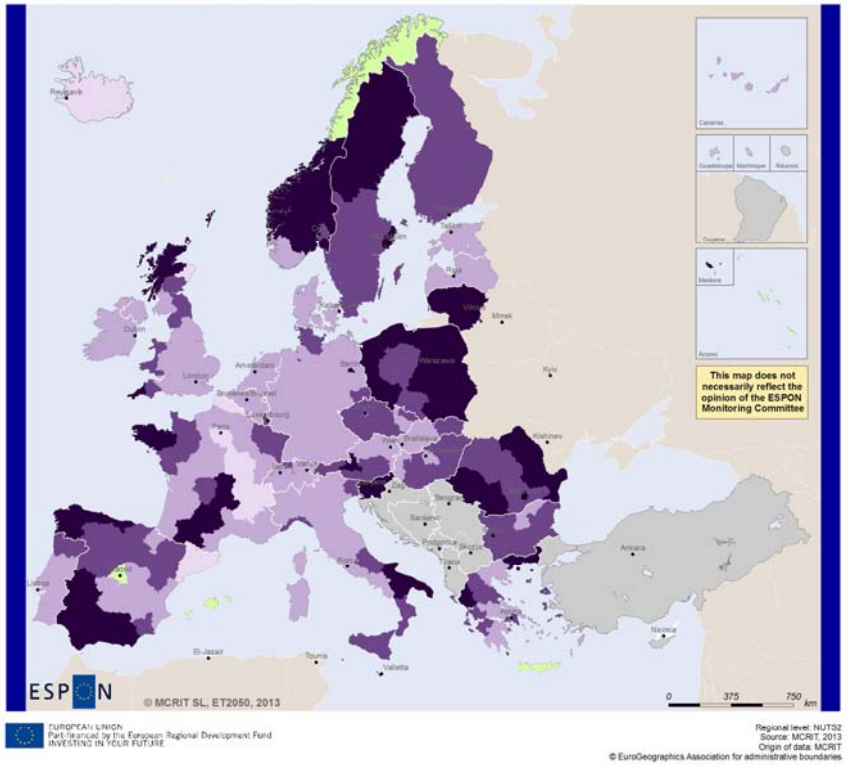
Absolute variation in accessibility 2010-2030 (Units: Millions Equivalent population)

- < - 0
- 1 - 5
- 5 - 25
- 25 - 50
- > 50
- No data (ESPON space)
- No data (No ESPON space)

Accessibility changes are very much influenced by population changes, because of the relative homogeneous transport endowment across Europe, and despite the relatively higher investments on infrastructure planned in Eastern European regions.
The accessibility in each NUTS3 is measured as the sum of the population of all other NUTS3 weighed by the shortest multimodal access time. NUTS3 population is attached to the capital city. Population in 2030 by MULTIPOLES-MASST models and shortest multimodal access by MOSAIC model.

European Accessibility 2030 (Scenario A)

Measured as relative difference in accessible population weighed by shortest access time respect to Baseline



Accessibility 2030, relative change Accessibility ScenarioA/ Accessibility Baseline (Units: %)

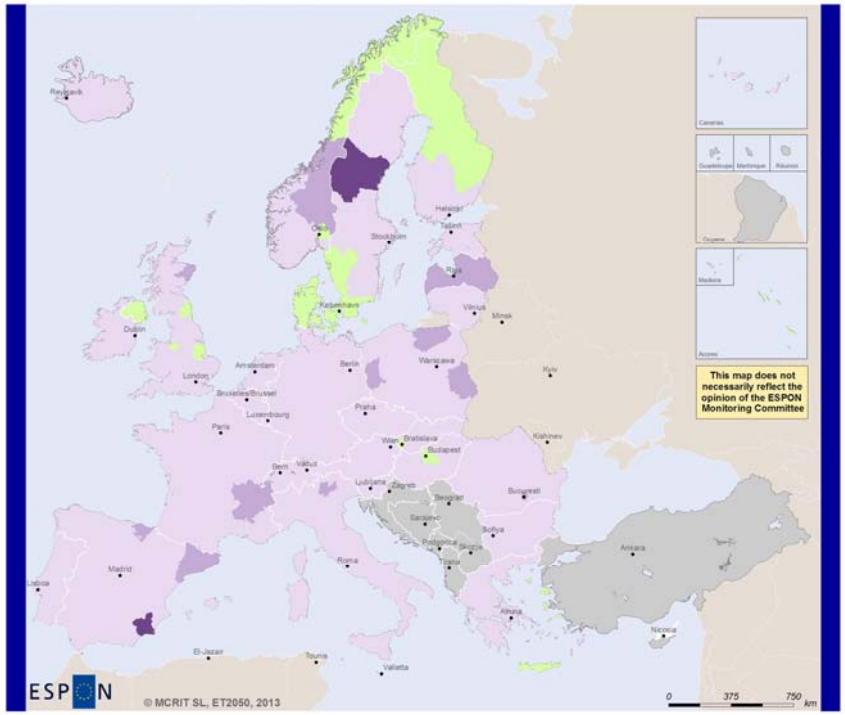
- < 0%
- 0% - 0,5%
- 0,5% - 1%
- 1% - 1,5%
- > 1,5%
- No data (ESPON space)
- No data (No ESPON space)

Accessibility changes are very much influenced by population changes, because of the relative homogeneous transport endowment across Europe, and despite the relatively higher investments on infrastructure planned in Eastern European regions.
The accessibility in each NUTS3 is measured as the sum of the population of all other NUTS3 weighed by the shortest multimodal access time. NUTS3 population is attached to the capital city. Population in 2030 by MULTIPOLES-MASST models and shortest multimodal access by MOSAIC model.

Scenarios 2030: European Accessibility

European Accessibility 2030 (Scenario B)

Measured as relative difference in accessible population weighed by shortest access time respect to Baseline



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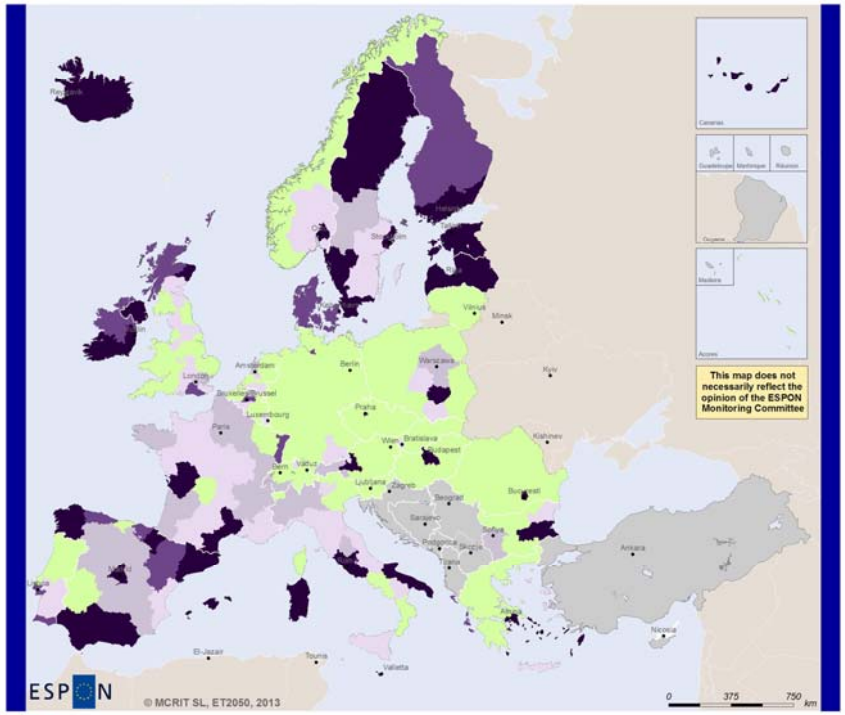
Accessibility 2030, relative change Accessibility ScenarioB/ Accessibility Baseline (Units: %)

- < 0%
- 0% - 0,5%
- 0,5% - 1%
- 1% - 1,5%
- > 1,5%
- No data (ESPON space)
- No data (No ESPON space)

Accessibility changes are very much influenced by population changes, because of the relative homogeneous transport endowment across Europe, and despite the relatively higher investments on infrastructure planned in Eastern European regions. The accessibility in each NUTS3 is measured as the sum of the population of all other NUTS3 weighed by the shortest multimodal access time. NUTS3 population is attached to the capital city. Population in 2030 by MULTIPOLES-MASST models and shortest multimodal access by MOSAIC model.

European Accessibility 2030 (Scenario C)

Measured as relative difference in accessible population weighed by shortest access time respect to Baseline



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Regional level: NUTS2
Source: MCRIT, 2013
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Accessibility 2030, relative change Accessibility ScenarioC/ Accessibility Baseline (Units: %)

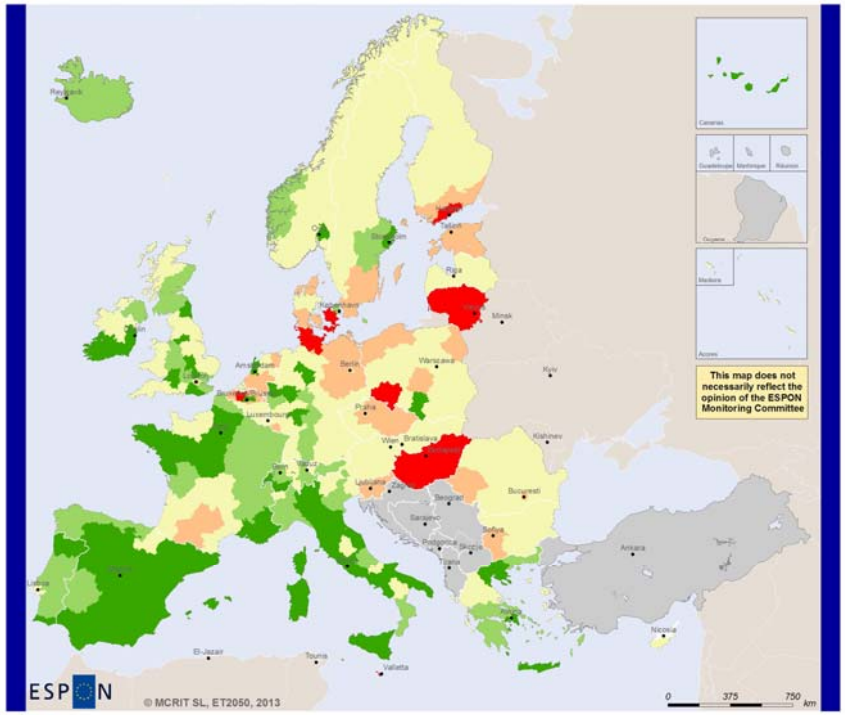
- < 0%
- 0% - 0,5%
- 0,5% - 1%
- 1% - 1,5%
- > 1,5%
- No data (ESPON space)
- No data (No ESPON space)

Accessibility changes are very much influenced by population changes, because of the relative homogeneous transport endowment across Europe, and despite the relatively higher investments on infrastructure planned in Eastern European regions. The accessibility in each NUTS3 is measured as the sum of the population of all other NUTS3 weighed by the shortest multimodal access time. NUTS3 population is attached to the capital city. Population in 2030 by MULTIPOLES-MASST models and shortest multimodal access by MOSAIC model.

Scenarios 2030: CO2 emissions due to transport

CO2 Transport Emissions 2010 - 2030 (Baseline)

Measured as saving potential emissions due to transport



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Regional level: NUTS2
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CO2 Transport emissions (Units: Millions of CO2 tonnes saved)

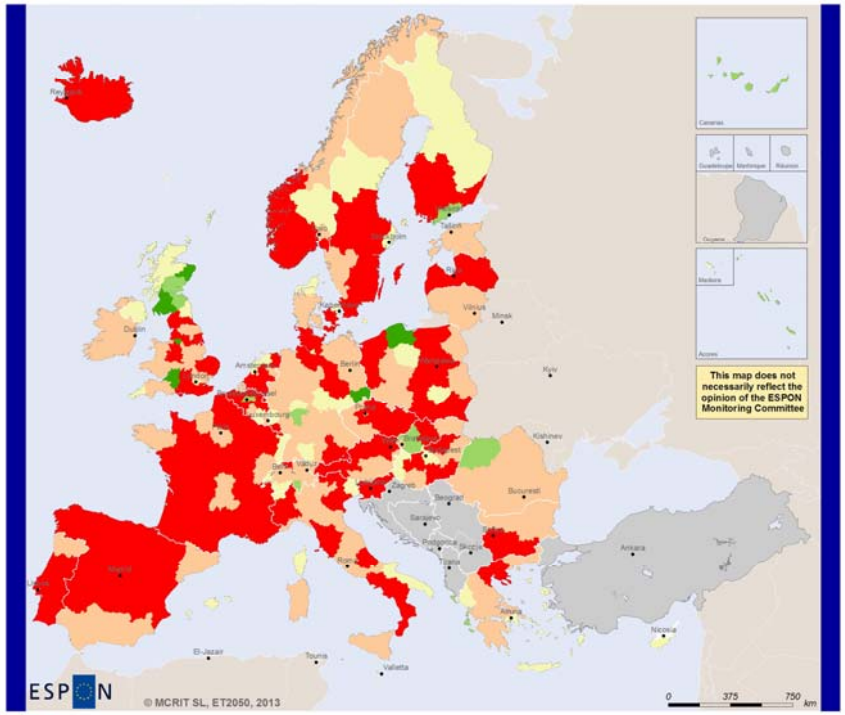
Results obtained by MOSAIC Model

- < - 100
- -100 - -50
- -50 - 0
- 0 - 50
- > 50
- No data (ESPON space)
- No data (No ESPON space)

Reduction of 16% of Transport CO2 emissions. The combined impact of economic crisis with reduced GDP growth, and the use of more environmentally friendly energy sources leads to a net reduction of CO2 emissions specially in more industrialised and populated regions.
Results are based on assumptions based on transport traffics forecasted by MOSAIC as well as in other economic sectors.

CO2 Transport Emissions 2030 (Scenario A)

Measured as relative change in saving potential emissions due to transport respect to Baseline



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Regional level: NUTS2
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CO2 emissions, relative change Emissions Scenario A / Emissions Baseline (Units: %)

Results obtained by MOSAIC Model

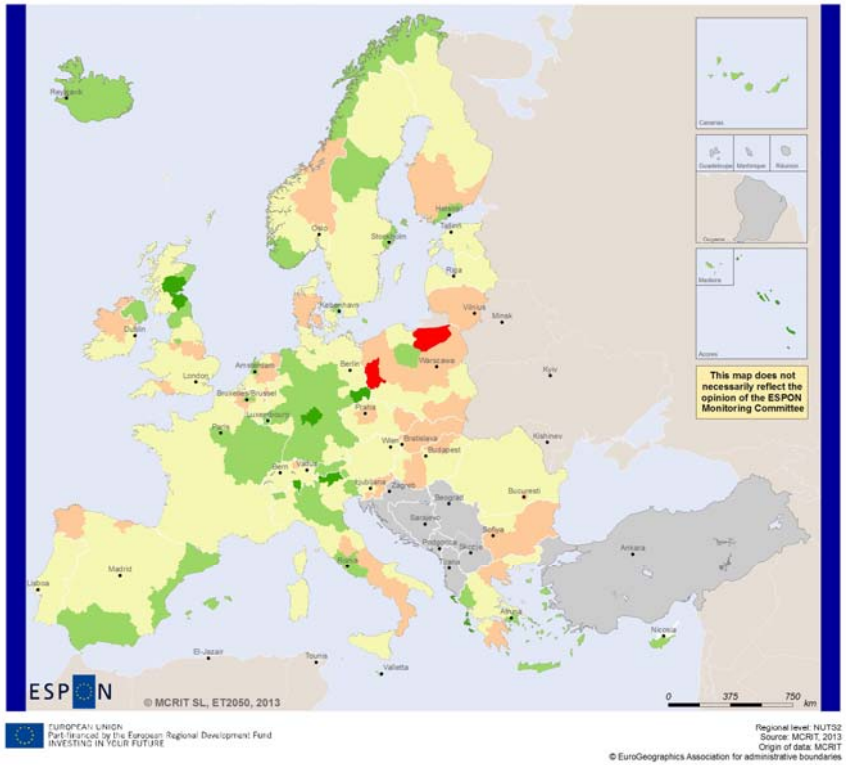
- < -10%
- -10% - -5%
- -5% - 0%
- 0% - 5%
- > 5%
- No data (ESPON space)
- No data (No ESPON space)

Results are based on assumptions based on transport traffics forecasted by MOSAIC as well as in other economic sectors.

Scenarios 2030: CO2 emissions due to transport

CO2 Transport Emissions 2030 (Scenario B)

Measured as relative change in saving potential emissions due to transport respect to Baseline



CO2 emissions, relative change Emissions Scenario B / Emissions Baseline (Units: %)

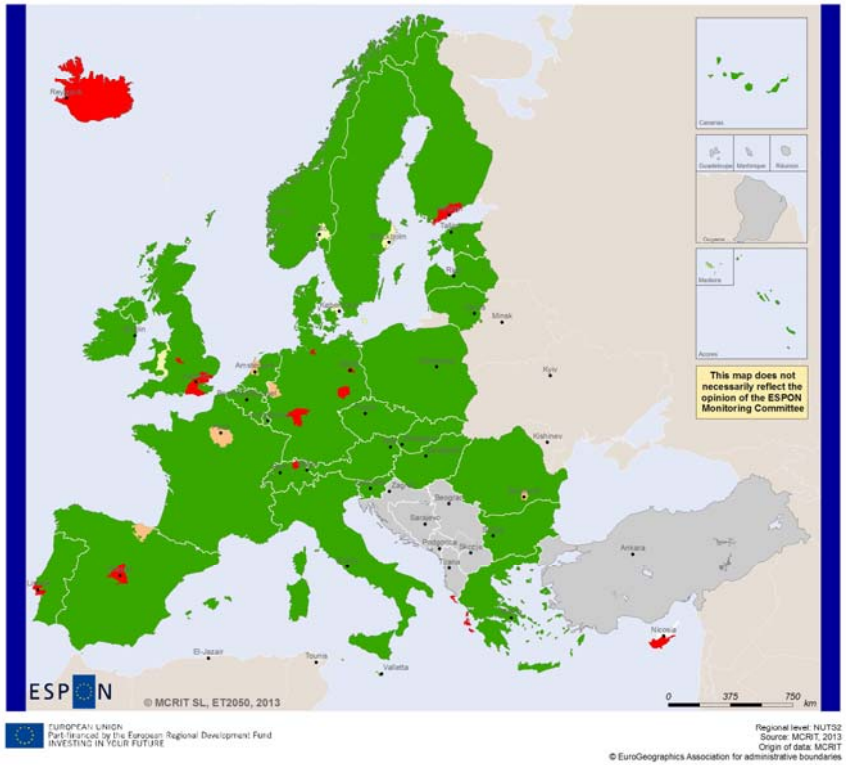
Results obtained by MOSAIC Model

- < -10%
- -10% - -5%
- -5% - 0%
- 0% - 5%
- > 5%
- No data (ESPON space)
- No data (No ESPON space)

Results are based on assumptions based on transport traffics forecasted by MOSAIC as well as in other economic sectors.

CO2 Transport Emissions 2030 (Scenario C)

Measured as relative change in saving potential emissions due to transport respect to Baseline



CO2 emissions, relative change Emissions Scenario C / Emissions Baseline (Units: %)

Results obtained by MOSAIC Model

- < -10%
- -10% - -5%
- -5% - 0%
- 0% - 5%
- > 5%
- No data (ESPON space)
- No data (No ESPON space)

Results are based on assumptions based on transport traffics forecasted by MOSAIC as well as in other economic sectors.

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European Territorial Scenarios 2050

Scenarios 2050

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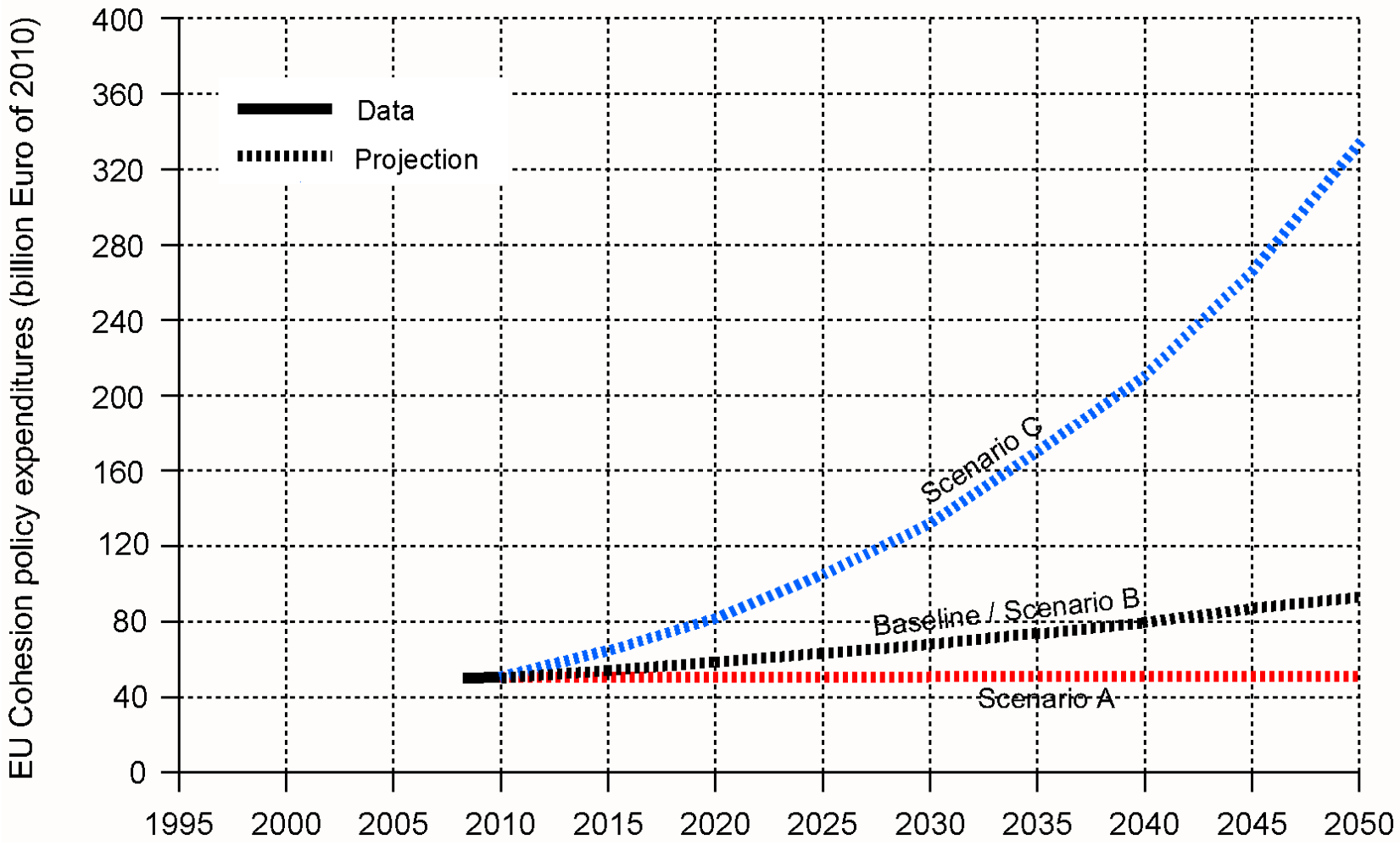
Scenarios 2050: General Specifications

Year	Population EU27 (million)	Population EU31 (million)	GDP EU27 (billion € of 2010)	GDP EU31 (billion € of 2010)	Annual net migration EU27 (1,000)	Annual Structural Funds (billion € of 2010)	Oil price per barrel (€ of 2010)
1981	459.8	470.5	7,067	7,472	77	5.0	39
1986	464.3	475.2	8,073	8,524	285	8.2	19
1991	471.4	482.7	9,534	10,037	1078	17.8	18
1996	478.1	489.7	10,334	10,875	748	34.7	20
2001	482.1	494.1	11,710	12,251	654	37.6	25
2006	491.2	503.6	12,751	13,329	1578	48.2	55
2011	500.6	513.6	12,596	13,158	857	50.3	63
2016	514.1	527.7	13,370	14,009	1239	55.4	90
2021	526.0	540.0	14,548	15,207	1327	60.2	96
2026	534.8	549.3	15,774	16,487	1300	65.4	102
2031	540.7	555.6	16,903	17,668	1290	70.5	109
2036	542.4	557.7	18,105	18,952	1265	75.6	115
2041	540.0	555.5	19,393	20,273	1217	80.9	121
2046	534.4	550.1	20,772	21,718	1163	86.7	127
2051	526.0	541.7	22,251	23,268	1094	92.6	133

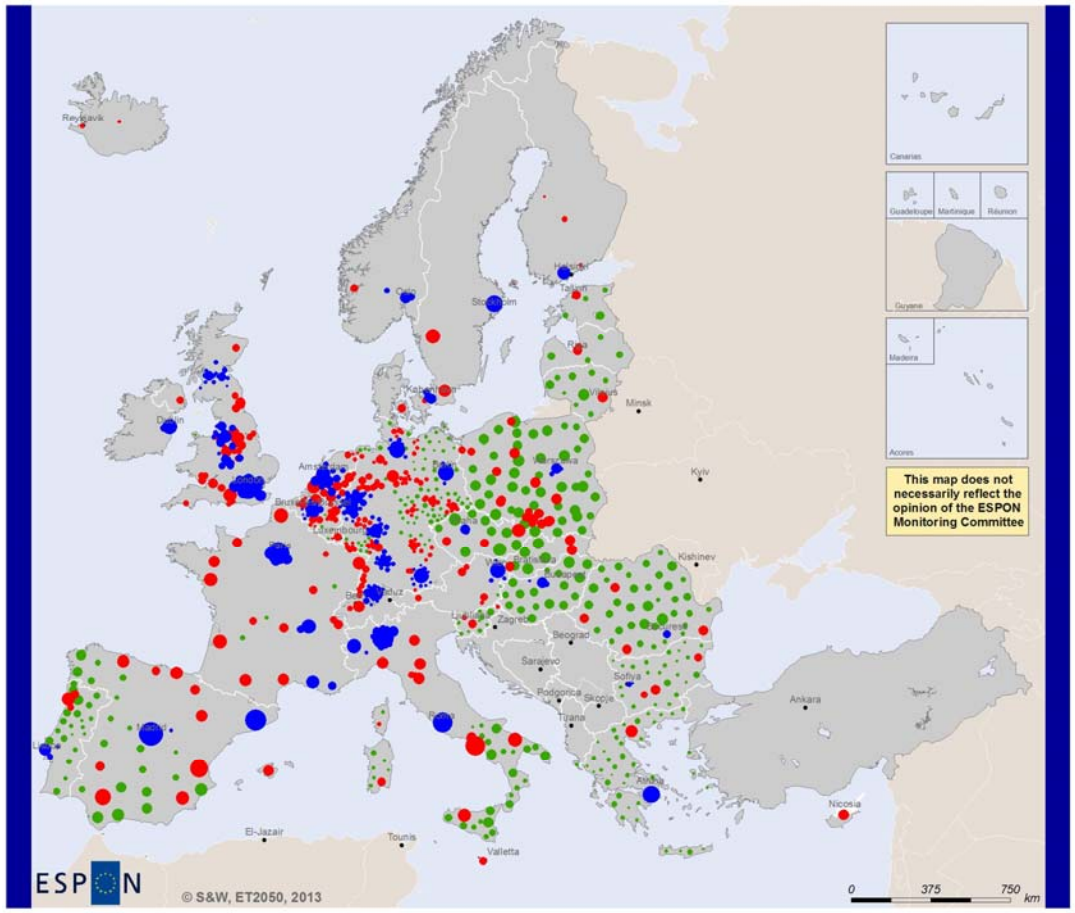
Scenarios 2050: Cohesion Policies



Scenarios 2050: Structural Fund Subsidies

Structural Fund Subsidies (Scenarios A, B and C)

Measured as per cent of the total volume of Structural Fund Subsidies



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Regional level: NUTS3
Source: Spiekermann and Wegener Urban and Regional Research (S&W), 2013
Origin of data: SASI Model, 2013
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Subsidies allocated to each region expressed in % of the total Structural Funds

Results obtained by SASI Exploratory Scenarios

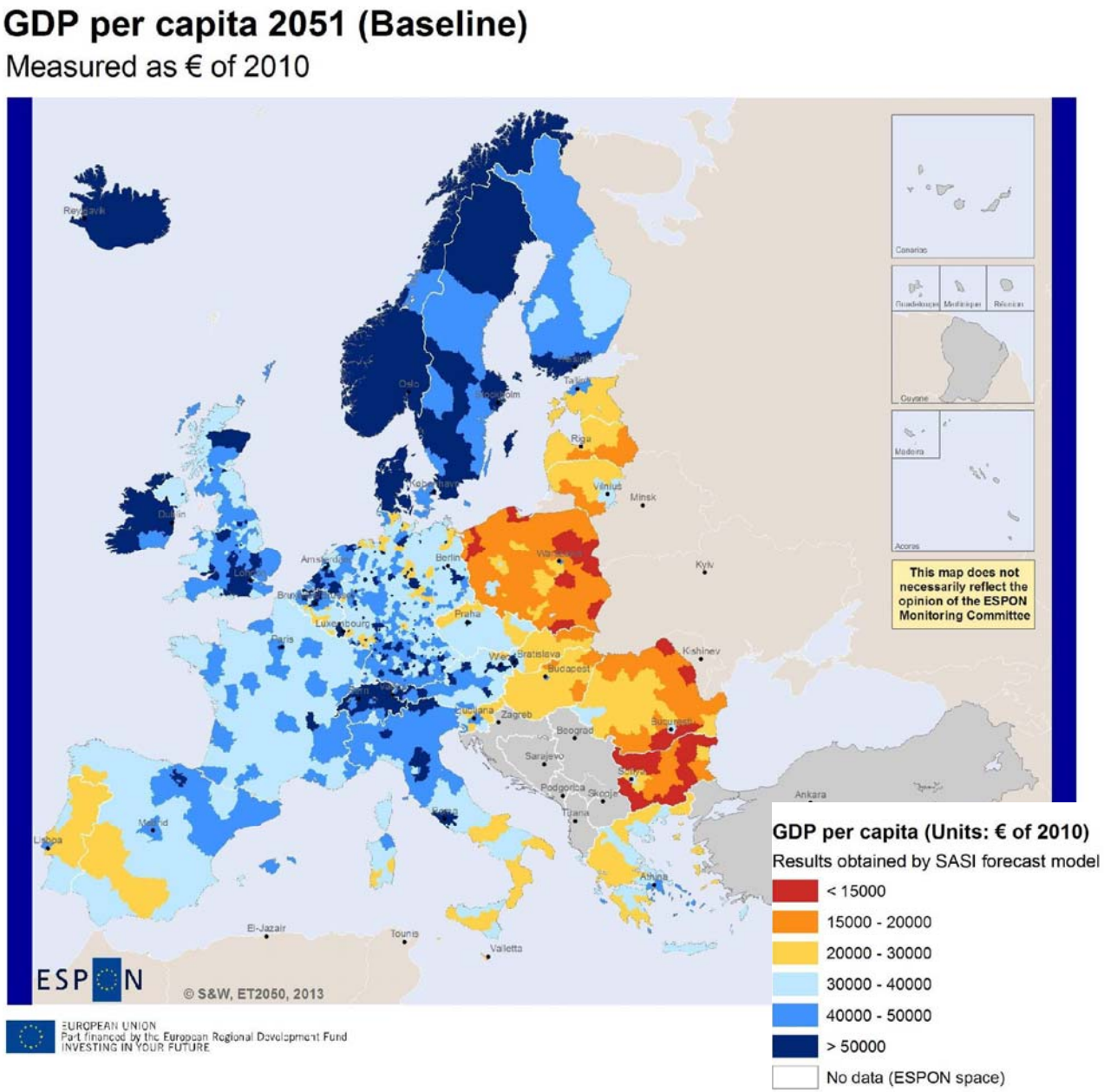
- Scenario A
- Scenario B
- Scenario C

- 1.0 % of EU27 Structural Funds
- 0.5% of EU27 Structural Funds
- 0.25% of EU27 Structural Funds

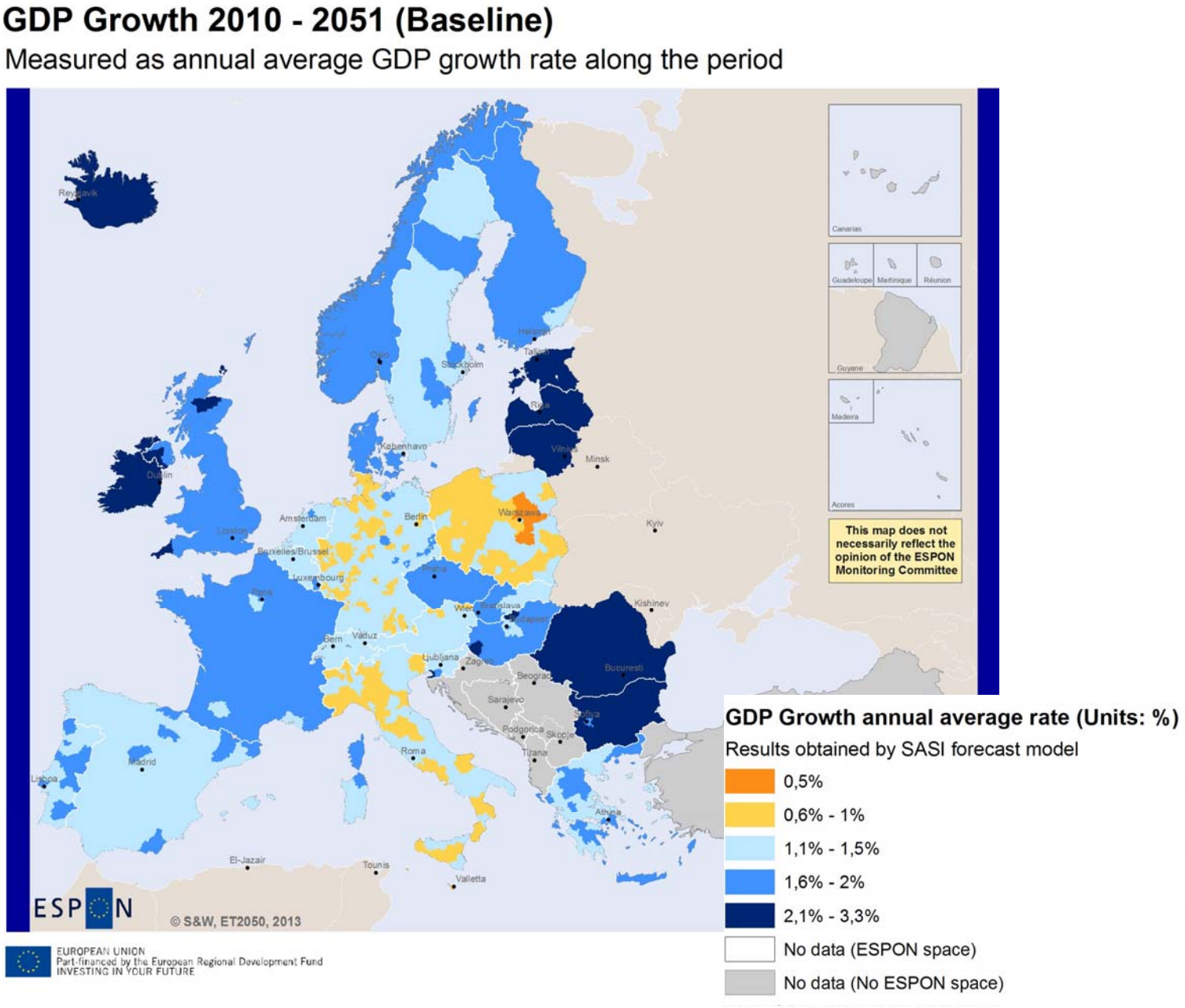
Scenarios 2050: Main Results

Period	GDP				GDP per capita			
	Base	A	B	C	Base	A	B	C
1981-2008	+2.22	+2.22	+2.22	+2.22	+1.94	+1.94	+1.94	+1.94
2008-2013	–0.39	–0.39	–0.39	–0.39	–0.84	–0.84	–0.84	–0.84
2013-2031	+1.60	+1.72	+1.66	+1.62	+1.22	+1.33	+1.28	+1.24
2031-2051	+1.39	+1.41	+1.40	+1.39	+1.51	+1.54	+1.53	+1.52

Baseline 2050: GDP per capital results



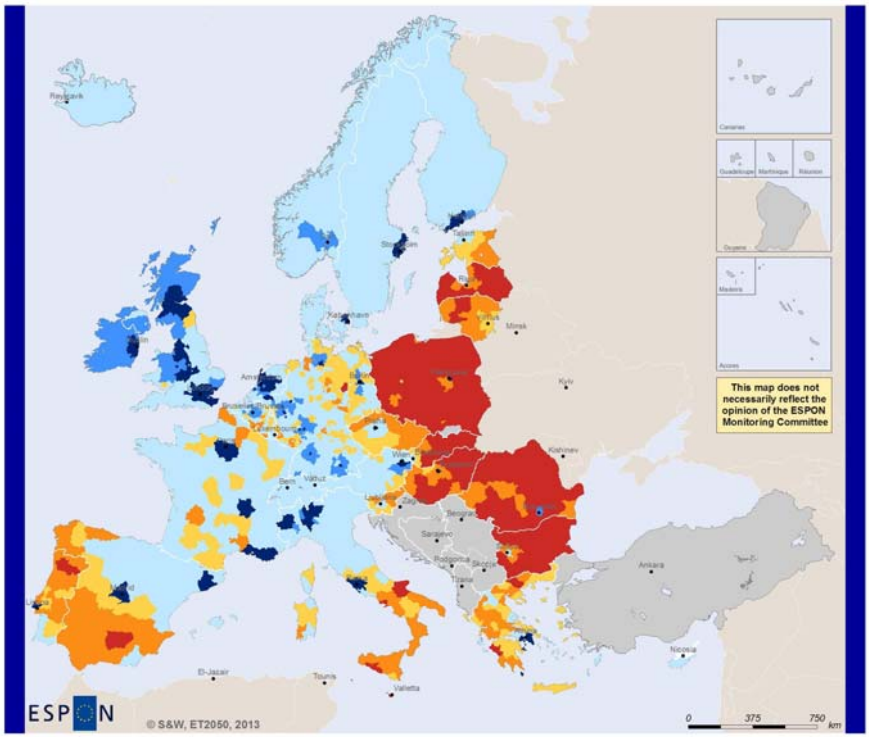
Baseline 2050: Growth 2010-2050



Scenarios 2050: Relative Differences

GDP per capita 2051 (Scenario A)

Measured as relative change of GDP per capita respect to Baseline



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Regional level: NUTS3
Source: Spiekermann and Wegener Urban and Regional Research (S&W), 2013
Origin of data: SASI Model, 2013
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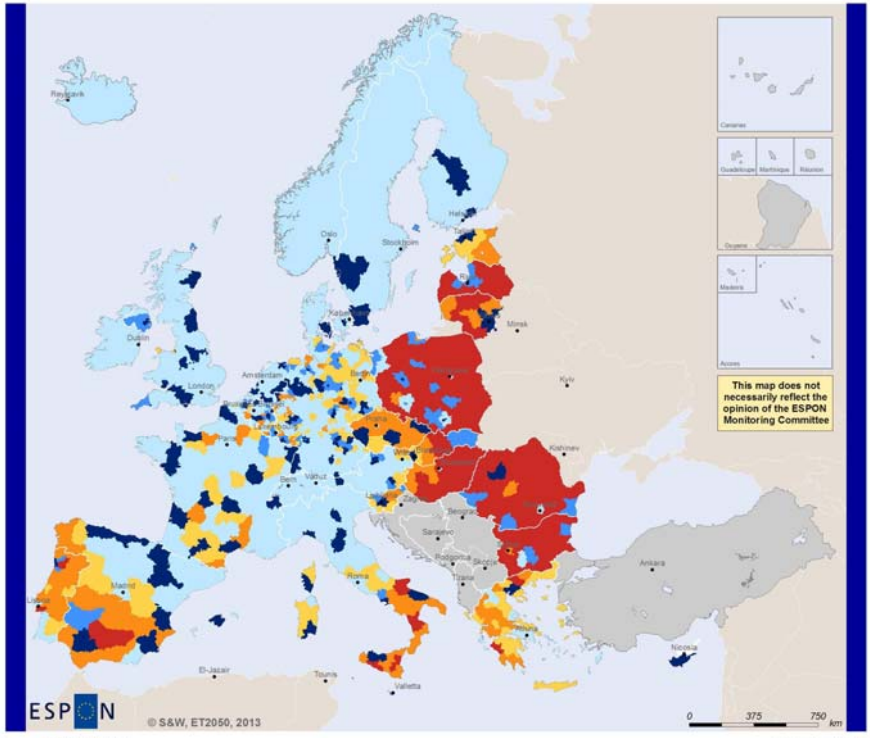
GDP 2051, relative change in GDP per capita Scenario A / Baseline (Units: %)

Results obtained by SASI forecast model

- < -5%
- -5% - -2,5%
- -5% - 0%
- 0% - 2,5%
- 2,5% - 5%
- > 5%
- No data (ESPON space)
- No data (No ESPON space)

GDP per capita 2051 (Scenario B)

Measured as relative change of GDP per capita respect to Baseline



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Regional level: NUTS3
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Origin of data: SASI Model, 2013
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GDP 2051, relative change in GDP per capita Scenario B / Baseline (Units: %)

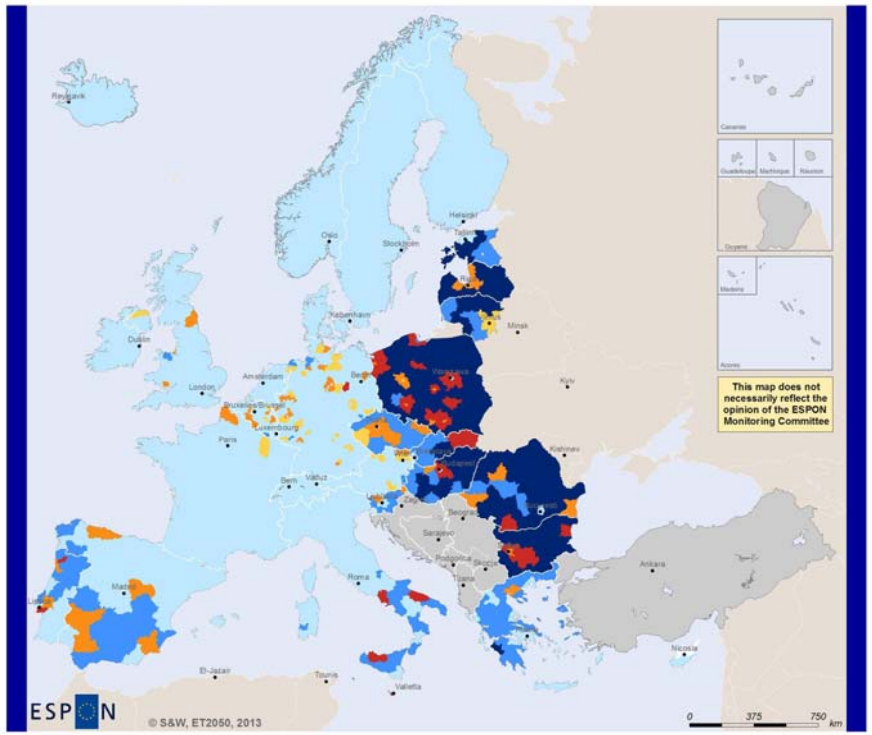
Results obtained by SASI forecast model

- < -5%
- -5% - -2,5%
- -2,5% - 0%
- 0% - 2,5%
- 2,5% - 5%
- > 5%
- No data (ESPON space)
- No data (No ESPON space)

Scenarios 2050: Relative Differences

GDP per capita 2051 (Scenario C)

Measured as relative change of GDP per capita respect to Baseline

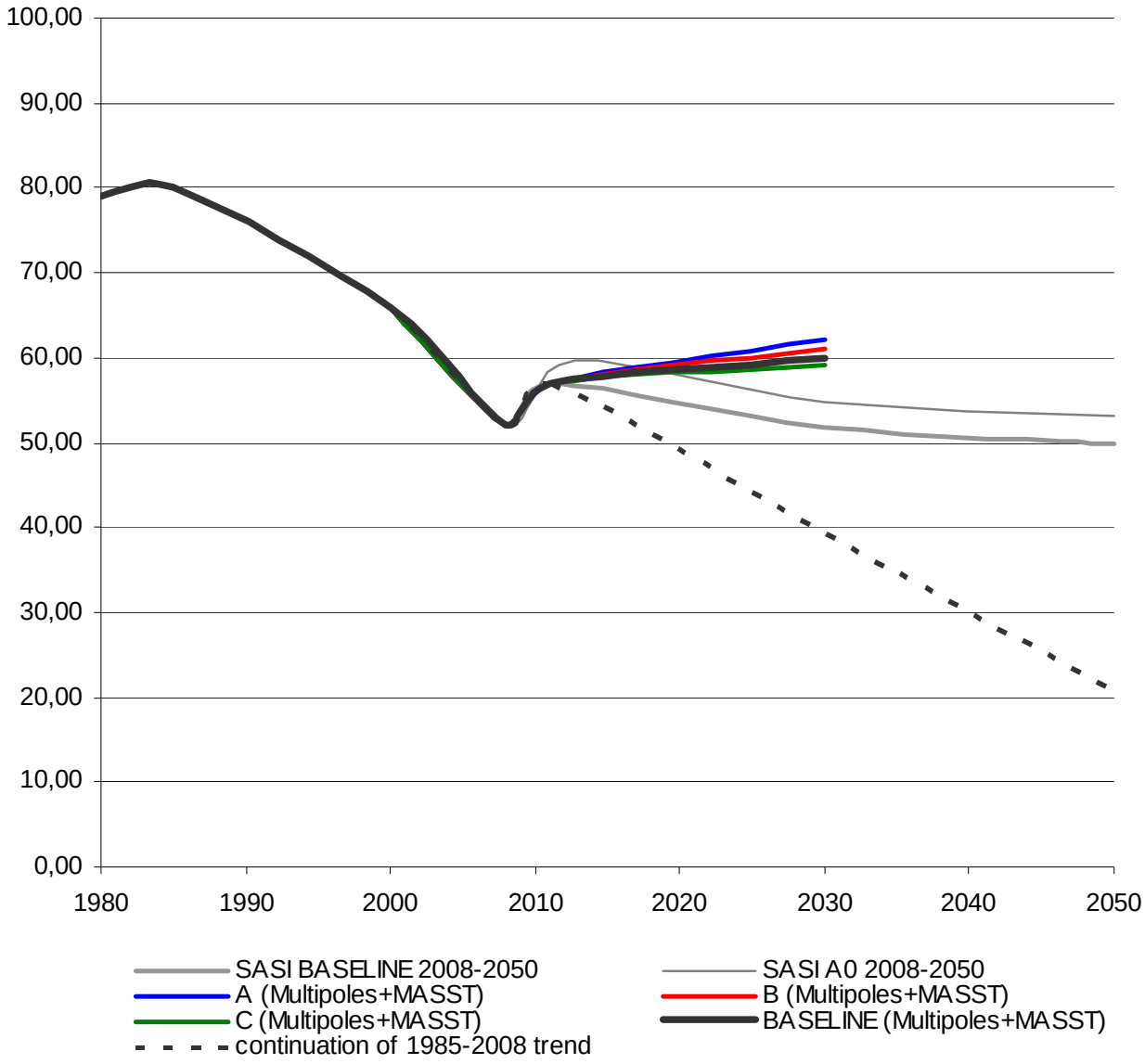


GDP 2051, relative change in GDP per capita Scenario C / Baseline (Units: %)

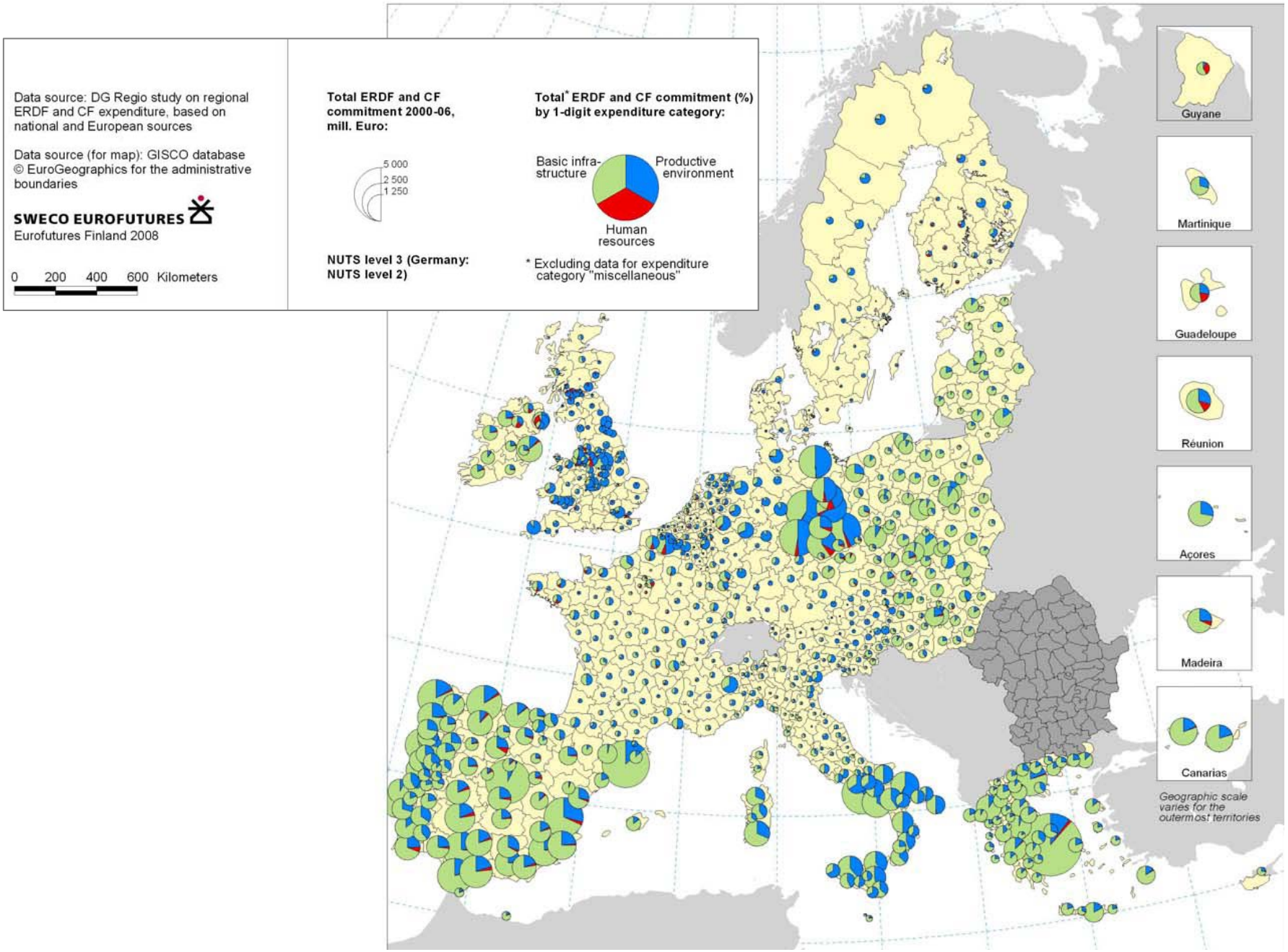
Results obtained by SASI forecast model

- < -5%
- -5% - -2,5%
- -2,5% - 0%
- 0,0% - 2,5%
- 2,5% - 5%
- > 5%
- No data (ESPON space)
- No data (No ESPON space)

Change in the Economic Convergence process



Cohesion and Structural Funds 2000-06



The Impact of Cohesion Policy

"The problem regarding Cohesion policy is that there are very few instruments to measure the impact of the investment," said Claire Dheret of the European Policy Centre, a Brussels-based think tank.

But, says Danuta Huebner, referring to her native Poland, an EU member since 2004: "It is a different country now. That's all thanks to European contributions"

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“Too seek Europe, is to make it!

Europe exists through its search for the infinit

-and this is what I call adventure”

Zygmunt Bauman, “An Adventure called Europe”

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